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**PELVIC FLOOR DISORDERS:
CURRENT STATUS
TECHNOLOGICAL ADVANCES
AND PERSPECTIVES**

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ABSTRACTS

SUPPLEMENT

A - ANATOMY AND PHYSIOLOGY

A1 FASCIAL CONTINUITY OF THE PELVIC FLOOR WITH THE ABDOMINAL AND LUMBAR REGION

CARLA STECCO¹
¹University of Padova

The connection between the pelvic floor, abdomen and lower back is clinically recognized but the anatomical basis of this link requires further clarification. The purpose of this work was to review the literature on pelvic fasciae, in order to provide a description of their continuity with the fasciae of abdominal muscles and lower back. Basing of the Literature review and the dissection, we propose a precise organization of the fasciae of the pelvic floor. Particularly, 3 different myo-fascial layers could be recognized:

- 1) superficial fascia;
- 2) superficial layer of the deep fascia;
- 3) deep layer of the deep perineal fascia; this layer can be divided into two separate layers by the levator ani muscle.

Anatomically, the continuity in the fasciae of the abdominal wall, pelvic floor and lumbar region is plausible.

A "new" theory of fascial anatomical continuity could have implications in the understanding of the clinical presentation of pelvic pain, the comprehension of the anatomical link between abdominal-lumbar disorders and pelvic floor, and in the treatment of chronic pain conditions, leading to an enhancement in current anatomical knowledge and therapies.

Keywords : Fascia, thoracolumbar fascia, anatomy, pelvic floor

A2 EFFECTS OF CESAREAN AND VAGINAL DELIVERY ON ABDOMINAL MUSCLES AND FASCIA

CARLA STECCO¹, CHENGLEI FAN¹, DE CARO RAFFAELE¹
¹University of Padova

Introduction: The possible disorders after cesarean section (CS) can interfere with the quality of life, most commonly pain. **Aim:** The aim of this study was to evaluate the changes of the fasciae and the abdominal muscles with CS and vaginal delivery and investigate the possible associations between different delivery mode and pain.

Materials and Methods: 13 primiparous women had CS (age: 41.6±5.8), 10 natural delivery women (age: 47.0±15.2), 13 nulliparous and healthy women (age: 29.3±14.8) were evaluated the thickness of the abdominal muscles and fasciae on both sides at rest and contraction position by ultrasound. Global spinal mobility tests and Pain Questionnaire were used to collect data related range of movement, pain intensity, frequency and location. Associations between the changes of muscle and fascia and pain were examined.

Results: The CS and vaginal delivery could influence the morphology of abdominal muscle and fasciae although the effect is not homogeneous. Compared with the nulliparous group, the abdominal muscles were significantly thinner at least on side at relaxation and contraction position both in CS and vaginal delivery group, while, there is no significant difference between the CS and vaginal delivery group. The fascia of RA was significantly thicker on both side at relaxation and contraction position both in CS and vaginal delivery group except the left side in CS group during contraction. The loose connective tissue was significantly thicker on both side at relaxation and contraction position both in CS and on the right side during relax and left side during contraction in vaginal delivery group. The F OE, FOI/TRA, were significantly thicker in CS and vaginal delivery group at least on one side during relax or contraction position in mammillary and/or axillary line, while FOE/OI, was significantly thicker only in CS. A great asymmetry of the thickness of between right and left side was found in RA and TrA during relaxation position in the vaginal delivery group, EO during relaxation position and IO during both relaxation and contraction position in the C-section group. CS group with these alterations in fascia and abdominal muscles seemed to be those who suffered most from chronic pain. There were no significant differences in the mobility tests measures among the three groups. There was a significant, moderate correlation between the loose connective tissue and SP (r =0.5), AP (r =0.5), LBP (r =0.5); the IRD and SP (r =0.5), AP (r =0.5). There was weakly correlation between the muscle changes and pain.

Conclusions: The CS and vaginal delivery could lead to the thinner abdominal muscles and thicker fascia, especially the thick loose connective tissue between the two fascia sublayers, and the dissymmetry on left and

right side. These results implicated that these alterations can probably better explain the role of the fascia and abdominal muscles in pain with CS.

Keywords : caesarean, vaginal delivery, pain, fascia, abdominal muscles

A3 MODULATION OF THE EXTRACELLULAR MATRIX PRODUCTION IN CELLS OF HUMAN FASCIA ACCORDING TO THE SEX HORMONE LEVELS

CARLA STECCO¹, CATERINA FEDE¹, RAFFAELE DE CARO¹
¹University Of Padova

It is now recognized that women suffer from myofascial pains more than men, and that the muscular fasciae can respond to hormonal stimuli, thanks to the expression of sex hormones receptors, but how the fasciae can modify their structure under hormonal stimulation is not clear.

In this work an immunocytochemical analysis of collagen-I, collagen-III and fibrillin were carried out on fibroblasts isolated from human fascia lata after an in vitro treatment with different levels of sex hormones β -estradiol and/or relaxin-1, according to the different phases of a woman period (follicular, periovulatory, luteal, post-menopausal phases and pregnancy). We have demonstrated for the first time that cells of fascia can modulate the production of the extracellular matrix according to the hormone levels, when treated with β -estradiol: collagen I goes down from 6% of positivity of the follicular phase to 1.9 in the periovulatory phase. But, when in the cell culture Relaxin-1 was added, the production of extracellular matrix decreased and it was maintained at the same level (1.7% of collagen I, both with follicular and periovulatory levels of hormones). These results confirmed the antifibrotic function of Relaxin-1 by the ability to reduce matrix synthesis, and help to explain why women with hormonal dysfunctions may have myofascial pains by the dysregulation of extracellular matrix production.

Keywords : fascia, estradiol, sex hormones, myofascial pain

A4 MYOFASCIAL RELATED ISSUE: ASSESSMENT AND THERAPY

MAREK JANTOS¹
¹Behavioural Medicine Institute of Australia, Adelaide, Australia; Dept. human Anatomy, Medical University of Lublin, Poland

Structurally and functionally the pelvis is a complex anatomical region. Within its bony confines converge multiple biological systems and within its cavity lay organs that are at the center of various pelvic pain syndromes. In clinical practice, research and pain modelling very little consideration has been given to the role of the fascial system which invests every organ, nerve, blood vessel and muscle. Given that fascia forms a fibrous communication system which conveys mechanical information to every cell and organ, changes in its malleability and plasticity will impact the optimal performance of organs in the pelvis. The rich innervation of fascia and the ganglia embedded in its network directly links it to chronic pain and peristalsis of organs. A model of chronic pain will be introduced, in which pelvic muscles and tensional changes within the fascial system are linked to symptoms of organ distress, loss of function and general perception of ill health.

Keywords : Myofascial Related Issue: Assessment and Therapy

B - PROLAPSES

B1 EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT, BUT WERE AFRAID TO ASK: AN OWN LAWSUIT EXPERIENCE AFTER MESH SURGERY

ION ANDREI MUELLER-FUNOGEA M.D., PH.D.¹
¹Sankt Antonius Hospital Eschweiler Germany
²Pelvic Floor Unit

Use of surgical mesh through the vagina to treat POP has been associated with higher rates of mesh-related complications, including mesh poking through the vaginal skin, pelvic pain and pain with intercourse. In 2019, the FDA ordered manufacturers of surgical mesh for the transvaginal repair of

POP to stop selling and distributing their products in the U.S.A. In Europe Great Britain is following this trend.

Transvaginal mesh lawsuits list a variety of claims, depending mostly on the complications experienced by the women filing the suits. In many cases, women who experience any of these severe side effects have limited treatment options, which may include additional surgeries to remove the pelvic mesh and repair damaged tissue. Ethicon, a division of Johnson & Johnson, is the subject of more than 40,727 vaginal mesh lawsuits as of May 2019. Many side effects happen lately and confuse patients as well as doctors. But what about laparoscopic meshes? We don't really have long-term studies.

We experience in Europe and particularly in Germany a trend to manage POP with laparoscopic mesh techniques in very many variants, free-hand or robotic.

Laparoscopic mesh or tape techniques seem to be applied frequently in order to bypass possible complications of the vaginal meshes and believing they are safe. Is it really so?

In Germany lawsuits particularly claim against surgeon and his employing hospital and not (yet) against manufacturer. The compensations are not as big as in the U.S.A., but endanger the professional future and also the private financial situation of the surgeon.

In an actual lawsuit against managing POP through inserting laparoscopic tapes we experienced a late perforation of the mesh in the bowel. We want to analyse the possible points of attack in the court and find ways to defend ourselves:

- indication for surgery: anatomic- and/or functional disorders?
 - the most important: counseling the patient about need of surgery, alternative methods and possible short- or long-term complications
 - choosing the best approach: vaginal, transperitoneal or both
 - qualification of the pelvic surgeon and his pelvic floor unit
 - counseling the patient in choosing her most appropriate INDIVIDUAL therapy; choosing FOR HER the „best“ procedure: TO mesh or NOT TO mesh
 - post-operative care, detecting complications early and searching the best way to manage them; guidance of the patient to avoid lawsuits
- We shall together think more about this aspect of our practice as pelvic surgeons!

Keywords: Vaginal mesh, lawsuit, claim, pelvic surgeon, laparoscopic mesh, mesh complications

Acknowledgments: No conflict of interests

B2 BIOMECHANICAL MAPPING MAY PREDICT CHANGES AFTER PELVIC ORGAN PROLAPSE SURGERY

VLADIMIR EGOROV¹, VINCENT LUCENTE², PETER TAKACS³,
S. ABBAS SHOBEIRI⁴, LENNOX HOYTE⁵, HEATHER VAN
RAALTE⁶

¹Advanced Tactile Imaging, Inc.

²The Institute For Female Pelvic Medicine & Reconstructive Surgery

³Eastern Virginia Medical School

⁴Inova Fairfax Hospital

⁵The Pelvic Floor Institute

⁶Princeton Urogynecology

Objective: To explore whether pre-surgical biomechanical conditions of the female pelvic floor influence the biomechanical parameter changes after pelvic organ prolapse (POP) surgeries.

Methods: This clinical study was designed to explore changes in tissue elasticity, pelvic support, and functions (contractive strength, muscle relaxation speed, muscle motility) after POP surgeries. A Vaginal Tactile Imager (VTI) was used for biomechanical mapping of the pelvic floor before and 4+ months after surgery. The VTI data were acquired for manually applied deflection pressures to vaginal walls and pelvic muscle contractions [1]. VTI software permits automated computation of 52 biomechanical parameters. The two-sample t-test ($p < 0.05$) was employed to test the null hypothesis that the data in Group 1 (positive VTI parameter change after surgery) and Group 2 (negative VTI parameter change after surgery) belong to the same distribution.

Results: Seventy-eight clinical cases involving 255 surgical procedures at five clinical sites were analyzed. Each of the 78 cases had undergone planned surgical procedures as the best fit proposed for the specific pelvic conditions by a urogynecologist. All 52 t-tests for Group 1 versus Group 2 have p-value ranging from $4.0 \cdot 10^{-10}$ to $4.3 \cdot 10^{-2}$. This indicates that all of the 52 parameter changes after surgery depend on pre-surgical conditions. Fifty of the 52 testing correlation outcomes for VTI parameter changes versus their pre-surgical values have p-value in the range $3.7 \cdot 10^{-18}$ to $1.6 \cdot 10^{-2}$, with Pearson correlation coefficient ranging from -0.79 to -0.27. Results for two parameters are shown in Figs 1 and 2. This means that post-surgical

changes of VTI parameters have negative correlation with the pre-surgical values of these parameters. These observed negative correlations signify that POP surgery improves pelvic floor conditions for low values of the biomechanical parameters, associated with weak pelvic floor conditions.

Conclusions:

POP surgery, in general, improves the biomechanical conditions and integrity of a weak pelvic floor. The pre-surgical VTI parameters can predict biomechanical changes resulting from POP surgery.

Keywords: Pelvic organ prolapse, pelvic surgery outcome, biomechanical mapping

References: 1. Egorov V, Lucente V, van Raalte H, Murphy M, Ephraim S, Bhatia N, Sarvazyan N. Biomechanical mapping of the female pelvic floor: changes with age, parity and weight. *Pelvipiperineology* 2019; 38: 3-11.

Fig.1 - Posterior Level II pelvic support change (pressure gradient) after surgery versus its pre-surgery value.

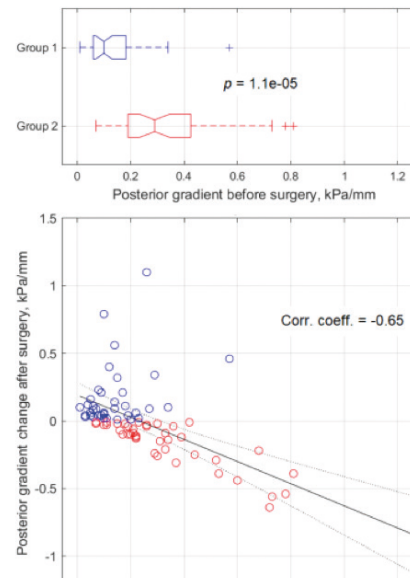
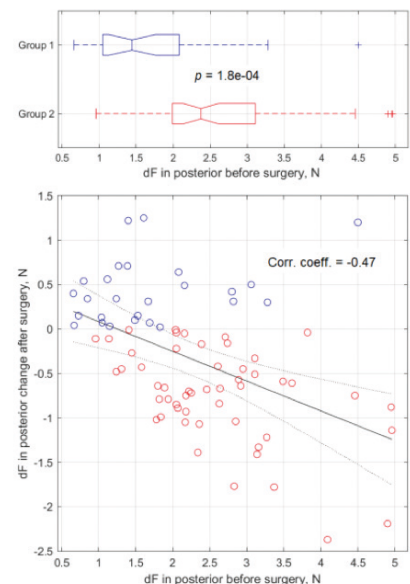


Fig.2 - Muscle contractive force change (dF) after surgery versus its pre-surgery value (reflex contraction, cough).



Acknowledgments: This research was supported by the National Institute On Aging of the National Institutes of Health under Awards Number SB1AG034714.

B3 COMPLICATION OF RECONSTRUCTIVE PLASTIC SURGERIES CONCERNING PELVIC ORGAN PROLAPSED AT WOMEN

MIKHAIL SOLUYANOV¹¹Research Institute of Clinical and Experimental Lymphology – Branch of The Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences**Purpose:** Assess the incidence of complications after surgical treatment of pelvic organ prolapse using mesh

Materials and methods. From 2013 to 2016 in clinic Research Institute of Clinical and Experimental lymphology 179 patients with a pelvic organ prolapse with use of synthetic materials have been operated. All patients underwent vaginal and rectal inspection on a gynecologic chair with assessment of a stage of a prolapse and definition of the leading point of a prolapse on the POP-Q system (ICS 1996). Average age of patients was 60.7 years. Most of patients were in the postmenopausal period more than 5 years. All patients were subject to expeditious treatment of a prolapse with use of synthetic materials. The average time of operation was 64,31 minute. Average blood loss has made about 200 ml. Spinal anesthesia has been chosen as the most preferable. The general anesthesia was used when carrying out simultaneous operations and flat refusal of the patient of spinal anesthesia.

Results: The average time of stay of the patient in a hospital was 18 days. To all patients antibacterial therapy was carried out by an antibiotic of a wide range. The antibiotic was entered into time of operation and within 5 days of the postoperative period. In parallel correction of a pelvic organ prolapse, carried out the combined operations, such as perineoplasty, amputation of a neck of the uterus, stress urinary surgery. All complications have been classified as follows: short-term complications, long-term complications, exposure of synthetic implants, functional complications. Total of complications on 179 performed operations I have made 20 cases (11.8%).

Conclusion: Thus, the accumulated experience forces us to estimate critically approach to universal use of mesh-materials and more accurately to make selection of patients. Despite high efficiency, use of synthetic materials can be followed by heavy complications. Some of them can pose serious hazard to life and health of patients. In a ligature with what, according to us, the best prevention of complications is strict selection of patients for treatment, good knowledge of topographical anatomy of a small pelvis and crotch, exact respect for technology of installation of an implant, and also training of doctors in the certified training centers. According to us, the future of reconstructive surgery of pelvic organs prolapse at women, consists in decrease of cases of use of synthetic implants and transition to use native tissue with various options of use the autological fibroblasts.

Keywords: pelvic organ prolapse, synthetic implants

B4 FUNCTIONAL RECONSTRUCTION OF VAGINAL PROLAPSE WITHOUT MESH INTERPONATES

NICOLAS FISCHER¹, SIDI MUCTAR¹, ION-ANDREI MÜLLER-FÜNÖGEA², MARTIN FRIEDRICH¹¹Helios Kliniken Krefeld, Department of Urology²St. Antonius-hospital Eschweiler, Department of Gynecology**Purpose:** To renounce on the use of mesh interponates in the tranvaginal treatment of prolapse and functional disorders of the pelvic organs.

Material and methods: We describe a minimal- invasive and intuitive operation technique. The method implements all components of the posterior and middle compartment.

Results: Five patients with I° to III° prolapse have been treated successfully with this innovative method. Clinically identifiable cystoceles are co-treated with kolporrhaphia anterior. All patients were satisfied with the results. On the third postoperative day, all patients were discharged. Two of the patients complained postoperatively about buttock pain on both sides. One with one-sided pain. The remaining two patients were symptom free. Postoperative checks after three weeks showed eased buttock pain. In one patient a preoperative minimal fecal incontinence was reduced from 2nd degree to first degree. There was no postoperative dyspareunia reported.

Conclusion: The described surgical procedures are safe and show promising results. A good architectural reposition of the pelvic organs alone is not sufficient to restore a normal function of the pelvic organs and the pelvic floor. An in-depth knowledge of the entire anatomy and function of the pelvic organs is indispensable.

Keywords: Incontinence, mesh, transvaginal operation, autologue tissue, dyspareunia.

B5 LATERAL SUSPENSION AS AN EFFECTIVE TREATMENT FOR PELVIC ORGAN PROLAPSE

DMITRY GENNADIEVICH ARYUTIN¹, EUGENE FEDOROVICH VAGANOV², MILANA SULTANOVNA LOLOGAEVA¹, GULIRANO ALAVITDINOVNA KARIMOVA¹, IRAQLI ENVEREVICH TVARADZE², ANASTASIA MIKHAILOVNA ISAEVA²¹Peoples' Friendship University of Russia²The N.e.bauman's State Hospital №29, Moscow, Russian Federation**Objective:** To evaluate the surgical effectiveness of the procedure, the long-term results postop.

Materials and methods: treatment analysis was carried out for 74 patients with anterior and apical prolapse. The age of patients ranged from 44 to 68 years. Assessment of the severity of the pelvic floor defect was carried out according to the POP-Q classification. All patients underwent intervention using a T-shaped polypropylene mesh implant (Soft) with fixation of the prosthesis in the cervical stump region, uterus and vaginal dome prolapse. The mesh sleeves were passed through formed tunnels under the parietal peritoneum of the anterior abdominal wall to the skin, at a point 4 cm higher and 2 cm lateral to the anterior superior iliac spine. The duration of the surgery ranged from 60 to 120 minutes. Average blood loss 100 ml. A comprehensive assessment of the effectiveness was carried out using the PFDI-20 (Pelvic Floor Distress Inventor) as well as PFIQ-7 (Pelvic Floor Impact Questionnaire) questionnaires. 33 patients stage 0, 13 patients - stage 1. According to the questionnaires, 66 of 74 patients postop showed a significant improvement in the following indicators: foreign body sensation in the vagina, obstructive or urgent urination.

Conclusions: Analysis of the surgical treatment of genital prolapse using the method of lateral suspension showed decrease in the severity of pelvic organ prolapse, a decrease in the duration of surgical intervention as well as the frequency of complications associated with the surgical procedure.

Keywords: lateral suspension, pelvic organ prolapse, apical prolapse

B6 SITE-SPECIFIC AND TAPES POP RECONSTRUCTION BY VAGINAL ROUTE

BORIS A SLOBODYANYUK¹, YULIA E DOBROHKOTOVA¹, ALEXANDER I SLOBODYANYUK², VALENTINA I DIMITROVA³, NIKOLAY U IVANNIKOV³, SVETLANA V KAMOEVA⁴¹Pirogov Russian National Research Medical University (Rnmu)²Zhukowsky Clinical Hospital³Inozemtsev Hospital # 36, Moscow⁴Medsi Clinic On Belorusskaya

Background: Due to FDA restrictions regarding using mesh in vaginal surgery and medicolegal issues worldwide there are big intention to diminish use of synthetic material with good outcome and improvement of QoL. With development of Integral Theory by P.Petros we understand importance of precise anatomical restoration and augmentation all pelvic “ligaments” and fascia using polypropylene tapes. We developed “low cost” trocar guided variation of POP restoration.

Methods: Procedure begins with the incisions of anterior and posterior vaginal wall, mobilization of the rectovaginal and pubocervical fascia, identification SSL, USL, CL. We use two 7mm low elastic PP tapes. Posterior sling pass through SSL “inside-out” manner and place middle part in front of cervix. Anterior sling is passing through obturator foramen near attachment of ATLA to PS. Both slings are fixed to the cervix anteriorly. After that, we restore fasciae in site-specific manner and plicate both cardinals in front of the cervix and USL posteriorly with non-resorbable sutures. If indicated, lax perineal body, anal spinster or PUL also repaired. Thus we repair all the ligaments (USL, CL, AITP, PB and PUL) with the tapes and/or with native tissues.

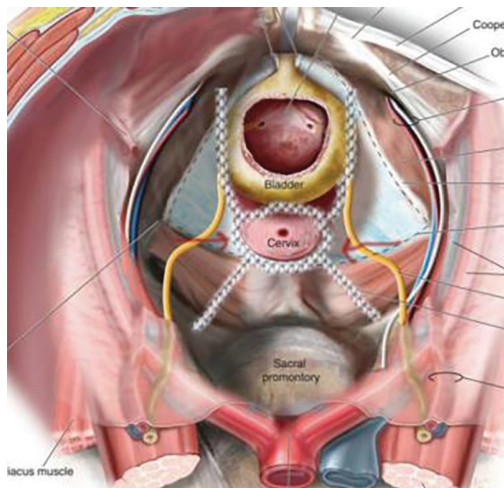
Results: Since 2016 we have done 134 procedures in 4 clinics. Indication: different types of symptomatic POP 2-4 stages (POPQ). Simultaneous operations were: trachelectomy in 7%, LS supracervical hysterectomy in 4%, TVT-O in 23% cases, PB repair (29%) include EAS repair (3%). To estimate outcome we used: QOL questionnaires (PFDI-20, PFIQ-7, FSFI) and factor analysis of the symptoms according diagnostic algorithm. Operation time was 90±25 min. Blood loss never exceed 150 ml. We have 1 complication during perineoplasty breakdown of the needle which required wide dissection of right ishiorectal space – without consequences. In all cases pain was mild (1-4 VAS) localized in perineal body or buttocks treated with NSAID not more 2-4 days. Mean follow up were 23±6 mounts. Erosion rate was zero. There were statistical long-term improvements of function-

al results of symptoms: PFDI-20 115,5/48,7 ($p < 0,01$), PFIQ-7 68,7/14,4 ($p < 0,01$). Sexually active patients (52%) report improvements according FSFI ($p < 0,01$). There was significant improvement of symptoms: bulge 96 to 4%, pelvic pain - 14 to 3%, dyspareunia 29 to 3%, obstructive urination 29 to 0%, frequency 47 to 10%, urgency - 11,7 to 1,5%, stress incontinence - 23 to 7% (in 15% cases of de novo SUI MUS was placed in 24 months), obstructive defecation 17 to 3%, AI 7 to 0%, nocturia 29% to 0%. We noted 5,8% asymptomatic cases of cystocele mostly paravaginal and 5% of apical prolapse 2-nd degree without reoperation.

Conclusions: Mid-term results make possible to consider this approach as effective minimally-invasive method of "functional surgery". However, long-term multicenter study needed.

Keywords: POP tapes ITS

Fig.1 - Position of slings. Red arrows show plication of cardinal ligaments



B7 A MODIFIED ROBOTIC-VR WITH A FOLDED SINGLE MESH SUSPENSION TO TREAT COMPLEX PELVIC ORGAN PROLAPSE

ALESSANDRO STURIALE¹, BERNARDINA FABIANI¹, DANILLO CAFARO², CLAUDIA MENCONI¹, FELIPE CELEDON PORZIO¹, GABRIELE NALDINI¹

¹Proctology and Pelvic Floor Clinical Centre - Aoup - Pisa

Purpose: To propose a modified robotic ventral rectopexy for complex pelvic organ prolapse treatment.

Material and Methods: From January to December 2018, all the patients with internal rectal prolapse and rectocele associated with middle-anterior-compartment organ prolapse were enrolled. The procedure is robot-assisted (Da-Vinci Xi) and based on the conventional ventral rectopexy using a 35 cm in-length titanized polypropylene mesh. The recto-vaginal dissection reaches the elevator plane and the mesh is sutured to the anterior rectal wall and then fixed to the sacrum. The mesh remnant is then folded and fixed to the posterior or anterior vaginal wall depending on the concomitant prolapse type. The combined suspension is preoperatively decided after accurate clinical and radiological evaluation.

Results: Sixteen patients underwent ventral rectopexy. Ten had a concomitant enterocele whereby a posterior vaginal wall suspension was associated. Six underwent to anterior vaginal wall suspension for a concomitant cystocele with vaginal vault prolapse. Mean operative time was 148min. No intraoperative complications were recorded. One hematoma of the recto-vaginal space conservatively treated.

Conclusion: This modified approach to the complex organ prolapse allows using always the same mesh associating ventral rectopexy with a tailored middle-anterior-compartment suspension using different tensile strength according to the preoperative anatomy and related symptoms.

Keywords: Pelvic organ prolapse, ventral rectopexy, robotic surgery,

B8 SURGICAL TREATMENT OF PELVIC ORGAN PROLAPSE IN ELDERLY WOMEN

ANCA MARIA MANTA¹, PETRE BRATILA¹

¹Euroclinic Hospital, Bucharest, Romania

Purpose: To study the role of obliterative procedures performed for severe pelvic organ prolapse (POP) in elderly patients.

Materials and methods: The retrospective study was performed during 2014 and 2019 on 237 patients with different stages of pelvic organ prolapse. In the analyzed group of patients, 88 patients (37,13%) had advanced POP (III-IV stages) and were in 7th and 8th decades.

Results: From 88 patients with advanced POP, 17 (19,31%) was recurrent pelvic organ prolapse. The average age of diagnosis was 74,77 years (70 and 96 years). We performed obliterative procedures in 55 (62,5% cases) and reconstructive procedures in 33 (37,5 %) cases. The decision to perform obliterative procedures was according to the informed consent of the patient and no desire of sexual function. Procedures for urinary stress incontinence were performed in 25 (28,40%) cases. The average time of the surgery was 34 minutes (30-42 minutes). The average hospital stay was 1,83 days. The recurrence of pelvic organ prolapse after colpocleisis were recorded in 2 (3,63%) cases.

Conclusions: Colpocleisis is a safe procedure used in management of pelvic organ prolapse in elderly women with no desire of sexual function.

Keywords: surgical procedures, pelvic organ prolapse, colpocleisis

B9 ORGANIC POP REPAIR BUTTERFLY3D® REINFORCEMENT IN RECTOCELE SURGERY

DANILO DODERO¹, SIMONE FERRERO², LAURA LOPES³, MICHELA ANGELUCCI¹

¹Gynecology Department, Clinica Paideia, Rome, Italy

²Gynecology Department University of Genoa, Genoa, Italy

³Physiatric Rehabilitation Center Reabilia, Genoa, Italy

Purpose: To evaluate efficacy in terms of vaginal capacity, coital function, and recurrence's prevention of a new biological graft of bovine pericardium (patented by us as "Butterfly 3D®" produced by ASSUTEUROPE), in the repair and reinforcement of fascial reconstructive surgery in case of severe rectocele and POP central and posterior compartment..

Materials and Methods: Thirty cases of patients suffering from stage III-IV uterine or apical prolapse, with severe and symptomatic rectocele, undergone surgical repair by means of a modified wright ileococcygeal muscle suspension combined with a biological Graft "Butterfly 3D®", attachment anteriorly to both the cardinal ligaments or uterosacral ligaments, caudally to ileococcygeal wright muscle, and frontally to perineal body fixation. The biological device was replaced inside the pelvis with the goal of reconstructing the tridimensional fascial disposition of the structures sustaining the correct axis of vagina: so called "Butterfly 3D®". Even to stabilize anorectal functionality. Follow-up was done at 12 months with POPIQ analysis. Teslacare rehabilitation was proposed.

Results: One total graft failure occurred early after surgery due to marked deficiency of anatomy. Two cystoceles were observed at 12 months in two patients treated for apical prolapse where anterior repair was not performed. Two other patients developed a de novo SUI at 12 months. No reported abnormalities of coital function or dyspareunia were ever found after surgery. In case of defecation syndrome or fecal disfunction & incontinence, patients are all improved.

Conclusions: It is possible that the utilization of a tension-free and tridimensional placement of Butterfly 3D® Biological Graft might favor a more physiological and safe reconstruction of the vaginal axis as compared with traditional sacrospinous suspension, improving defecation and fecal continence.

Keywords: Biologic Graft, Pop Vaginal Surgery, Prolapse, Biological Mesh, Bovine Pericardium.

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B10 CERVICAL ELONGATION IN POP MANAGEMENT. FALSE APICAL PROLAPSE PHENOMENON

OLEKSANDER PROTSEPKO¹, BURGHARD ABENDSTEIN²

¹Vinnitsa National Medical University, Vinnitsa, Ukraine,

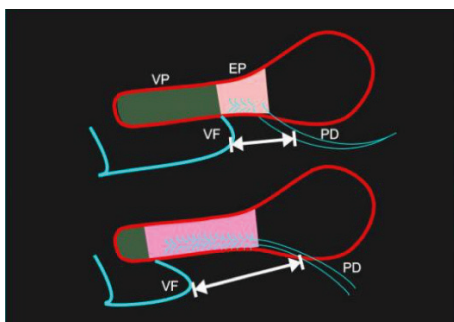
²Frauengesundheitscenter, Hall In Tirol, Austria

Cervical elongation is described as the protrusion of an enlarged cervix in antero-posterior dimension into the wall of the top of the vault. Those apical prolapse are defined by the protrusion of a cervix or vaginal cuff through the wall of the pelvis due the weakness of the Cardinal-US ligamental complex. Sometimes described in the literature as cervical elongation attention focused on vaginal portion of the cervix. This type of longitudinal cervix enlargement must be distinguished from the elongation of the extraperitoneal cervical portion, which can be diagnosed during vaginal hysterectomy. Apical (uterovaginal) prolapse has traditionally been classified anatomically depending on the level of descend of the uterus, cervix and upper vagina (posterior fornix). The true surgical apex of vagina, means the full thickness wall of proximal vagina from the vaginal fornix to the pouch of Douglas (PD). No any POP classification systems focused to the level of the other side of the reproductive tract bulge. In case of elongation of extraperitoneal portion, anatomy, from vaginal view, can be recognized as apical prolapse, but the level of the pouch of Douglas can be on the interspinal line. This mean "False apical prolapse". Preoperative cervical assessment can be helpful in POP surgical management. Avoidance of unnecessary hysterectomy or apical support procedures in case of cervical elongation can increase postoperative results among young patients.

Keywords: Cervix Uteri, Prolapse, Hysterectomy, Uterine cervical elongation

References: Risk factors for coexistence of cervical elongation in uterine prolapse. Hsiao SM, Chang TC, Chen CH, et al. Eur J Obstet Gynecol Reprod Biol. 2018 Oct;229:94-97 Entry into the anterior cul-de-sac during vaginal hysterectomy. Linder BJ, Gebhart JB. Int Urogynecol J. 2018 Aug;29(8):1223-1225. Putting POP-Q to the test: does C - D = cervical length? Williams KS, Rosen L, Pilkinton ML, et al. Int Urogynecol J. 2018 Jun;29(6):881-885 Defining Cervical Elongation: A Prospective Observational Study. Nosti PA, Gutman RE, Iglesias CB, et al. J Obstet Gynaecol Can. 2017 Apr;39(4):223-228. Systematic classification of uterine cervical elongation in patients with pelvic organ prolapse. Mothes AR, Mothes H, Fröber R, et al. Eur J Obstet Gynecol Reprod Biol. 2016 May;200:40-4.

Fig.1 - False apical prolapse with cervical elongation. On top - elongation of vaginal portion of the cervix. On bottom - elongated extraperitoneal part of the cervix. Arrow - true apex, VP - vaginal portion, EP - extraperitoneal portion, VF - vaginal fornix, PD - pouch of Douglas.



B11 SACROCOLPOPEXY : ADVANTAGES AND DISADVANTAGES BETWEEN ABDOMINAL AND LAPAROSCOPIC APPROACH - META-ANALYSIS

MIHAI CRISTIAN DUMITRASCU¹, RAZVAN FODOROIU²,
MONICA MIHAELA CIRSTOIU¹

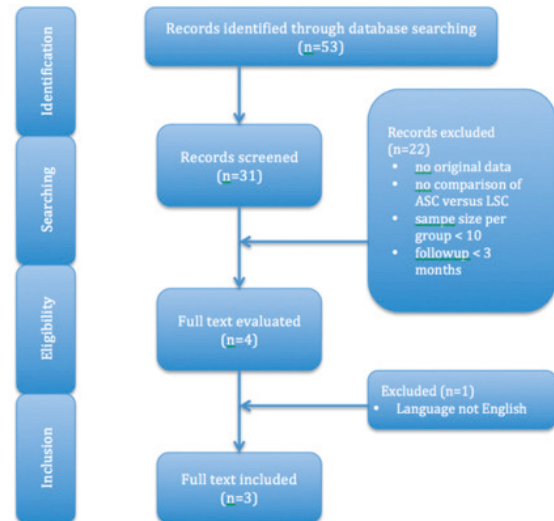
¹University of Medicine And Pharmacy Carol Davila, Bucharest 2University
Emergency Hospital Bucharest

Pelvic organ prolapse is a medical condition in which one or more pelvic organs descend from their anatomical position. This disorder has become

a common problem among women and because of the increasing incidence, several surgical techniques have been developed. Prolapse surgery must take into consideration the cost-benefit, complication rate, morbidity and succes of the procedure both short and long-term. The current 'gold standard' surgical repair for pelvic organ prolapse is abdominal sacrocolpopexy because of its high success rate and excellent anatomic outcome. Laparoscopic sacrocolpopexy has become an alternative for the abdominal approach. The aim of this systematic review is to compare the advantages and disadvantages between the laparoscopic sacrocolpopexy with the abdominal approach.

Keywords: sacrocolpopexy, pelvic organ prolapse, laparoscopy, abdominal, systematic review, meta-analysis

Fig.1 - Flowchart of study selection process



Tab.1 - LSC and ASC surgical outcomes comparison

Reference	Duration of surgery (min)		Intraoperative blood loss (mL)		Hospital stay (days)		Postoperative ileus / small bowel obstruction (reported cases)	
	ASC	LSC	ASC	LSC	ASC	LSC	ASC	LSC
Hsiao	185	220	195	83	3,3	1,2	3	0
Nasti	222	272	150	100	3	1	29	5
Paraisio	218	269	234	172	4	1,8	4	1
Mean value	208	253	193	118	3,4	1,33	12	2

B12 THREE LEVEL HYBRID REPAIR OF ADVANCED POP VIA VAGINAL APPROACH

NIKITA KUBIN¹, OLGA STAROSELTSEVA¹, DMITRIY SHKARUPA¹, ANASTASIA ZAYTCEVA¹, EKATERINA SHAPOVALOVA¹

¹Saint-petersburg State University Clinic of Advanced Medical Technologies
N.a. N. Pirogov

Purpose: The purpose of the study was to evaluate the efficiency and safety of three level hybrid repair of advanced pelvic organ prolapse (POP).

Materials and methods: The study included 114 patients who received simultaneous transvaginal reconstruction of all levels of the pelvic floor support (according to Delancey), consisting of: unilateral sacrospinous fixation with the use of apical sling (level 1), anterior subfascial colporrhaphy (level 2), and posterior colpoperineorrhaphy (level 3). The 12-month follow-up period included the evaluation of pelvic organ prolapse by standardized POP-Q system and the filling in the validated questionnaires (PFDI-20, ISIQ-SF, PISQ-12).

Results: The mean operative time was 52,1±4,8 minutes. The intraoperative bladder injuries or clinically important bleedings were not revealed. Postoperatively the significant clinical improvement of POP-Q measurements with the total vaginal length (TVL) was noted approximately in all patients. During the 12-month follow-up period the anatomical recurrence was detected at the apical level (C>-1) in 1 (0,8%) patient and in the anterior compartment (Ba>-1) in 5 (4,3%) patients. No case of vaginal mucosa

erosion was detected as well as the pain syndrome. 6 (5.2%) women developed de novo SUI after surgery. The majority of patients after the treatment given noted a significant improvement in the quality of life. Only one patient complained of de novo dyspareunia. Satisfaction with the treatment results according to the questionnaires was 94.7%.

Conclusions: The reconstruction of all three levels of pelvic floor support allows to spread evenly the bear load between the compartments and thus, to reduce the amount of used synthetic material maintaining high efficiency and safety of the transvaginal surgical reconstruction of POP.

Keywords: pelvic organ prolapse, apical sling, sacro-spinous fixation, three level repair

B13 COMPUTER MODELING AND SIMULATION AS A SOURCE OF PRIOR INFORMATION IN CLINICAL TRIALS OF MESHES FOR PELVIC DYSFUNCTION

ELISABETE SILVA¹, JOÃO RIBEIRO¹, SOFIA BRANDÃO², MARCO PARENTE¹, TERESA MASCARENHAS³, RENATO NATAL JORGE¹, ANTÓNIO AUGUSTO FERNANDES¹

¹Laeta, Inegi, Faculty of Engineering, University of Porto, ²Dep. of Radiology, Chsj-epi / Faculty of Medicine, University of Porto, ³Dep. of Obstetrics and Gynecology, Chsj-epi / Faculty of Medicine, University of Porto.

Introduction Until recently surgeons relied on the use of meshes in reconstructive surgeries, but on April 16, 2019, the FDA has forbidden its use. FDA requires that safety and efficacy meshes have to be demonstrated in the context of patient population in a clinical trial. Computer models and simulation can potentially be used in clinical trials as an alternative source of prior information to simulate clinical outcomes in a virtual patient population. A virtual patient model that can be used within mesh premarket approval has been developed. It is expected that the research being reported can contribute to accelerate the adoption of computer simulations

Methods In this work was used a pelvic cavity computational model, including the pubic bone, the pelvic organs, the PFM, and other supporting structures was used. The in vivo biomechanical properties applied to PFM were estimated by Silva et al. (2017) for asymptomatic, incontinent women through an inverse finite element analysis (FEA) (Figure 1) [1] The computational model of the synthetic implant was developed based on existing specifications, as a sling with 150 mm × 10 mm. The sling was placed transvaginally from the midurethra to the symphysis pubis. The mechanical behavior of the mesh was modeled, assuming an hyperelastic behavior, based on experimental curves, corresponding to two distinct synthetic meshes with different stiffness (high stiffness and low stiffness), that were obtained through uniaxial tensile tests performed in our laboratory (Figure 1). Computational simulation of Valsalva maneuver was performed for progressive increase in intra-abdominal pressure up to 4 kPa [2]

Results The maximum displacement of the bladder and urethra and bladder neck was simulated and the computational analysis shows that the increase in IAP during the Valsalva maneuver affects the mobility of the bladder and urethra (see Table 1)

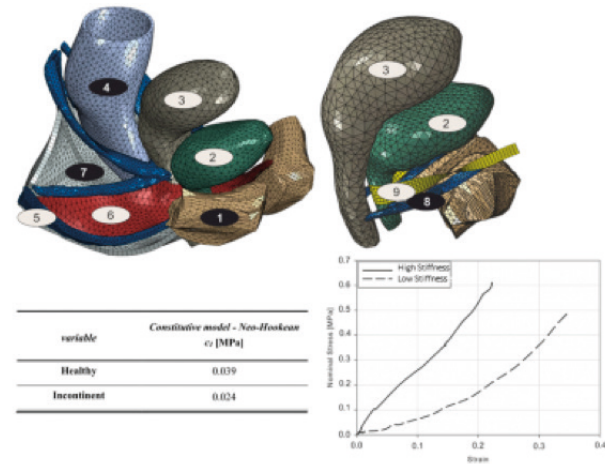
Discussion The computational simulations showed that there is a reduction of the displacement values in the bladder and in the bladder neck when was applied the meshes. However, there is a greater reduction in the displacement of the bladder and urethra, when are applied of the material properties of incontinent women, being this variation of approximately 8.27% with the high stiffness mesh and 6.96% with the low stiffness mesh. The results show that the computational model was able to discriminate the effect of using different types of support meshes to evaluate urethral mobility. The current abstract reports only results for urinary incontinence but work in progress will extend the virtual model to study the effect of meshes on prolapse correction

Clinical implications The computational models coupled with inverse FEA may help to estimate non-invasively the in vivobiomechanical properties of the structures of the PFM, including the pelvic ligaments. The knowledge of the in vivo biomechanical properties of the pelvic tissues, will help the development patient-specific meshes

Keywords: Pelvic Floor Cavity Urinary Incontinence Computational Models In vivo biomechanical properties Sling

References: [1] Silva, M. E. T., Brandao, S., Parente, M. P., Mascarenhas, T., and Natal Jorge, R. M., 2017, "Biomechanical properties of the pelvic floor muscles of continent and incontinent women using an inverse finite element analysis," *Comput. Methods Biomech. Biomed. Engin.*, 20(8), pp. 842-852. [2] Silva, M. E. T., Parente, M. P. L., Brandão, S., Mascarenhas, T., and Natal Jorge, R. M., 2018, "Characterization of the passive and active material parameters of the pubovisceralis muscle using an inverse numerical method," *J. Biomech.*, 71, pp. 100-110.

Fig.1 - Pelvic computational model. (1) pubic bone, (2) bladder, (3) uterus, (4) rectum, (5) arcus tendineous fasciae pelvis, (6) pelvic fascia, (7) PFM, (8) pubourethral ligaments (vaginal and urethral portions), and (9) midurethral sling. Table with material properties of the PFM for healthy and incontinent. This graphic shows the experimental curves for high stiffness and low stiffness meshes.



Tab.1 - Displacement magnitude of the bladder and urethra, the maximum displacement magnitude of the bladder neck for Valsalva maneuver (4.0 kPa).

Variable	Max. bladder and urethra displacement magnitude (mm)		Max. bladder neck displacement magnitude (mm)	
	Rest	VM	Rest	VM
Healthy	0.00	19.61	0.00	6.95
IMP, no sling	PFM-UI	19.82	7.04	
IMP, Meshes	PFM-UI	18.18	6.39	
IMP, Meshes	PFM-UI	18.44	6.81	

Note: HS - high stiffness; IMP - impairment; PFM-UI - pelvic floor muscles with incontinence; LS - low stiffness; VM - Valsalva maneuver.

Acknowledgments : The authors gratefully acknowledge the funding by Ministério da Ciência Tecnologia, e Ensino Superior, FCT, Portugal, under grants POCI-01-0145-FEDER-029232

B14 PROLAPSE-INDUCED NOCTURIA: ACTUAL SCIENTIFIC EVIDENCE

BERNHARD LIEDL¹, G. BRÜWER¹, M. HIMMLER¹, M. WITCZAK¹, A. GREIS¹

¹Urologische Klinik Planegg, Munich, Germany

Introduction: Nocturia can be caused by nocturnal polyuria of different reasons, but it occurs also without polyuria. P. Petros (1997) mentioned first the association between pelvic organ prolapse (POP) and nocturia, which he could cured in 80 % by prolapse repair. In many actual publication this association is not mentioned. Therefore we analyzed the data of the Propel-study (ClinicalTrials.gov Identifier:NCT00638235) to find evidence for this association.

Material and Methods: In this prospective multicenter study 277 women were asked for bother from nocturia using the Pelvic floor disorder inventory questionnaires (PFDI) pre-, 6, 12 and 24 months postoperatively. Pelvic Organ Prolapse Quantification system (POP-Q) stages were measured at the same times. We compared women with successful reconstruction (POP-Q stage 0 or 1 at any follow up period at all compartments, anatomical "responders") to all other women ("non-responders") regarding the bother of nocturia.

Results: 141 patients were identified as responders, 87 as non-responders. The outcome R2 (bother moderately or quite a bit) was evaluated separately because of its clinical relevance. Regarding the bother, we found that occur

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Results: 141 patients were identified as responders, 87 as non-responders. The outcome R2 (bother moderately or quite a bit) was evaluated separately because of its clinical relevance. Regarding the bother, we found that occurrence rates of R2 was significantly reduced after surgery in all subgroups. In the responders the cure rates were 83 % after 6 months and 69 % after 24 months, in the nonresponders 57 % and 39 % respectively.

Conclusion: These data strongly support the concept of prolapse-induced nocturia which can be cured by adequate pelvic floor surgery.

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Keywords: Conclusion: These data strongly support the concept of prolapse-induced nocturia which can be cured by adequate pelvic floor surgery.

B15 VAGINAL AND LAPAROSCOPIC APPROACH FOR MASSIVE GENITAL PROLAPSE

MICHELE PARODI¹, MARIO MERONI¹
¹Ospedale Niguarda Cà Granda, Milan, Italy

We report a case with pictures (pre, intra and postoperative) of a woman 50 years-old with massive genital prolapse without urinary and faecal symptoms and signs. We decided to perform a vaginal hysterectomy with anterior wall reconstruction followed by laparoscopic colposuspension to utero-sacral ligaments and then a transvaginal reconstruction of posterior wall and perineum. In such cases vaginal and laparoscopic approach can be a valid option in non-prosthetic surgery.

Keywords: pelvic organ prolapse, vaginal hysterectomy, colpopexy, shull colposuspension, laparoscopy

References: Int Urogynecol J. 2012 Feb;23(2):223-7. doi: 10.1007/s00192-011-1556-3. Epub 2011 Sep 3. Permanent suture used in utero-sacral ligament suspension offers better anatomical support than delayed absorbable suture. Chung CP1, Miskimins R, Kuehl TJ, Yandell PM, Shull BL. Int Urogynecol J. 2017 Jan;28(1):65-71. doi: 10.1007/s00192-016-3016-6. Epub 2016 Apr 5. Modified McCall culdoplasty versus Shull suspension in pelvic prolapse primary repair: a retrospective study. Spelzini, Frigerio, Manodoro, Interdonato ML2 Cesana MC, Verri D, Fumagalli C, Sicuri M, Nicoli E, Polizzi S, Milani R. Eur J Obstet Gynecol Reprod Biol. 2019 Jul 21;240:278-281. doi: 10.1016/j.ejogrb.2019.07.007. [Epub ahead of print] Transvaginal high uterosacral ligament suspension: An alternative to McCall culdoplasty in the treatment of pelvic organ prolapse. Novara L, Sgro LG, Pecchio S, Ottino L, Tomatis V, Biglia N. Am J Obstet Gynecol. 2000 Dec;183(6):1365-73; discussion 1373-4. A transvaginal approach to repair of apical and other associated sites of pelvic organ prolapse with uterosacral ligaments. Shull BL, Bachofen C, Coates KW, Kuehl TJ.

Fig.1 - Prolapse in operating theatre
Fig.2 - laparoscopic colposuspension
Fig.3 - one month follow-up



B16 EFFECTS OF APICAL FIXATION ON URINARY INCONTINENCE AND POP – A COMPARISON OF ABDOMINAL CESA AND LAPAROSCOPIC (laCESA)

SEBASTIAN LUDWIG¹, PETER MALLMANN¹, WOLFRAM JÄGER¹

¹University of Cologne, Germany

Introduction and aim of the study: With increasing age, more and more women are affected by uterine descent and urinary incontinence. In addition to the apical reconstruction of the vagina, cervicosacropexy (CESA) has also been shown to be a successful treatment option for urgency urinary incontinence - in combination with a suburethral tape, continence can be restored in 76% of patients with urgency urinary incontinence.

So far, the CESA surgical technique was performed with a belly cut (open abdominal). This technique involves a long surgery time and a hospital stay of about 6 days. After a laparotomy, the patients are only partially mobile for several weeks.

For these reasons, a laparoscopic procedure (laCESA) has been developed. In this study we present the implementation in the laparoscopic technique (laCESA) compared the clinical outcome to the open abdominal CESA.

Materials and methods: Patients with uterine prolapse (POP-Q stage I - IV) and urinary incontinence (mixed or urgency urinary incontinence) were operated on at a tertiary center between 2016 and 2018. Urinary incontinence symptoms were assessed using validated questionnaires before and 4 months after surgery.

In the cervicosacropexy (CESA) technique, the damaged utero-sacral ligaments (USL) were “standardized” replaced on both sides on the small pelvis by polyvinylidene fluoride (PVDF) structures. These PVDF structures were 0.4 cm wide and 8.8 cm long (in each patient!) and were implanted between the cervix and the sacral vertebra (at the level of S1) in the original course of both USLs. In our technique, a “curved hook” (originally used for TVT placement) was used in the laparoscopic procedure (laCESA).

Results: So far, 90 patients had uterine descent and urinary incontinence, 41 were operated with the laparotomy technique (CESA) and 49 with the laparoscopic technique (laCESA). One third of all patients had a POP-Q stage II - IV. Continence was restored in 48% of patients by CESA, and in 56% of patients by laCESA. In 96% of patients uterine descent was corrected. Intraoperatively there were no substantial bleedings or complications. However, the two surgical techniques differed significantly in the mean hospital stay (3 after laCESA vs. 6 days after CESA) and the mean surgery time (85 min after laCESA and 122 min after CESA).

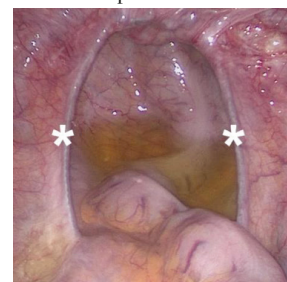
Interpretation of results: The CESA technique could also be implemented laparoscopically and achieved the same clinical results (restoration of apical prolapse and urinary continence). In addition, the duration of surgery in laCESA could be reduced (learning curve) and the immediate postoperative mobilization shortened (from 5 days to 2 days).

Conclusions: The advantage of the bilateral USL replacement lies in the comprehensible, standardized - and thus reproducible - surgical technique and the minimum amount of material (no polypropylene). Besides, the laparoscopic CESA (laCESA) offers a shorter surgical time, a faster mobilization of patients, and a shorter hospital stay.

Keywords: Cervicosacropexy, CESA, urgency urinary incontinence, mixed urinary incontinence, uterosacral ligaments

References: 1. Rajshekhar S, Mukhopadhyay S, Morris E. Early safety and efficacy outcomes of a novel technique of sacrocolpopexy for the treatment of apical prolapse. Int J Gynaecol Obstet 2016;135:182–186. 2. Rexhepi S et al. Laparoscopic Bilateral Cervicosacropexy and Vaginosacropexy: New Surgical Treatment Option in Women with Pelvic Organ Prolapse and Urinary Incontinence J Endourol. 2018 Nov 1; 32(11): 1058–1064. 3. Ludwig S et al. Laparoscopic bilateral cervicosacropexy: introduction to a new tunneling technique. Int Urogynecol J. 2019 Jul;30(7):1215-1217. doi: 10.1007/s00192-019-03911-2. Epub 2019 Mar 8.

Fig.1 - laCESA



Acknowledgments: With the help of Mrs. Elke Neumann this study would not have been possible.

B17 SACROPEXY FOR PELVIC ORGAN PROLAPSE USING MESH FIXATION DEVICE: SAFETY AND EFFICACY OUTCOMES

EMILIO SACCO¹, RICCARDO BIENTINESI¹, CARLO GANDI¹,
LUIGI VACCARELLA¹, PIERFRANCESCO BASSI¹
¹Urology Dept., Università Cattolica Del Sacro Cuore, Fondazione Policlinico
Universitario A. Gemelli Irccs

Purpose: Abdominal mesh sacropexy (SP) is considered the gold standard treatment for pelvic organ prolapse (POP), particularly when vaginal vault prolapse is present [1]. To fasten and ease SP procedures, particularly when minimally invasive approaches are used, mesh fixation devices have been introduced, but very few data are available on the use of these devices.

Materials And Methods: A retrospective evaluation of patients with pelvic organ prolapse (POP) undergoing open (OSP) or robot-assisted (RASP) SP, from Sept. 2012 to Oct. 2018, was undertaken. Inclusion criteria were 1) primary or recurrent symptomatic POP (ICS POP-Q stage ≥ 2), including vaginal vault or uterus prolapse, with or w/o prolapse in other compartments, and 2) use of sacral promontory mesh fixation device. Patients with less than 12-mo follow-up were excluded. A macroporous monofilament tetanized ultra-light polypropylene mesh was used, Y-shaped for colpo-sacropexy (TiLOOP® EndoPLUS) and T-shaped for hysterocastropexy (TiLOOP® Mesh; pfmmmedical, Köln, Germany). The proximal part of meshes was anchored to the promontory using four titanium spiral tacks, 5 mm apart, delivered with ProTackTM 5 mm (Covidien, New Haven, CT), a single-patient-use fixation device preloaded with 30 tacks. After ensuring optimal contact between the device tip and the underlying mesh, the device was activated by compressing the hand piece trigger to drive a tack through the mesh into the anterior longitudinal ligament.

Results: Thirty-two patients (median age 66 years) were evaluated. Four (12.5%), 21(65.6%) and 7(21.9%) patients had POP-Q stage 2, 3 and 4, respectively. Median follow-up was 45.7(37) months. Fifteen patients (46.9%) underwent a colpo-sacropexy (3 RASP and 12 OSP) and 17 patients (53.1%) a hysterocastropexy (8 RASP and 9 OSP). Mean total skin-to-skin operative time was 88(8) minutes for OSP and 120(32) minutes for RASP. In one case the device was blocked and had to be replaced. The primary outcome (POP-Q point C < -5) was achieved in 100% of cases. The secondary composite outcome (POP-Q Stage ≤ 1 and no vaginal bulge symptoms or retreatment) was achieved by 29 patients (90.6%): three patients (9.4%) had a recurrent POP (POP-Q Stage ≥ 2), but only one was symptomatic (3.1%) (de novo POP in untreated posterior compartment). At PGI-I, 93.8% subjective success (PGI-I ≤ 2) rate was achieved. ICIQ-SF was unchanged after surgery. No intraoperative complications were observed. Mean estimated blood loss was 75(35) ml. The median duration of hospitalization was 4(1.25) days. The rate of early postoperative complication was low (9.4%) and no grade 2-5 complications were observed. There were no cases of mesh infection and erosion.

Conclusions: The results of this study provide evidence regarding the mid-term safety and efficacy of using ProTackTM device instead of suture for a reliable promontory mesh fixation to restore the apical support during colpo/hysterocastropexy in patients with POP. No patient relapsed at the apical compartment supporting the reliability of the promontory fixation. Further studies are warranted to confirm the efficacy of this fixation method in the long-term.

Keywords: pelvic organ prolapse, mesh fixation, colpo-sacropexy, hysterocastropexy

References: 1. Maher C, Feiner B, Baessler K, Schmid C. Cochrane Database Syst Rev 2013;4:1-161.

B18 UTEROSACRAL LIGAMENT AUGMENTATION (USLA) WITH ANTERIOR TRANSOBTURATOR TAPES (ATOTS)

MARIJAN LUŽNIK¹, JAN LUŽNIK²
¹General Hospital Slovenj Gradec, Department of Gynecology and Obstetrics
²Faculty of Medicine, University of Maribor

Purpose: To evaluate efficacy and safety of apical and anterior vaginal prolapse repair using self-tailored tape implants with vaginal surgical approach.

Materials and methods: Between January 2017 and May 2019, 41 corrections of apical and anterior vaginal prolapse stage II-IV by ICS system (median age=60 years [42-79 years]) were performed with USLA and ATOTs by the same experienced surgeon. Polypropylene non-absorbable

mesh (60g/m²) 10 cm x 15 cm was used to individually design tape implants. Two pairs of tapes were inserted transobturatorily (under urethra and bladder neck) through 1 dermal incision on each side. Two apical tapes for USLA had been individually moved laterally into the vesicovaginal space before being inserted completely tension free in the direction of both uterosacral ligaments (out of the penetration line during sexual intercourse). USLA with ATOTs was used with or without vaginal hysterectomy (30 and 7 cases, respectively). In 4 cases ATOTs were used for correction of vaginal cuff prolapse. The postoperative ICS stage was assessed on day 5, 3 months and 12 months after surgery. Urine, fecal continence, and sexual function were evaluated using a questionnaire 12 months postoperatively.

Results: On postoperative day 5 and 3 months after surgery all patients had an ICS stage zero. 28 out of 41 patients (68%) completed 1 year follow up and remained ICS stage zero, without any pelvic pain. During the first year of follow up no serious complications were observed.

Conclusion: Apical and anterior vaginal prolapse repair with USLA and self-tailored ATOTs is safe and offers excellent short-term anatomical/functional results.

Keywords: Uterosacral ligament; Pelvic Organe Prolapse; Self-tailored tape; Transvaginal tape; Surgical Procedures; Operative

Fig.1 - Self-tailored Transobturator Vaginal Tapes



B19 MESH OR NOT FOR PROLAPSE REPAIR, VAGINAL OR ABDOMINAL - PERSONAL VIEW

CHRISTIAN FUENFGELD¹
¹Clinic For Gynecology, Tettmang, Germany

The aims of POP-surgery are an accurate anatomical reconstruction, optimal functional outcome, a durable result and without complications. Surgical methods vary greatly, depending on surgical expertise and patient demands, e.g. removal of the uterus or not, the use of alloplastic mesh/tape or native tissue repair. Moreover, three different surgical approaches are available: vaginal, abdominal or laparoscopic. Despite vast applications in the field of POP-surgery and numerous published studies, no single method has been validated as the best therapy. The FDA warnings of 2008 and 2011 on alloplastic meshes were based on complications that resulted from old meshes that have since been taken off the market. Recently, the FDA banished all meshes from the American market. At that time, two alloplastic meshes were available. This decision was not based on complications that had arisen due to these meshes, but was instead based on the fact that these two meshes lacked three-year results to show that their benefits outweigh their risks. This further inhibits international mesh-producing companies from trying to break into the American market. The banishment of meshes is not the solution. International studies have shown that the benefits of alloplastic implants in POP surgery outweigh the risks. Indeed, in case of recurrent prolapse or extreme POP, native tissue repair is incapable of resolving the problem and meeting patients' demand for stable surgical results. There is no denying that alloplastic implants are associated with certain risks. The advantages of these implants in recurrent cases of POP or advanced stages of primary POP should not, however, be undermined. Given that there currently is no evidence regarding which POP surgery benefits which patient, we believe that only individual patient-based surgical decisions will result in satisfied patients with an improved quality of life.

The choice of a surgery is dependent on various factors, namely POP stage, the compartments affected, the age of the patients, previous surgeries, co-morbidities, required stability, sexual activity, patients' wishes and the surgeon's skills. This presentation demonstrates the decision-making process in choosing the optimal procedure to treat POP in accordance with the SCENIHR statement, the EUA and EUGA recommendations and the German, Swiss and Austrian guidelines. Longtime personal experience and consideration of evidence are the basis for a successful treatment of POP. In Europe we have up to now all possibilities.

B20

TITANIUM «SILK» IN ANTERIOR AND APICAL POP TREATMENT

SVETLANA KAMOEVA¹, BORIS SLOBODYANYK, VERA PETROVA¹, EKATERINA PANOVA¹, YULIA DOBKROKHOVA²¹ Moscow clinic "Medsi" on Belorusskaya, Moscow, Russia. ² Pirogov Russian National Research Medical University RNIMU, Moscow, Russia.

Background: Today the main approach to POP treatment is based on wide use of mesh implants with good anatomical result. Nevertheless, there are mesh-associated complications. Therefore search of new materials for correction POP is in a high demand. **Purpose:** to estimate safety and efficiency of titanic "silk" implant in POP treatment. **Materials and methods.** This study were included 103 patients with anterior and apical POP between July 2017 and September 2018. All women were operated vaginally with uterus preservation. Vaginal sacrocolpopexy fixation with anterior fascia repair were performed using "Titanium Silk" - an implant by the sizes of 11.0x6.0 cm, was made of titani GRADE1 thread, with a diameter of 0.06 mm, area density of 24 g/m². The implant was fixed by Prolen 2/0. It should be noted particular advantages of an implant: easily scissored without loss of quality of structure, modelled and reverts to the original state, without changing the characteristics. **Results:** Intraoperative complications like bladder wound was in 2 (1.9%) patients. Anatomical results were estimated with vaginal examination and US of pelvic floor after 6, 12 months after operation. Postoperative complications: POP recurrences - 6 (5.8%), dyspareuniya - 1 (1.0%). Mesh erosion and vaginal shortening were not presented in our research. **Conclusions.** The implant of titanic "silk" is an ideal material in POP correction because of the properties: creates around itself full-fledged connecting tissue, it does not break biomechanics and does not create the biological conflict "implant fabric".

Keywords: mesh, «titanium silk», POP

Acknowledgments: the use of "titanium silk" implant proved to be safe and effective in treatment of apical genital prolapse. "Titanium silk" mesh usage results in formation of intrinsic connective tissue.

B21

AIMING FOR SAFE, MINIMALLY INVASIVE AND SUCCESSFUL TFS SURGERY

HIROMI INOUE, SHONAN KAMAKURA

General Hospital OB&GYN Shonan Kamakura, Japan

ino-hiromi@jcom.home.ne.jp

Purpose Proposal of a safer technique devised by looking back at the complications of TFS surgery

Materials and methods 751 TFS surgeries based on integral theory were performed over 12 years. Among them, 103 cases of mesh erosion were concentrated at the beginning (4.9% of all 2070 meshes). Many of them improved with two-layer sutures (2016-1900%). Three cases of ileus-like symptoms due to intra-abdominal invasion (?) of USL sling (1 case was suspected 0.3%, USL sling 667 cases) were improved by finger assisted procedure. Later, however, a patient was found whose intra-abdominal mesh was the cause of abdominal pain. In the case, USL sling was performed after suturing because the peritoneum was released during USL sling procedure. Since then, we decided not to do USL sling when the peritoneum perforated during the procedure. Bladder damage was observed in 3 cases (0.4%, among U sling 651 cases), but no urinary bladder perforation until now by urinating before U sling and marking the direction of sling insertion on the skin. Rectal perforation occurred in one case with USL sling, which was found at outpatient visit after surgery and could be managed by excision by pulling the mesh from the rectal wall. Seven cases of perineal body sling had to be removed due to consolidation or infection after several months. None of the patients had sequelae.

Results 751 cases of mesh erosion and infection, ileus, bladder perforation, and rectal perforation complications were observed but improved with no sequelae.

Conclusion We want to take complications seriously, consider countermeasures, prevent recurrence, and aim for TFS surgery with good treatment results to continue to be a safe and minimally invasive surgery for patients.

C URINARY INCONTINENCE

C1

EVIDENCE FOR A COMMON PATHOPHYSIOLOGY OF STRESS AND URGE INCONTINENCE IN WOMEN

WOLFRAM JAEGER¹, MAYER L¹, LUDWIG S¹, PODLINSKI K¹, MALLMANN P¹¹Urogynecology Unit, Dept Ob/gyn, University of Köln (Cologne)

Purpose: We analyzed when patients with urgency urinary incontinence (UUI) actually lose urine.

Material and Methods: Patients with urgency urinary incontinence (UUI) were asked when and how they lose urine after feeling of urgency.

When still sitting on the chair (symptom 0),

When rising up from the chair (symptom 1),

When walking to the toilet (symptom 2)

Results: 206 patients with UUI were evaluated. All patients reported that they lose urine immediately after feeling of urge. 179 patients (87%) reported urine loss when rising from the chair and 27 patients (13%) on their way to the toilet. None of these patients reported loss of urine when still sitting on the chair.

Conclusions: The urge to void is induced by stretching receptors at the bladder base around the urethra-vesical junction (UVJ). When the bladder fills these receptors get stimulated and induce the feeling of urgency to void. Up to this point of time patients do not lose urine.

However, when they bend forward to get up from the chair the vector of the full bladder wanders to the UVJ. In that moment, when the vector of the full bladder reaches the UVJ the pressure opens the bladder outlet.

So, it is justified to question if incontinence in that moment is a neurological disorder or a consequence of an anatomical instability of the UVJ? In other words, UUI could be explained as another form of stress urinary incontinence. So urinary incontinence in women is a pathophysiological continuum from urine loss after coughing or sneezing to immediate urine loss when rising from a chair.

Keywords: Evidence for a common pathophysiology of stress and urge incontinence in women

C2

SURGICAL TREATMENT OF OAB ASSOCIATED WITH LOW STAGE POP: INTEGRAL THEORY IN ACTION

ANASTASIA ZAYTSEVA¹¹Clinic of Advanced Medical Technologies N.a. Nikolay I. Pirogov Saint-Petersburg State University

Introduction. The overactive bladder (OAB) symptoms commonly occur in patients with pelvic organ prolapse (POP) stage I-II, when there are no obvious indications for surgical reconstruction. But the quality of life in this group of patients is decreased very significantly. There is no "gold standard" of the treatment for this disease at the present moment. This fact requires a search of new treatment options.

Methods. The study involved 49 premenopausal (25-55 years) and 39 postmenopausal (56-82 years) women with POP stage I-II and OAB symptoms. Inclusion criteria: diminution of urge symptoms following insertion of a gauze tampon in the posterior fornix of vagina ("simulated operation"). Exclusion criteria: stress urinary incontinence, prolapse grades 3-4. Postoperative assessment was performed at 3, 6, 12 and 18 months after the surgery and included: evaluation by stage of prolapse, (UDI-6, PFIQ-7, OAB-q, ICIQ-SF), questionnaires, voiding diary.

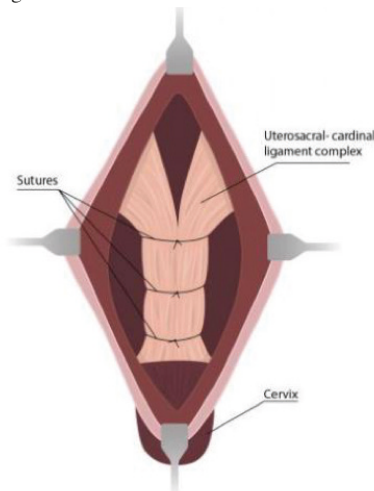
Results. At 3 months, cure rates for frequency, urgency, nocturia and prolapse were reasonably comparable for both groups. However, at every subsequent 6month review, there was a major increased failure in the postmenopausal group, parallel for all parameters, starkly contrasting with the other group. At 18 months % cure rates for premenopausal (postmenopausal in brackets) were 79.6 (15.4) for POP, 67.3 (20.5) for urgency, 87.7 (20.5) for nocturia and 59.2 (15.4) for frequency.

Conclusion. We hypothesize the stepwise parallel recurrence of POP and symptoms was a consequence of ligament weakness, itself due to collagen leaching out of the tissues because of menopausally related low estrogen level. The plication of uterosacral-cardinal ligament complex can be recommended as an alternative treatment option in that difficult group of pre-

menopausal women who have major OAB symptoms but only minimal prolapse.

Keywords: Overactive bladder, pelvic organ prolapse, surgical reconstruction of the pelvic floor, ligamentoplasty, uterosacral-cardinal ligament complex, Integral Theory

Fig.1 - Step of the surgery – approximation of right and left ligamentous complexes using Ftorex 1 suture.



Tab.1 - Comparative cure rate (%) of POP and overactive bladder symptoms in different points of follow-up.

POP/OAB symptoms	Premenopausal group (n=49)	Post-menopausal group (n=39)
	3 months	3 months
Frequency	71.5	64.1
Urgency	85.7	82
Nocturia	96	64.1
POP	98	89.7
	6 months	6 months
Frequency	77.5	48.7
Urgency	85.7	64.1
Nocturia	98	59
POP	85.7	48.7
	12 months	12 months
Frequency	63.3	38.5
Urgency	81.6	33.3
Nocturia	71.5	25.6
POP	85.7	20.5
	18 months	18 months
Frequency	59.2	15.4
Urgency	67.3	17.9
Nocturia	87.7	20.5
POP	79.6	15.4

Acknowledgments: This oral presentation is planning in Session 4 15.40-15.50, October, 7th.

C3 HOW WELL RECOGNIZED IS THE INTEGRAL THEORY OF FEMALE URINARY INCONTINENCE?

DERYA KILIC¹, TOLGA GULER¹, AKIN SIVASLIOGLU², PETER PETROS³

¹Department of Obstetrics And Gynecology, Pamukkale University, Denizli, Turkey

²Department of Obstetrics And Gynecology, Mugla Sitki Kocman University, İzmir, Turkey

³Department of Surgery, University of New South Wales, St Vincent's Hospital, Sydney, Australia

Background, hypothesis and aim The Integral Theory (IT) is a universal, ligament-based theory of pelvic floor function and dysfunction which encompasses organ prolapse, bladder, bowel and chronic pelvic pain dysfunction.

The aim was to systematically analyse the applicability of the Integral Theory System (ITS) to publications in a pelvic floor journal.

Methods We chose a journal Pelviperineology journal www.pelviperineology.org (PPJ) which encompasses all aspects of the Integral Theory System's reach, Urology, Gynecology, Coloproctology, Perineology. We scanned every publication in PPJ over a two year period to check the applicability of the ITS to the paper in hand.

Results An analysis of manuscripts published in Pelviperineology journal (Volume 36 and 37), only 29 clinical research articles were included as being suitable for analysis. Among the 29 clinical research articles, only 11 (37.9%) mentioned IT and/or related articles as a reference. However, according to evaluation of the clinical papers with respect to the concordance with IT predictions, 26 (90%) manuscripts were regarded as being consistent with IT predictions.

Conclusions Our review indicates consistency with the Integral Theory in 90% of clinical papers, though almost 2/3 of these authors did not seem to be aware of the theory. Why? We can only speculate. One reason may be the difficulty in accepting that pathogenesis for bladder and bowel dysfunctions comes not from the organ itself, but from weak ligaments inactivating the opening and closure muscles which act on the ligaments.

Keywords: Integral Theory

References: 1. Petros PE & Ulmsten U. An Integral Theory of female urinary incontinence. Acta Obstetrica et Gynecologica Scandinavica, Supplement 153, 1990: Vol 69; 7-31. 2. Bernhard Liedl, Hiromi Inoue, Yuki Sekiguchi, Darren Gold, Florian Wagenlehner, Max Haverfield, Peter Petros. Update of the Integral Theory and System for Management of Pelvic Floor Dysfunction in Females European J of Urology EURSUP-738. <http://dx.doi.org/10.1016/j.eursup.2017.01.001>. 3. Skilling PM, Petros PE Synergistic non-surgical management of pelvic floor dysfunction: second report. Int J Urogynae. 2004; 15:106-111.

C4 INNOVATIVE VAGINAL CONES WITH VIBRATING BALL INSIDE IN PELVIC FLOOR DYSFUNCTION

FEDERICO VILLANI¹, ELISABETTA MORATTI¹, BRUNO MINOPOLI¹, ALESSANDRA GUGLIELMINO¹, ANDREA FATUZZO², ANA LIANA TATARU¹, CRISTIAN FURAU¹
¹University of West Vasile Goldis, Arad (ro) ²University La Sapienza, Rome (it)

Introduction: Pelvic floor muscle training (PFMT) is considered the first-line treatment for stress urinary incontinence (SUI) and urge urinary incontinence (UUI) [1]. Studies demonstrate that pelvic floor exercises, electrical stimulation and vaginal cones (VC) are equally efficacious treatments for SUI and far more effective than no treatment at all. [2][3]. VC are cheapest non-surgical treatments for women with stress urinary incontinence and are able to manage also some sexual dysfunctions caused by pelvic muscle relaxation in an autonomous way. Opportunities for self-management by the women should be encouraged, as women can purchase VCs themselves or they can undertake PFMT without formal supervision. Therapies are most likely to be effective and cost-effective when women receive training in order to know how to perform the exercises correctly.[4] We decide to test a new type of vaginal cone (VC) that has a vibrating ball inside like the Ben Wa ball.

Material and methods: The device is composed of a set of 3 vaginal cones of different weights (Fig 1). 36 women took part of the study (range 26–78). The average number of vaginal deliveries per patient was 1.65±1.71 SD. The subject, was instructed to use the device for 15-30 minutes a day for three months. The patients were evaluated after 1 (T1) and 3 (T2) months. During the gynecological examination, the patients were classified according to PC test [5]. At the end of the first and the last evaluation the women filled a QoL questionnaire composed by 13 questions each with rating-answers from 1 to 5. Score 1 was considered the worst outcome, 5 was the best.[6]

Results: Out of the 36 women involved, 18 were with urgency, 7 with effort, 5 with mixed problems and 3 with sexual dysfunction only (Fig. 2). 10 dropped out from the study for lack of commitment and perseverance. Out of the 26 women left 24 reported a clear improvement of the pathologies. All women with sexual dysfunctions reported a gain of sexual pleasure. All the 26 women reported an improvement of PC score between the first and last evaluation in all evaluation parameters. More specifically, the strength parameter increased of 18% from T0 to T3, the endurance parameter increased of 22,6% from T0 to T3 and the fatigability parameter increased of 17% from T0 to T3 (Fig. 3). The QoL shows an improvement. The average T0 score are 3,95±0,68 SD and the average T2 score are 4,29 ±0,59 SD (Fig 4). No side effects such as pelvic pain, vaginal infections or other complaints was reported by patients during the last meeting.

Conclusion: You may notice a complete training leads to an improvement of pathologies related to the weakness of the PF. The verifiable limit to the

treatment is the arbitrary level of commitment. Further studies are necessary.

Keywords: PFMT, Vaginal cones, pelvic floor, urinary incontinence, pelvic prolaps

References: [1]Lauren Hersh, Brooke Salzman, Clinical Management Of Urinary Incontinence In Women Am Fam Physician. 2013 May 1;87(9):634-640. [2] Castro RA et al. Single-blind, randomized, controlled trial of pelvic floor muscle training, electrical stimulation, vaginal cones, and no active treatment in the management of stress urinary incontinence. Clinics (Sao Paulo). 2008 Aug;63(4):465-72. [3] Santos PF et al. Electrical stimulation of the pelvic floor versus vaginal cone therapy for the treatment of stress urinary incontinence. Rev Bras Ginecol Obstet. 2009 Sep;31(9):447-52. [4] Imamura M. et al., Systematic review and economic modelling of the effectiveness and cost-effectiveness of non-surgical treatments for women with stress urinary incontinenc. Health Technol Assess. 2010 Aug;14(40):1-188. [5] Hunskaar S1, Lose G, Sykes D, Voss S..The prevalence of urinary incontinence in women in four European countries. BJU Int. 2004 Feb;93(3):324-30. [6] <https://www.nice.org.uk/guidance/cg171/resources/the-kings-health-questionnaire-pdf-191574685>

Fig.1 - PC score

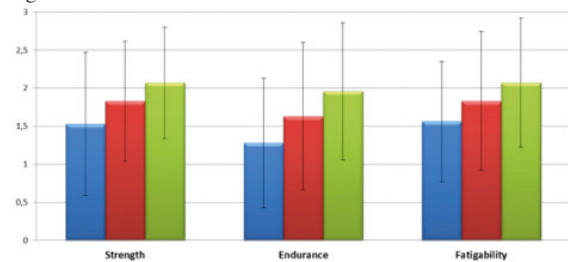


Fig.2 - Pathology

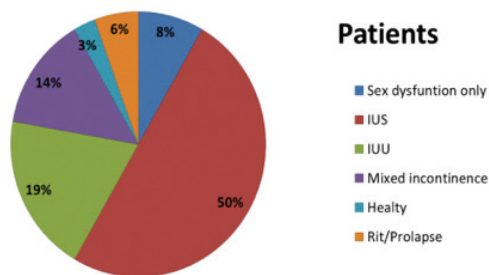
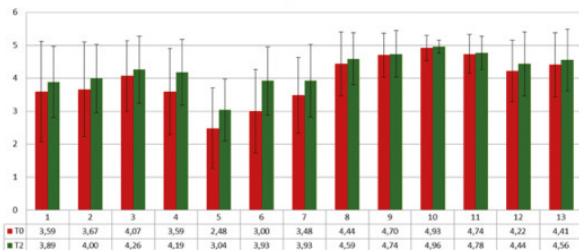


Fig.3 - QoL



C5 EVIDENCE FOR A COMMON PATHOPHYSIOLOGY OF STRESS AND URGE INCONTINENCE IN WOMEN

WOLFRAM JAEGER¹, MAYER L, LUDWIG S, PODLINSKI K, MALLMANN P
¹University of Cologne

Introduction Urinary incontinence (UI) in women is separated in several entities. The most common forms are stress urinary incontinence (SUI) and urgency urinary incontinence (UUI).SUI can be cured by surgery. UUI is considered to be neurological disorder and therefore not treated by surgery. We were interested when and how patients with UUI lose urine.

Material and Methods Only patients with UUI were included in the study. Beside the standard ICIQ-questionnaire patients were asked, when they actually lose urine.

All patients were treated by cervico-sacropexy (CESA) or vagino-sacropexy (VASA) for replacement of the utero-sacral ligaments (USL). When the patients remained incontinent thereafter, they got a TOT.

The surgical procedures were standardized and have been published (www.cesa-vasa.com).

Results 206 patients were suffering from UUI.

These 206 patients lost urine on their way to the toilet. 179 patients (87%) when rising from the chair and 27 patients (13%) on their way to the toilet. From the treatment point of view 35% of the patients were cured by VASA or CESA. After an additional TOT the overall cure rate was 72%.

Discussion The vast majority (87%) of the patients with UUI lost urine when rising from the chair. They all reported that in the normal sitting position they do not lose urine. Some cross their legs to prevent loss of urine, however, at the moment when they bend forward to stand up, they lose urine. The remaining 13% of the patients lost the urine on the way to the toilet. When one considers what happens during rising from the chair the anatomy of the bladder and the vesiko-urethral junction (UVJ) have to be taken into consideration.

So, it is justified to question if urgency incontinence is a neurological disorder or a consequence of an anatomical instability of the UVJ? According to the results of our study, we hypothesize that urinary incontinence in women - stress as well as urgency - are caused by an anatomical defect not a neurological disorder. The defect of closing the bladder to the urethra is a pathophysiological continuum which starts with urine loss under heavy pressure and continues to loss of urine under ever diminishing pressure on that area. The results of the surgical approach by replacement of the USL by CESA/VASA and the PUL by TOT have demonstrated that future treatments of UUI should focus and investigate on that anatomical aspect .

Keywords: Urge incontinence, stress incontinence, Cervico-Sacropexie (CESA), Vagino-Sacropexie (VASA), Uterosacral-Ligament (USL)

C6 URINARY INCONTINENCE IN MEN AND WOMEN - SAME ETIOLOGY AND PATHOGENESIS? SAME TREATMENT?

WOLFRAM JAEGER¹
¹University of Cologne, Germany

Introduction: Urinary incontinence (UI) is caused by an involuntary opening of the bladder into the urethra via the urethral-vesical junction (UVJ). In women the urethra and bladder base are otherwise stabilized by the upper vaginal wall and at the upper cervix. In men the intra-abdominal urethra and the bladder are in the same position.

It has been demonstrated that the descent of the upper vaginal wall can lead to stress- and urgency urinary incontinence. That descensus is not found in quadrupeds. We therefore believe that UI is caused by the upright body position. The vertical traction leads to a diminishing suspension of the bladder usually between 40 and 50 years of age. The situation worsens within the following years leading to ever increasing incontinence. The same can be found in men.

The anatomical position of the bladder is basically the same, however, the bladder base rests on the prostate. In men a prolapse will lead to a descent into the prostate leading to voiding obstruction and urgency. So far that is treated by prostate resection.

The prolapse of the bladder in women is caused by a diminishing function of the pubo-urethral ligament (PUL) and the utero-cervical ligament (USL) (according to the Integral Theory). We therefore hypothesized that UI in men is also caused by defect functions of the USL or PUL.

We therefore studied the anatomy of men in order to find a counterpart of the USL in men.

Methods: A male corpse was dissected during the student course of anatomy. The raphe below the urethra was incised after removal of the testes. After vertical incision the remnants of a fibroid sheet were opened as in the placement of a neo-vagina. The length of the pseudo-vagina was measured. The end of the "male vagina" was elevated and brought under tension with a hand held plastic phantom In order to detect the suspending structures for this "male vagina".

Results: In the male corpse a fibroid structure was prepared with a length of 8 cm – 9 cm. In this cavum with a diameter of 2 cm a probe was placed as usual in the surgery of a neo-vagina. When the probe was elevated a peritoneal fold could be seen which extended from the left and right end of the "vagina" at the lateral pelvis to the sacral region.

Discussion: It could be hypothesized that the upright body position leads to the same events in women as in men. We assume that even in men the remnants of the Müllerian ducts support the bladder base. However, when the support of the bladder base in men decreases the bladder sinks into the prostate. Therefore, he will experience difficulties to void.

Previous studies have shown that the UVJ must be stabilized to avoid urine loss. A TOT can stabilize the anterior part of the UVJ. CESA or VASA operations elevate the apical part of the vagina and thereby stabilize the posterior part of the UVJ. That leads to continence.

It must be considered it the same surgical attempts to stabilize the bladder base and the UVJ can cure UI in men.

Keywords: Urge incontinence, stress incontinence, Cervico-Sacroplexie (CESA), Vagino-Sacroplexie (VASA) Uterosacral-Ligament (USL)

C7 THE NEW MINI SLING SURGERY KIT RESTORE PLUS ® FOR STRESS URINARY INCONTINENCE

YUKI SEKIGUCHI², RYOKO NAKAMURA¹, NORIKO NINOMIYA³, MASAHIRO YAO⁴

¹Women's Clinic Luna Nextstage

²Women's Clinic Luna Yokohama Motomachi

³Women's Clinic Luna Shunsabashi

⁴Yokohama City University Graduate School of Medicine

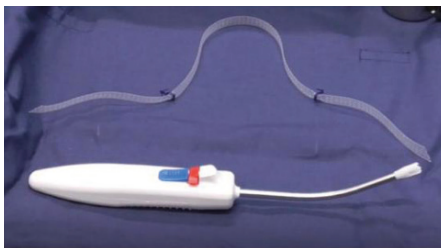
Introduction: The Tissue Fixation System (TFS) is developed by P.P.Petros who is the author of the Integral theory based for the development of the TVT method, aims to treat both stress urinary incontinence and pelvic organ prolapse only in intravaginal area in 2005. TFS consists of 8 mm non-stretchable polypropylene tape and small soft tissue polypropylene anchors that anchors the tape to tissues such as muscle and fascia for strengthens the pelvic floor ligaments and fascia with minimum volume of mesh. RESTORE PLUS ® is the kit for treating urinary incontinence with a disposable applicator for implanting this TFS tape. We present the mid-urethral mini sling surgery for stress urinary incontinence using RESTORE PLUS ®.

Surgery method: The TFS kit was approved for use by the Ethics Committee of the Women's Clinic LUNA Group, and personally imported by the doctor with the approval of the Ministry of Health, Labor and Welfare. For surgery, a 1.5 cm longitudinal incision was placed after local anesthesia at the position of the middle urethra. The submucosal tissue on the anterior wall of the vagina was peeled off, and the urogenital septum was pierced with scissors. The disposable applicator was inserted along the scissors, the TFS anchor was placed on the urogenital diaphragm, the other side was subjected to the same operation, and the tape length was adjusted to be in close contact with the urethra. The wound was closed so that there was no slack on the front wall.

Conclusion: Transperineal pelvic floor plastic surgery using mesh is currently in the process of reflection. But for patients with pelvic floor disorders where congenital connective tissue is fragile, minimal mesh using for ligament reinforcement is effective and needed. In order to safely transplanting minimal mesh, it is necessary to re-evaluate the integral theory.

Keywords: tfs, tissue fixation system, stress urinary incontinence, mini sling, mid urethral sling, restore plus

Fig.1 - RESTORE PLUS



C8 THE CLINICAL ROLE OF NON-ABLATIVE LASER (SSVL) IN THE TREATMENT OF GSM, FEMALE URINARY INCONTINENCE AND VAGINAL LAXITY

DANILO DODERO¹, FILIPPO MURINA¹,
MICHELA ANGELUCCI², FEDERICA FRASCANT³,
GLORIA TROCCHI³

¹Gynecology Department, Clinica Paideia, Rome, Italy

²University of Milan, Milan, Italy

³Aesthetic Medicine Department, Clinica Paideia, Rome, Italy

Purpose: The purpose of this study is to evaluate the short-term effects of Solid State Vaginal Laser (SSVL) in the treatment of postmenopausal women (PMW) suffering from genitourinary syndrome of menopause (GSM), with sexual problems and urinary incontinence.

Materials and Methods: Eighty participants with GSM symptoms were treated with a total of 4 treatments in a two months timeframe (every 15-20 day) of a non-ablative SSVL (LASEmaR 1500™ - EUFOTON). Vaginal bioptic samples were collected before the start of the first treatment and

after 4 weeks from the last one. A cumulative intensity of GSM symptoms using a 10-cm VAS (dryness and/or burning and/or dyspareunia), the vaginal health index (VHI), the Female Sexual Function Index (FSFI) and Urinary Incontinence Short Form (ICIQ-UI SF) were also evaluated.

Results: Improvement in vaginal histological parameters for atrophy was demonstrated following the SSVL treatment. A melioration was also observed on VHIS, VVA symptoms and sexual female function. Finally, after the SSVL treatment almost all patients affected by urinary incontinence obtained an important improvement of symptoms.

Conclusions: The evaluation of histological results indicates an absence of tissue damage (NO carbonization signs), a favorable effect of SSVL on vaginal atrophy in GSM as well as on the others symptoms as demonstrated using VHIS, FSFI and ICIQ-UI SF scores and urinary incontinence. In particular, SSVL was showed more effective for treatment of mild SUI and of urge urinary incontinence.

Keywords: Atrophic Vaginitis, Genitourinary Syndrome of Menopause, Urinary Incontinence, Vulvo-vaginal Laser

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C9 URODYNAMIC EXAMINATION AND TRANSPERINEAL SONOGRAPHY EVALUATION AND MANAGEMENT OF WOMEN WITH RECURRENT SUI

DING LIUCHENG¹

¹The Second Affiliated Hospital of Nanjing Medical University

Objectives: This study was conducted to assess the efficacy of the tension-free vaginal tape retropubic sling after TOT failure and to clarify the aetiology of recurrent stress urinary incontinence

Methods: We performed a retrospective review of 35 women who underwent TVT sling after a previous failed transobturator midurethral procedure with recurrent SUI between February 2012 and November 2018 at a single center. All patients underwent medical history, physical examination, urodynamic study, 1-hour pad test and pelvic ultrasound to assess: urethral mobility, sling location Pre and postoperative. The efficacy of the procedure was assessed at each follow-up visit, scheduled at 4 weeks and 3, 6 And 12 Months after primary procedure.

Results: Postoperatively, 15 patients were completely dry and two had a leakage of urine less than 5 g/h. The overall success rate was 70.8% for the repeat MUS. At a mean of 14.5 months after autologous pubovaginal sling 46 (69.7%) patients reported cure of stress urinary incontinence. Of these patients 25 (37.9%) had complete cure with no stress or urgency incontinence, Persistent stress urinary incontinence was connected with the position of the sling in relation to the bladder neck – in these patients, the sling was closer to the bladder neck Conclusions: Sling location plays a pivotal role in the occurrence of certain complications. The sling position in the proximal part of the urethra or between the middle and proximal urethra appears to be connected with a high rate of unsuccessful stress urinary incontinence treatment. A sling – longitudinal smooth muscle distance below 2 mm is often connected with sling complications, such as overactive bladder, urinary retention and recurrent urinary tract infections.

Conclusions: recurrent SUI is multifactorial aetiological factors, A repeat TVT procedure after a failed synthetic mid urethral sling was shown to be effective.

Keywords: recurrent stress urinary incontinence, suburethral slings, ultrasound imaging.

C10 ULTRASOUND OF BLADDER NECK HYPER MOBILITY IN THE CONTEXT OF SYSTEMIC POSTURE

ROSTYSLAV BUBNOV
Abstract not received.

C11 TUNABLE TENSION TAPE (TTT) AS PRIMARY TREATMENT OF UNCOMPLICATED SUI

OLGA STAROSELTSEVA¹, DMITRY SHKARUPA¹, NIKITA KUBIN¹
¹Saint-Petersburg State University Clinic of Advanced Medical Technologies
N.A. N.I. Pirogov

Introduction: A minimally invasive midurethral sling is a favorite primary surgical method for treatment of stress urinary incontinence (SUI). One of its most common complications is voiding dysfunction associated with the excess tape tension. There are few methods that allow to decrease tape tension after the surgery, such as urethral dilatation, sling mobilization, sling incision, complete excision of the tape and urethrolysis. All these methods are invasive, poorly controlled by the surgeon and are associated with the risk of recurrence of SUI.

Design: The prospective study started in 2016 and involved 171 primary patients with uncomplicated SUI who underwent the transobturator tunable tension tape (TTT) procedure. The postoperative tension tuning depending on the results of cough stress test (CST), uroflowmetry and post-void residual volume (PVR) was performed the day after surgery. Patients were monitored 1, 6, 12 months after the surgery and then annually by a vaginal examination, CST, uroflowmetry, PVR measurement and filling validated questionnaires (UDI-6, PISQ-12, ICIQ-SF).

Results: The next day after the surgery 65 (38.0%) patients required tape tension tuning. All subjects were discharged after achieving continence. No cases of voiding dysfunction were detected after the tape tuning. Three-year follow-up data were available for 127 (74.3%) patients. The objective and subjective cure rates were 91.3 % (n=116) and 88.2 % (n=112) respectively. No cases of wound infections or urinary obstruction were detected. The vaginal mesh extrusion was observed in 1 (0.8%) patient. The questionnaires scores showed 88.2% (n=112) patients to be very satisfied with improvement of quality of life (p<0.001).

Conclusions: The tunable tension tape allows to minimize the risk of postoperative voiding dysfunction. It proved as an effective, safe and reproducible technique for primary patients with SUI.

Keywords: Stress urinary incontinence, midurethral sling, urinary incontinence, voiding dysfunction

Tab.1

Results	12-month (n=157)	24-month (n=139)	36-month (n=127)
Positive cough test, n (%)	6 (3,8%)	8 (5,7%)	11 (8,7%)
De novo urgency, n (%)	8 (5,1%)	7 (5,0%)	10 (7,8%)
Obstruction, n (%)	-	-	-
Vaginal mesh extrusion, n (%)	-	1 (0,7%)	1 (0,8%)
Objective cure rate	151 (96,2%)	131 (94,2%)	116 (91,3%)
Subjective cure rate	153 (97,5%)	133 (95,6%)	112 (88,2%)

C12 TISSUE FIXATION SYSTEM MINISLING PERFORMED UNDER LOCAL ANESTHESIA CURES INTRINSIC SPHINCTER DEFICIENCY – ONE YEAR DATA

RYOKO NAKAMURA¹, NORIKO NINOMIYA¹, YUKI SEKIGUCHI¹
¹Women's Clinic Luna, Japan

Objectives: Intrinsic sphincter defect is difficult to cure, especially in older women. In this study, we confirmed (or not) that a high cure rate for intrinsic sphincter deficiency using the Tissue Fixation System tensioned

minisling was possible by a retrospective review of all intrinsic sphincter deficiency patients operated in our clinic since 2008.

Methods: We studied a total of 96 intrinsic sphincter deficiency patients treated with Tissue Fixation System mid-urethral sling at Yokohama Motomachi Women's Clinic, a free-standing clinic, from 2006 to 2015 retrospectively. We evaluated intraoperative and one year postoperative results. Regarding cure rate, we divided patients into three groups, 17 patients with MUCP<20 and VLPP<65 combined, 55 patients with MUCP<20 and 47 patients with VLPP<65. We evaluated each group separately.

Results: Median age was 63 years (38- 86). Median operating time included local anesthesia was 24 minutes (12-55 minutes) and median blood loss was 5.0ml (3-69ml). All operations were day surgery under local anesthesia. Post-operative pain was minimal. All patients discharged same day. There were no intraoperative complications except one bladder perforation. There were no tape rejections. One year postoperative cure rate among 17 patients with MUCP<20 and VLPP<65 combined was 88.2%. Regarding 55 patients with MUCP<20, it was 90.9%. Regarding 47 patients with VLPP<65, it was 85.1%.

Conclusions: The Tissue Fixation System mid-urethral sling operation is a simple, safe, and effective operation for older women with intrinsic sphincter deficiency and can be performed under local anesthesia.

Keywords: Intrinsic sphincter deficiency, Local anesthesia, Minisling, Stress urinary incontinence, Tissue Fixation System

Acknowledgments: Conflicts of interest :None declared.

C13 THE FLOW CHART IN THE MANAGEMENT OF URINARY INCONTINENCE IN WOMEN BASED ON THE INTEGRAL SYSTEM

AHMET AKIN SIVASLIOGLU¹
¹Department of Obstetrics and Gynecology Medical School, Muğla Sıtkı Koçman University, Turkey

The management of urinary incontinence, which is a very common health problem in women, is a matter of debate. In this regard, the learned societies across the world are helping practitioners by developing their own flow charts. Hence, the urinary incontinence management flow chart based on the Integral System has also been developed and is being presented to practitioners.

In this flow chart; the test such as urodynamics, stress ped test, voiding diary are not actively suggested whereas pelvic floor ultrasonography has been highlighted.

The Integral System places particular emphasis on uterosacral and cardinal ligaments and advocates the strengthening of ligaments in the treatment of pelvic floor disorders (3, 4). In particular, the strengthening of these ligaments in the treatment of sudden voiding sensation / sudden voiding incontinence in women up to 85% surgical success has been demonstrated (5). On the other hand, strengthening of the uterosacral ligaments with a band aid (PIVS) not only eliminates prolapse but also cures symptoms such as incontinence, pelvic pain, nocturia (6).

Considering the time limitation in clinical practice, the necessity of questioning the following 5 symptoms emerges:

1. Pain and/or burning sensation during urination
2. Urgency / Urge urinary incontinence
3. Nocturia
4. Incontinence during physical exertion
5. Continuous incontinence

If an index case presents with any of these 5 symptoms or combinations, evaluation of the patient should be initiated.

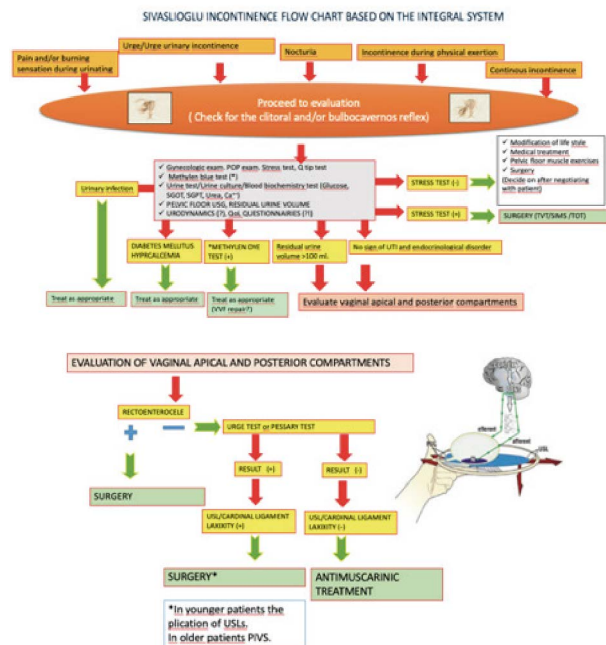
Following a focused history, the gynecological examination should be initiated. Vaginal structures as well as uterus and adnexa should be palpated and if necessary cervical cultures and cotest should be performed. Stress and Q-type tests are indispensable for urogynecologic examination. It is important to objectively show incontinence (but may not be shown). Subsequently, genitalia should be evaluated for pelvic organ prolapse; graded objectively according to the Pelvic Organ Prolapse Quantification (POP-Q) system. Especially in women who have continuous incontinence, the vulva would have a urine smell. If there is a history of pelvic or vaginal surgery or difficult delivery, fistula should be considered. Urine pooling or direct urine flow should be investigated in these cases, especially in the posterior vaginal fornix. Methylene blue test is an effective method for the diagnosis of vesicovaginal fistula. The indirect findings of the continence should be

investigated by pelvic floor ultrasonography (bladder wall thickness, urethro vesical angle change, posterior urethrovesical angle).

The waste urine volume must be measured (with ultrasonography or Foley catheter), especially values above 100cc should be considered pathological. Urodynamics has no place especially in uncomplicated index patients. Quality of life scores (QoL) can be calculated to show patients' affection from incontinence and/or prolapse. Complete urine analysis, urine culture, fasting blood glucose, liver and kidney function tests (SGOT, SGPT, Urea, Creatine) and calcium levels should be requested. If urinary infection, diabetes mellitus, hypercalcemia and/or fistula are detected, appropriate treatment is initiated. The surgical approach should be of utmost importance in cases with a positive stress test. In this process, tension-free vaginal sling, single incision mini sling or transobturator sling should be preferred according to the case. In the case where the stress test is negative, a spectrum of treatment modalities ranging from low-intensity treatments to high-intensity treatments are preferred considering the patient's condition and expectations. Lifestyle changes (eg. weight loss, bladder training) and medical therapy are low-intensity treatments. Pelvic floor muscle training (Kegel exercises, vaginal cones, biofeedback treatments, electrical stimulation, extracorporeal magnetic chair, sacral/ tibial neuromodulation, mechanical devices) and surgery are high-intensity treatments. However, surgery is the most effective treatment modality (midurethral slings should be preferred).

The women who has post voidal urine volume >100 ml., stress test negative, no infection and endocrinological disorder, then vaginal apical and posterior compartment evaluation should be performed. If rectoenterocele is detected in a case as a result of this evaluation; surgical treatment of rectoenterocele (preferably plication of the rectovaginal fascia to the uterosacral ligaments) should be carried out. If no anatomic defect can be detected in a case, 'Urge test' (upon gently elevation of the base of a full bladder with 2 fingers or with a retractor, urge sensation disappears) or 'Pesser test' (when a cylinder pessary is inserted into vagina, nocturia does not happen or urgency stops) whichever one of these tests is performed, the disappearance of nocturia and/or urgency means that the uterosacral / cardinal ligaments are lax and these ligaments should be strengthened through surgery (uteasacral ligament plication / cardinal ligament shortening, Cervicosacropexy -CESA, Vaginosacropexy -VASA, Posterior Intravaginal Slingoplasty-PIVS). Antimuscarinic agents should be considered in the treatment of such a case if the symptoms do not disappear when the tests are performed.

The step-by-step approach is presented at below:



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C14 NEW HORMONAL APPROACHES FOR THE TREATMENT OF URINARY INCONTINENCE IN WOMEN WITH GSM

ELEONORA RUSSO¹, TOMMASO SIMONCINI¹

¹Obstetrics and Gynecology, Department of Clinical and Experimental Medicine, University of Pisa Italy

The sensitivity to sex steroid hormones of the uro-genital tissues has been advocated as an explanation for the common appearance of female low urinary tract symptoms (FLUTS) at menopause. This observation has been elaborated by a panel of experts into a concept called the genitourinary syndrome of menopause (GSM)[1]. GSM is defined as a collection of symptoms and signs associated with a decrease in estrogen and other sex steroids involving changes in the labia majora/minora, clitoris, vestibule/introitus, vagina, urethra and bladder. Lower urinary tract symptoms, such as urinary incontinence (UI), overactive bladder syndrome (OAB) and voiding dysfunctions (incomplete bladder emptying, urinary retention) are prevalent in postmenopausal and elderly women [2]. However, the effect of ageing and menopause cannot be clearly separated in midlife women.

Estrogen has been used to treat incontinence over a number of years, either alone or in combination with some of these other options, and there is evidence that urinary incontinence may improve with local estrogen treatment. In contrast, systemic hormone replacement therapy seems to worsen urinary incontinence. The available evidence regarding vaginal estrogen therapy in postmenopausal women with overactive bladder (OAB) symptoms (urinary urgency, frequency, nocturia, with or without urge urinary incontinence) is encouraging [3]. However, it is not clear if subjective improvement in OAB symptoms reflects a direct effect on lower urinary tract function or an indirect effect via reversing vaginal atrophy.

The possible role of others hormonal therapies of urinary incontinence related to GSM is currently under investigation. Ospemifene is the selective estrogen receptor modulator (SERM) that seems to improve the urinary disorders related to vulvo-vaginal atrophy probably by the activation of estrogen receptors involved in the mechanisms of innervation of detrusor muscle [4]. Dehydroepiandrosterone (DHEA), an adrenal steroid inactive by itself acting as precursor of both intracellular androgens and estrogens, has been shown to be metabolized in peripheral tissues to estradiol (E2) and/or testosterone where it elicits an estrogenic and/or an androgenic effect according to the mechanisms of intracrinology. The use of intravaginal DHEA does not increase peripheral estradiol levels [5, 6], thus being an appropriate replacement for local estrogens in the management of VVA, in addition to providing in androgenic action [7].

Keywords: Menopause, hormonal therapies, urinary incontinence

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D - POSTERIOR COMPARTMENT

D1 METHODS OF SURGICAL TREATMENT OF RECURRENT RECTAL PROLAPSE

TOMASZ KOSCINSKI¹

¹University of Medical Sciences, Poznan, Poland

Aim of the study was to evaluate the effects of surgical treatment for recurrent rectal prolapse.

Material and methods.The study group comprised 14 female and 2 male patients aged from 37 to 92 years submitted to treatment last 20 years. Initial treatment consisted of abdominal mesh rectopexy /4 pts/, transanal Mikulicz resection /4 pts/, Altmeier's technique /2 pts/, Thiersch's anal constriction /3 pts/, sigmoidectomy /1 pt/, Delorme's technique /1 pt/, colpoperineopexy /1 pt/. The relapses occurred between 2 and 30 months.

Results. Reoperations consisted of abdominal rectopexy /6 pts/ or resection rectopexy /3 pts/, Mikulicz resection /3 pts/, Altmeier's procedure /1 pt/, Delorme's technique /1 pt/, pelvic floor reconstructions /2 pts/. Eleven pts were cured /69%. Five pts developed subsequent recurrent rectal prolapse. They were successfully reoperated : 3 rectopexies and 2 transanal resections were performed.

Conclusions. Abdominal rectopexy has appeared to be effective method of treating recurrent rectal prolapse. In fragile, elderly pts good though less permanent results may be achieved following transanal techniques.

Keywords : Rectal prolapse, recurrent rectal prolapse, abdominal mesh rectopexy, transanal rectal resections

D2 PRESACRAL (RETRORECTAL) TUMOR CLASSIFICATION, SYSTEMATIC REVIEW

MOHAMMAD ALHARBI¹

¹Department of Surgery, Medical College, Al Imam Mohammad Ibn Saud Islamic University (imsu)

Background: Retrorectal presacral lesions and tumors are rare. More new tissues are reported in this area and many classification systems have been reported so far.

Aim: To assess the progress and the suitability of current classifications and their ability to cover most of retrorectal or presacral lesions, and tumor classifications.

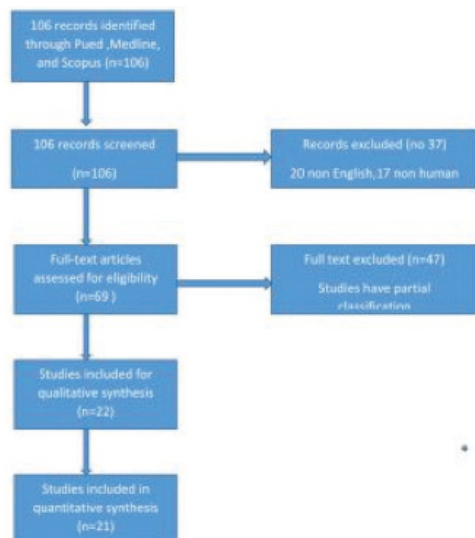
Materials: The systematic review has been performed through PubMed, Medline and Scopus Search to identify all types of classifications of retrorectal/ presacral tumors using PRISMA guidelines.

Result: A total of 26 article met the inclusion criteria. Six classification types have been identified. Two types were able to help in the prediction of surgical outcome and the ability to cover all types of lesions in the retrorectal space, "congenital /noncongenital +benign/malignant" and "germ line classification."

Conclusion: classification based on congenital and tumor potentials and germ line classification would be more suitable to predict surgical outcome and new lesions in the area.

Keywords : presacral tumor ,retrorectal tumor.

Figure: flow chart of systematic review



Tab.1

Author	Country	Year	Classification	Review type	N/A	N/A	possible	N/A	N/A	N/A
Hossein-Hosseini	USA	2015	benign/malignant	review article	N/A	N/A	possible	N/A	N/A	N/A
Hossein-Hosseini	USA	2015	fat/non fat containing mass	review article	N/A	N/A	N/A	N/A	N/A	N/A
Xiaohui Huang	CHINA	2015	Random	retrospective study	36	42	N/A	N/A	N/A	80%
Mohamed Tarchoul	MOROCCO	2015	congenital/non congenital	case report	1	N/A	N/A	N/A	N/A	N/A
F.A. Frizelle	NEW ZEALAND	2015	benign/malignant	original article	69	50	possible	N/A	69%	56%
Marecik	USA	2016	congenital/non congenital	original article	1	N/A	N/A	N/A	N/A	N/A
Alessio Pigazzi	SOUTH KOREA	2016	congenital/non congenital	systematic review	1708	44.6	N/A	60%	70%	68%
Santosh Shetty	USA	2018	congenital/non congenital	case report	1	N/A	N/A	N/A	N/A	N/A
T. G. Mullaney	AUSTRELI A	2018	congenital/non congenital	systematic review	82	41.7	N/A	N/A	N/A	N/A
Harbi	KSA	2018	Ecto/endo/mesoderm	review article	N/A	N/A	possible	N/A	N/A	N/A

Acknowledgments: standardization of retrorectal tumors classification are needed due to multiple versions of classification.this PRISMA based review will elaborate more about the best possible type of classification to be utilized in such conditions.

D3 RESEARCH PROPOSAL: NEW OUTPATIENT DIAGNOSTIC TEST FOR RECTOVAGINAL FISTULAS

DANIELE PASSANNANTI¹, MARIA CHIARA MENNUTI², DAVIDE TELESKO¹, FEDERICO VILLANI³, FABIO GAJ¹

¹Department of General Surgery and Surgical Specialties "Paride Stefanini", Sapienza University of Rome, Azienda Policlinico Umberto I, Viale Del Policlinico 155, 00161, Rome, Italy.

²Master In "pelvic Floor and Rehabilitation", Sapienza University of Rome, Azienda Policlinico Umberto I, Viale Del Policlinico 155, 00161, Rome, Italy.

³Uvvg: Arad (ro)

Purpose: Rectovaginal fistulas (RVF) represent about 5% of all anorectal fistulas. Most RVF are caused by obstetrical or iatrogenic traumas, Crohn's disease and tumors. Pregnancies and previous deliveries, oncological history and radiotherapy, previous suppurative pathologies, Crohn's disease and surgical history should be investigated. Clinical assessment is essential to evaluate the characteristics of the fistula. Evaluation under anesthesia can be useful. Diagnostic tests are necessary in selected cases to complete the diagnostic assessment by investigating any associated diseases. We propose a study to evaluate the accuracy of the outpatient methylene blue test as a primary diagnostic approach for RVF.

Materials and methods: The test is performed by inserting a gauze in vagina. A solution containing methylene blue (50 ml) is injected into the anal canal. Patient stands for 20 minutes. The gauze is removed and the presence of colorant is assessed. If the test is negative, a new gauze is inserted. After six hours, the patient sends to the surgeon the photographic record via smartphone. All patients in the study will undergo pelvic MRI control.

Results: The preliminary study conducted on 5 patients showed the test's ability to detect the presence of RVF. The accuracy and cost/benefit ratio are still to be evaluated.

Conclusions: We think that this test can be useful, mainly for its applicability in the outpatient setting and for its fast and easy execution. It can be a useful tool especially in developing countries. So, we propose a collaboration in order to implement this study proposal.

Keywords : Research Proposal, Diagnostic Techniques and Procedures, Rectovaginal Fistula, Methylene Blue, Outpatient Care.

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Fig.1 - Materials used for the proposed test



Fig.2 - Methylene blue insertion into the anal canal



Fig.3 - Gauze removal



D4 SIMPLE AND SUCCESSFUL SURGICAL TREATMENT OF FECAL INCONTINENCE

SIDI MUCTAR¹, NICOLAS FISCHER¹, MARTIN FRIEDRICH¹
¹Helios Kliniken Krefeld, Department of Urology

Purpose: A new minimally invasive and very effective operation method for the treatment of fecal incontinence is presented.

Material and Methods: We have performed this operation in three patients so far. One with severely impaired nerve conduction speed of the pudendus nerve on both sides and two patients with insufficiently scarred muscle after severe vaginal births.

Following the integral theory as in the treatment of stress incontinence of the woman, a preanal sling is placed to treat fecal incontinence. With this method, we reinforced the pre- and postanal ligaments. The applied pressure of the sling on the anus is adjusted digitally.

Results: Postoperative and in the short observation period of three to six months, all patients were very satisfied with the results. None of the patients needed pads.

Conclusion: This minimally invasive surgical method in the treatment of fecal incontinence complies with and completes the integral theory. More results with a larger cohort will be published soon. Furthermore, we will investigate if this method is also suitable for men.

Keywords: fecal incontinence, pelvic floor adaptation, MRI-defecography

D5 HEMORRHOIDS CLASSIFICATION: DO WE NEED A SMARTER ONE?

DANIELE PASSANNANTI¹, MARIA CHIARA MENNUTI²,
DAVIDE TELESKO¹, FEDERICO VILLANI³, FABIO GAJ¹
¹Department of General Surgery and Surgical Specialties "Paride Stefanini",
Sapienza University of Rome,

Purpose: The issue of classification of hemorrhoids has been widely debated. This led to the creation of the PATE 2006 classification, which considers anatomical parameters, quality of life and severity of symptoms. Although this and other classifications have been proposed, the Goligher classification continues to be the most widely used. According to these considerations, we wanted to collect the opinions of the experts on these two classifications.

Materials and methods: A questionnaire was submitted to 30 proctologists to investigate the usefulness in clinical practice of the Goligher and PATE 2006 classifications and their actuality in relation to current scientific knowledge. The possible need for improvement of the PATE 2006 classification was also investigated. Experts were asked if they would participate in a consensus conference on this topic.

Results: both classifications were considered useful in clinical practice by most experts (63.3% Goligher; 66.7% PATE 2006). Goligher classification was considered current for 26.6%, while PATE 2006 was considered current for 86.6%. The question on the possible improvement of the PATE 2006 classification was replied to as follows: 70% "yes much", 23.3%

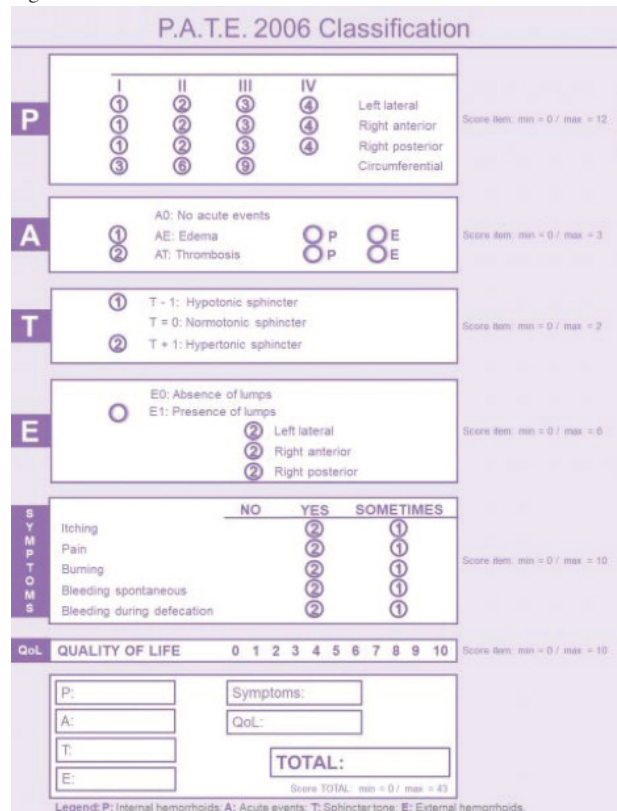
"yes, little", 6.6% "no". All respondents said they were interested in participating in the consensus conference (100%).

Conclusions: This survey highlighted the need to revise the current classifications in order to make them more applicable in clinical practice and less obsolete. We think, this could be achieved by using the PATE 2006 classification as a starting point. According to the experts, a consensus conference on the subject is recommended.

Keywords : hemorrhoids, classification, Research Proposal, Proctology, Gastrointestinal Hemorrhage

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Fig.1 - PATE 2006 Classification



D6 INITIAL EXPERIENCE OF MICRO- FRAGMENTED AUTOLOGOUS ADIPOSE TISSUE INJECTION TO TREAT ANAL INCONTINENCE

ALESSANDRO STURIALE¹, BERNARDINA FABIANI¹,
CLAUDIA MENCONI¹, DANILO CAFARO¹, FELIPE CELEDON
PORZIO¹, GABRIELE NALDINI¹
¹Proctology and Pelvic Floor Clinical Centre - Aoup - Pisa

Purpose: The aim is to evaluate the effect of the injection of micro-fragmented autologous adipose tissue on anal incontinence.

Method: In January 2019 five patients were enrolled to be treated. Inclusion criteria: passive incontinence, anal sphincter lesions <90°, with a Starck score < 8, anal scar tissue.

Technique: The harvested fat from the lateral abdominal wall was processed with the sterile processing kit (Lipogems®). The total amount of harvested tissue need to be more than 130cc thus to obtain at least 30cc of final product ready to be injected at the level of sphincter lesion under direct control of transanal ultrasound.

The functional results was evaluated through the Vaizy score and the satisfaction grade (VAS 0-10).

Results: Five patients underwent the procedure. The mean operative time was 38 minutes. The homogeneous follow-up was 4 months. All the pa-

tients showed an improvement of the Vaizey score (mean preop 12 vs mean postop 7) with a mean satisfaction grade of 8 (range 7-10) at the last follow-up.

Conclusion: Micro-fragmented autologous adipose tissue injection seems to be a promising technique to improve the bothersome anal incontinence symptoms in case of minor sphincter lesions, exploiting its own immunoregulatory and regenerative properties.

Keywords: Anal incontinence, autologous adipose tissue, tissue graft, Lipogems

D7 ENDOSCOPIC TREATMENT OF COMPLEX ANAL FISTULAS (VAAFT) IN COMBINATION WITH OTHER SPHINCTER PRESERVING TECHNIQUES- RESULTS

MARKO ZELIĆ¹, DAMIR KARLOVIĆ¹, DORIAN KRŠUL¹,
DORDANO BAČIĆ¹

¹University Hospital Rijeka

Background: The aim of this prospective observational study was to present our results in operative treatment of complex anal fistulas using sphincter preserving techniques. All operations were performed with VAAFT procedure (Video-Assisted Anal Fistula Treatment). Other sphincter preserving techniques were used in combination with VAAFT when was necessary. These other techniques were LIFT (Ligation of intersphincteric fistula tract) and rectal advancement flap.

Material and methods: In period of three years (March 2016. – March 2019.) 154 patients underwent VAAFT procedure. Postoperative follow up was 1 week, 2 weeks, 1 month, 2 months and 6 months. Only patients with complex cryptoglandular anal fistulas were included and others with simple fistulas and IBD were excluded. Internal fistula opening was identified in 82,23% patients and was supplied in conjunction with LIFT technique, rectal advancement flap or mattress suture.

Results: Primary healing occurred in 76,4%. Other patients had ongoing symptoms up to 4 months after the initial treatment and had to be reoperated. Median primary healing rate was six weeks. There was no serious intra and postoperative complications. None of the patients reported any type of fecal incontinence (FISI score - Fecal Incontinence Severity Index was used).

Conclusion: VAAFT (Video assisted anal fistula treatment) is novel, sphincter preserving technique for treatment of anal fistulas. It takes its place especially in treatment of complex fistulas because of possibility of multiple operative attempts in case of first failure until success is achieved. This technique can be used in combination with other sphincter preserving techniques with good results. However, it is necessary to do further investigation on larger group of patients with longer-term follow-up period.

Keywords : VAAFT, fistula, sphincter preserving, proctology

D8 ROLE OF ENDOANAL AND TRANSPERINEAL US IN CHRONIC PROCTALGIA

YAHONG XUE¹

¹The National Chinese Medicine Center of Colorectal Disease, Nanjing Hospital of Chinese Medicine Affiliated to Nanjing University of Chinese Medicine

Purpose: To evaluate the role of endoanal (EAUS) and transperineal ultrasound (TPUS) for morphological assessment of pelvic floor in female patients with chronic proctalgia (CP).

Materials and methods: 33 female patients (mean age 53.64 years) with CP accepted TPUS with a dynamic transperineal probe placed on the perineum, and images of pelvic floor were taken at rest and during Valsalva. In addition, 30 of the 33 CP patients (mean age 53.30 years) and 25 normal women (mean age 47.20 years) as controls underwent EAUS with a 3D ultrasound probe placed in the rectum. Thickness and length of internal anal sphincter (IAS), thickness of puborectalis muscle (PR), length of the external anal sphincter (EAS) plus PR, and puborectalis angle were measured and compared between the two groups.

Results: Under the TPUS, 15 cases had the smaller anorectal angles during Valsalva; 14 cases were found rectoceles with the mean depth of 1.38 cm; 14 cases were found rectal intussusception; 11 cases were accompanied with cystocele. Compared to the normal individuals under the EAUS, patients with CP had shorter IAS length and greater PR thickness, and had the smaller puborectalis angle both in resting and straining phases.

Conclusions: EAUS and TPUS are simple and useful ultrasound techniques to assess female patients with CP. TPUS can show the whole pelvic floor anatomy and detect other pelvic floor disorders. EAUS shows the

greater PR thickness and paradoxical contraction of PR are the potential clinical features of CP.

Keywords: Transperineal ultrasound, Endoanal ultrasound, Chronic Proctalgia, Female, Pelvic floor

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Acknowledgments : Thanks to the conference committee for giving me this opportunity to share the research data from China.

D9 TRANSANAL ENDOSCOPIC MICROSURGERY (TEM): 10-YEAR EXPERIENCE AND RESULTS

DORDANO BAČIĆ¹, DORIAN KRŠUL¹, DAMIR KARLOVIĆ¹,
MARKO ZELIĆ¹

¹University Hospital Rijeka

Background: The aim of this prospective observational study was to present our results and experience in treatment of rectal pathology using TEM (transanal endoscopic microsurgery). With this endoscopic technique tumorous lesions can be successfully removed from anocutaneous border up to 18 cm in rectum. Even though indications are narrow, with this technique larger and riskier operations can be avoided, provided adequate preoperative staging is preformed.

Materials And Methods: From 2007. to 2017. we have used this technique on 231 patients of which 223 patients had tumors (134 males and 89 females). According to pathohistological finding there were 102 adenomas, 64 carcinoma in situ (Tis), 29 pT1, 11pT2, 5pT3 (of which 4 were palliative procedures and 1 had anterior rectal resection done afterwards), and 4 pT4 which were all palliative procedures. Out of 8 patients that didn't have tumorous lesions, 3 of them had rectal stenosis, 4 had anastomosis stenosis and 1 foreign body removal (intrauterine device that migrated into rectum).

Results: In 5 out of 223 cases (2,24%) resection margins were positive. Total number of patients with recurrent disease was 29 (13%): 11 adenomas out of 102 (10,78%), Tis 6 out of 64 (9,38%), pT1 1 out of 29 (3,45%), pT2 4 out of 11 (36,37%), pT3 3 out of 5 (60%) and pT4 4/4 (100%). During follow-up 10 patients have died due to illness progression. We had 27 patients (11,69%) with minor complications, while major complications as well as early postoperative mortality had not occurred. Average postoperative hospital stay was 2,3 days.

Conclusion: TEM is method of choice for treatment of larger adenomas, carcinoma in situ and T1 carcinoma in carefully selected patients. In T2 NO carcinomas that are smaller than 3,5cm, low grade and without lymphatic and neural invasion, results are comparable to open procedures, especially after neoadjuvant therapy. TEM is good as a palliative method and also as alternative approach in patients that would otherwise have unacceptably high operative risk.

Keywords : TEM, adenoma, carcinoma, transanal, endoscopy, microsurgery, proctology

D10 THE SURGICAL TIPS AND OVERLOOKED FACTORS OF THE POSTERIOR COMPARTMENT REPAIR

DERYA KILIC¹, TOLGA GULER¹, AKIN SIVASLIOGLU²

¹Pamukkale University, Department of Obstetrics And Gynecology

²Mugla Sıtkı Koçman University, Department of Obstetrics and Gynecology

As for all the pelvic organ prolapse surgeries, the goal of posterior compartment repair is to restore normal vaginal anatomy, maintain or restore the functionality. With this perspective, the pelvic surgeon must thoroughly understand the normal anatomic support, physiology and functionality of the pelvic floor and the vagina.

Posterior prolapse surgery can be performed via a variety of approaches with or without grafts, despite insubstantial data for the posterior compartment repair presenting long-term results. However, one should keep in mind that not all posterior prolapses are caused by same defects.

Posterior colporrhaphy traditionally has been the most common surgical technique for posterior compartment repair. But there are some serious deficiencies of this technique. The most important one is various defects often coexist and plication in the midline of vagina may exacerbate the other coexisting defects. Also a simple topographic correction of the vag-

inal bulging does not generally result in normal function of the vagina and surrounding organs.

The musculoelastic fibers that support posterior compartment span from the perineal body to the posterior fornix of the cervix. De Lancey divided the supportive components of the posterior vagina into three levels. At level 1, the upper vagina is suspended by the cardinal-uterosacral ligament complex. The midvagina at level 2 is supported by lateral fibrous attachments to the AITP and the fascia of levator ani. The supportive structures of the distal vagina at level 3 are composed by the fusion of the perineal membrane, levator ani muscles and perineal body to form a rectovaginal septum that connects the pelvic wall to perineal body. Even if the existence of the rectovaginal fascia is controversial, in surgical dissection one can see the presence of a fibro-elastis structure that extends from the perineal body to the rectouterine pouch. It becomes thinner near the uterosacral ligaments and prominent in the midline.

In traditional approaches tearing from uterosacral ligaments (level 1) and perineal body (level 3) are overlooked. But these defects are more serious than expected and are the major etiology of the posterior compartment defects. In this presentation, we aimed to focus on the importance of restoration of posterior compartment defects formed by tearing from uterosacral ligaments and perineal body along with surgical technique demonstration.

Keywords : posterior repair, rectocele, uterosacral ligaments

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D11

LASER HEMORRHOIDOPLASTY: A MINIMAL INVASIVE AND PAINLESS PROCEDURE FOR HEMORRHOIDAL DISEASE

LUIGI BRUSCIANO¹, CLAUDIO GAMBARELLA², GIANMATTIA TERRACCIANO¹, GIORGIA GUALTIERI¹, GIANMATTIA DEL GENIO¹, SALVATORE TOLONE¹, FRANCESCO SAVERIO LUCIDO¹, LUDOVICO DOCIMO¹

¹XI Division of General, Mini-invasive and Obesity Surgery- Master of Coloproctology And Master of Pelvi-perineal Rehabilitation. University of Study of Campania "Luigi Vanvitelli" Naples, Italy

²XI Division of General, Mini-invasive and Obesity Surgery; Medical, Clinical and Experimental Sciences Phd Student, Department of Cardiothoracic Sciences - University of Study of Campania "Luigi Vanvitelli", School of Medicine, Naples, Italy

Background: Hemorrhoidal disease (HD) represents a major medical and socioeconomic problem. The choice of the best treatment option remains controversial. Despite many progresses improving HD surgical treatments and the develop of new techniques in the last three decades, postoperative pain and discomfort remain the major weaknesses. Laser Hemorrhoidoplasty (LHP) represents a new minimally invasive procedure for day-surgery treatment of HD, in which a diode laser determines the hemorrhoidal vessels shrinkage, leading to their subsequent coarctation. The aim of this study is to evaluate the feasibility and the efficacy of LHP in patients with II-III degrees hemorrhoids [1] in terms of postoperative pain and complications, time for the patients to return to their daily routine and resolution of symptoms, reporting our initial experience with this new laser treatment.

Materials and Methods: According to the Goligher's classification, we enrolled patients with II-III degree HD. We performed a specialized coloproctology evaluation, completed by a colonoscopy. All patients underwent a LHP treatment using a 1470-nm diode laser probe (Biolitec® Jena, Germany). We evaluated postoperative bleeding, pain, time needed to come back to their daily routine, need for analgesics, fecal incontinence and other postoperative complications.

Results: Forty patients (23 female and 17 males) with grade II-III HD were enrolled in the study. No significant intraoperative complications occurred. Intraoperative mean time was 15 minutes. Postoperative pain score (at 6, 12, 18, and 24 hours after surgery), was evaluated with visual analogue scale (VAS) and it was extremely low (mean value 2, range 0-3). The eventual administration of NSAIDs in postoperative time and after discharge was low. After surgery, no patient suffered of spontaneous bleeding, while 24 patients (60%) experienced a post defecatory bleeding on the first postoperative day, and 12 patients (30%) on postoperative day

3. From the seventh postoperative day on, no bleeding events occurred in our cohort. 16 patients (40%) came back to daily activity one day after surgery and our whole population in the second postoperative day. No patient experienced sero-mucous discharge and no patient reported fecal incontinence. At a mean follow up period of 8.6 months we reported a rate of recurrence of 0%.

Conclusion: LHP is a minimally invasive and safe procedure that in our initial experience demonstrated a large efficacy, especially in terms of postoperative pain and complications, in selected patients. The greatest strengths are the lack of peri-anal wounds associated with a very low postoperative pain, no need of medications or special anal hygienic measures, a very short time needed to go back to work. No sero-mucous discharge and no case of postoperative fecal incontinence was reported. These promising results point out a negligible postoperative discomfort, and make the LHP a painless, feasible and minimally invasive procedure.

Keywords: Hemorrhoidal disease, Laser, Laser Hemorrhoidoplasty, painless procedure

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Acknowledgments: N/A

D12

WHICH ANORECTAL DYSFUNCTIONS ARE PROLAPSE-INDUCED?

BERNHARD LIEDL¹, K. GÖTTL¹, A. YASSOURIDIS¹

¹Urologische Klinik Planegg, Munich, Germany

Since the papers of P. Petros, M. Swash et al. (*Pelvipereineology* 27:85-124, 2008) more and more evidence has occurred that anorectal dysfunction can be caused by pelvic organ prolapse. To answer the question which anorectal dysfunctions are prolapse-induced we analyzed the data of the Propel-Study registered in „ClinicalTrials.gov Identifier: NCT00638235“. In this multicentre (10 US, 6 EU) study the efficiency of Elevate anterior/apical and Elevate posterior/apical has been examined in 277 women with POP-Q-stages 2-4. Pre, 6, 12 and 24 months post surgery women were asked to answer 46 questions of the Pelvic Floor Disorder Inventory (PF-DI)-questionnaire according to the following kind of bother: No, yes-not at all, somewhat, moderate, quite a bit. We report the prevalences of moderate and quite a bit bother. 185 women answered 24 months after surgery. We report about 10 questions related to anorectal dysfunctions:

Question	Rel.- Frequency preoperative	Rel.- Frequency 24 months	p postop.
Defecation with pressure Vagina/ rectum	42,6 %	19,8 %	< 0,001
Feeling incomplete defecation	66,4 %	25,3 %	< 0,001
Loss of gas under stress	36,1 %	20,9 %	< 0,01
Fecal incontinence 3. degree	8,2 %	3,3 %	= 0,05
Fecal incontinence 2. degree	25,4	%16,5 %	< 0,05
Fecal incontinence 1. Degree	52,4 %	20,5 %	< 0,001
Defecation with pain	31,1 %	7,7 %	< 0,001
Urgesymptoms before defecation	43,4 %	20,9 %	< 0,001
Bother by hemorrhoids	44,3 %	26,4 %	< 001
Bother by rectum prolapse	15,6 %	6,6 %	< 0,05

These results show – mainly high significant – reductions of the prevalence rates post versus pre surgery.

This implies that many anorectal dysfunctions may be caused by pelvic organ prolapse.

Keywords: Which anorectal dysfunctions are prolapse-induced?

D13 THE MANAGEMENT OF STOMAL COMPLICATIONS OF BOWEL: STENOSIS, NECROSIS OR ISCHAEMIA, DERMATITIS, DEHISCENCE

MATTIA ZAMPROGNO¹¹Stomatherapist University Hospital Padua

We speak of stomal stenosis when there is a narrowing of the stomal lumen such as to hinder the escape of the effluents; The results of a recent systematic review indicate that the stenosis has an average incidence of 0.7% in the lateral ileostomies, of 2.6% and 2.5% in the lateral and terminal colostomies respectively. The conservative management of stenosis can include the prevention of constipation, irrigation for colostomies, the execution of stomal dilations for temporary ostomies, the correct education of the patient and caregiver for the recognition of symptoms from intestinal obstruction. Stoma necrosis can be defined as the death of the tissues that make up the stoma. It can be superficial, if it only affects the mucosa, deep, if it also affects the underlying tissues. In their review of the literature Krishnamurthy et al. have shown that this early complication can affect up to 13% of people with ostomy and that it is more frequently associated with colostomies, urgent interventions and obesity. The management of edema and / or ischemia involves monitoring the color of the stomal mucosa in order to promptly detect the appearance of necrosis and warn the doctor who will investigate the extent and depth of the lesion; provides for the application of a protective barrier with a sufficiently wide opening so as not to compromise the blood flow to the intestinal loop. In case of superficial necrosis let the devitalized tissue fall spontaneously. For the Dermatitis there are the Irritative Contact Dermatitis and the Contact Allergic Dermatitis: one caused by the contact between the feces or the urine and the peristomal skin, the second between the peristomal skin and the materials the appliance is made of. Nursing stoma care is sufficient for the management and resolution of Irritative Contact Dermatitis. The treatment of Allergic Contact Dermatitis involves removing the product suspected of being the cause and replacing it with a similar one and a subsequent medical evaluation in the event of failure to resolve. By muco-cutaneous dehiscence we mean the separation or detachment of the peristomal skin from the intestinal loop that constitutes the stoma. It is a stomal complication that occurs early (within the first few weeks of postoperative surgery) and is the most frequent complication after retraction and parastomal hernia: the incidence varies from 15% to 32%. The management of superficial mucosal cutaneous dehiscence may include irrigation with isotonic saline solution, coverage with absorbent products, protective and / or insulating products and replacement of the stomal aid with greater frequency if very secretive. If this complication is very wide and deep, the possibility of applying a negative pressure dressing can be envisaged. The management of mucous-cutaneous stomal dehiscence, in the case of associated infection, foresees to favor the drainage inside the collection bag of the purulent material and the medical evaluation.

Keywords : Surgical Stomas, Stenosis, Necrosis, Dermatitis, Mucocutaneous separation

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Fig 1: Contact irritation dermatitis

Fig 2: Mucocutaneous separation

Fig 3: Necrosis

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D14 FROM CARE TO SELF CARE: THE ROLE OF STOMATHERAPIST

CRISTOFORO LINO FERRERO¹¹Oncology Department Asl Cn 2 Alba Bra²St. Lazzaro Hospital

Introduction Experts know that: living with the stoma is like living with a new organ. And the impact, visual, physical but, above all, emotional is very strong. The right device definitely makes a difference. But that's not enough. It takes a whole stage of emotional support, in which the stomatherapist nurse plays a key action. The role of the stomatherapist is to guide the patient on the way to rehabilitation, which can be said complete only when he/she learns to manage the stoma properly and resumes full autonomy.

Material and Methods In describing this role of the stomatherapist from care to self care, we evaluated the path followed in our hospital structure.

Results We noticed in our outpatient activity, that the path for the stoma-carrying patient that starts from the stomatherapist's mapping and the interview before the surgery followed with the training and the quarterly follow-up, brought our stoma-carrying patients to have few problems in their daily lives and to have a degree of acceptance of the new state.

Conclusions The stomatherapist is the central figure in the care and rehabilitation of the carrier patient. And the recent coding created and adopted in Piedmont has also given a new boost to the development of the stomatherapist's figure.

Keywords : Stomatherapy

References : Marullo - Nursing Today, 1999 - area-c54.it ... Needs and Rehabilitative Goals On the emotional level - Alteration of the state of health sphere ... due to: - Excessive outwardization of the bowel - Mucus-cutaneous suture defect - Possible outcomes ... leveling (depending on the degree) of any skin alterations

D15 BOWEL MANAGEMENT IN OSTOMATED PATIENTS THROUGH IRRIGATION SYSTEM

FANNI GUIDOLINI¹¹Uls 2 Marca Trevigiana Treviso

Creation of a colostomy in colorectal (CRC) cancer patients results in a loss of control over bowel evacuation. Colostomy irrigation is a way of achieving faecal continence and it is offered as an alternative method of stoma care management to wearing and emptying a colostomy appliance. It is a method of stoma care management offering 'control' over bowel habit thus assisting the colostomist in the adjustment and adaptation towards their new way of life. The *only* way to re-establish some control is through irrigation, a procedure that involves instilling fluid (warm water, salt solutions, oily solutions, osmolar solutions), into the bowel to allow for gas and fecal output. *Patient* education and use of irrigation in the United States has decreased over the years, with no clear identification of why this change in practice has occurred. Those respondents who used irrigation had their surgery longer ago, and spent more time in colostomy care than those that did not irrigate. Reasons for the decrease in colostomy irrigation are unreported and present priorities for needed research. Irrigation reduced odour and flatus. Irrigation also improved the social and the working conditions. With modern apparatus the technique is safe. Regular irrigation is associated with reductions in pouch usage. In a old study of Padua's University on 340 patients no one patient who irrigated his colostomy had any cutaneous problem, and this group had significantly better results in preventing leakage of gas and odors compared with those patients using natural evacuation. For most patients who irrigated, the ability to predict or control bowel movements overcame fears of "being dirty" and related psychological problems. These patients also had more normal social and working lives than did those patients not irrigating their colostomies.

Keywords : ostomy irrigation

D16 RECTAL TENESMUS IN THE OSTOMATE

FANNI GUIDOLIN¹
¹Ulss2 Marca Trevigiana

Rectal tenesmus in the ostomates is a condition that can occur at times, from time to time, or constantly and leads to a situation of discomfort and deterioration in the quality of life. Causes are many: faecal diversion colitis, anastomosis, old still present stools, inflammation from radiotherapy. Diversion colitis is a complex, nonspecific inflammatory disease that occurs in an excluded colonic segment in almost all patients submitted to a fecal diversion, such as loop colostomy or Hartmann's procedure (end colostomy with closure of the distal colon's segment) or such as loop temporary ileostomy. Clinical manifestations typically include tenesmus with abundant rectal discharge of mucus or blood and abdominal pain. Tenesmus is a discomfort condition and it can affect QoL. Another cause of tenesmus in the ostomate is low anterior resection of the colon with very low coloproctostomy that is a procedure occasionally required in the surgical management of the patient with gynecologic malignancy or ulcerative rectocolitis with total proctocolectomy. Tenesmus could be also in sigma resection with Hartmann's colostomy, due to the presence of mucus or old stools in rectum. Very low end-to-end anastomosis of the colon to rectum has been associated tenesmus in up to 70% of cases. The construction of a rectal J-pouch low-pressure reservoir has been reported to have a salutary effect upon these symptoms.

Solution are instillations of short-chain fatty acids from an efferent ileostomy loop that reduce colitics by diversion faecal, anal enemas with warm water or chamomile, support through counseling of the ostomy therapist, local anti-inflammatories.

Keywords: tenesmus ostomy ostomate

D17 THE REHABILITATION OF PATIENTS CANDIDATE TO STOMA CLOSURE

FANNI GUIDOLIN¹
¹Ulss2 Marca Trevigiana

Although low anterior resection with the loop by an ileostomy (usually at the right of the abdomen) can prevent patients from having a permanent colostomy, bowel dysfunction may occur in 60% to 90% of patients. Bowel dysfunction symptoms may include fecal and gas incontinence, urgency, frequent bowel movements, clustering of stools, and difficulty emptying. The symptoms collectively are referred to as low anterior resection syndrome (LARS) and adversely affect quality of life. During the ostomy time it's important to subject the patient to evaluation of the pelvic floor, with digital exploration and palpation, to discuss with the surgeon about manometry and any electromyography as well as ultrasound. Knowing the patient's perineal history (number of parts, dysfunctions ...) before surgery, is very important.

Also patients with a colostomy could present faecal urgency and frequency, due to the many months sphincter inactivity, radiotherapy or chemotherapy. Pelvic floor rehabilitation is an important first-line treatment for patients with faecal incontinence and many published case reports and a small number of randomized controlled trials (RCTs) provide limited evidence for its efficacy. Pelvic floor rehabilitation approaches include pelvic floor muscle training, biofeedback, and volumetric training with rectal balloon catheters. Various forms of external electrical stimulation have also been described and may be of added benefit. But it is not possible to use the intracavity probe if agraphes in contact. Behavioral bowel retraining is an important part of a good rehabilitative approach as well and it includes food advice. Several studies have been performed to prevent or treat ARS. Firstly, several surgeons have tried to change the neorectal configuration with diverse anastomotic techniques, including colonic J-pouch or coloplasty. Though these techniques were tried to improve rectal compliance, there were no obvious long-term benefits of any particular technique. Secondly, stoma therapist can explain empirical and symptom-based treatment with loperamide after stoma closure that has frequently been used in the clinic. Loperamide acts directly on the intestine to inhibit peristalsis, lengthens the small intestinal and mouth to cecum transit time, increases the sphincter tone and resting pressure, and reduces urgency, stool volume, and the frequency of bowel movements. It also reduces the sensitivity of the rectoanal inhibitory reflex (RAIR) and increases rectal perception in healthy subjects. But the ostomy nurse can also prescribe thickening supplements. BFT is an established treatment option for constipation and fecal incontinence and it would be important to subject the patient before surgery. With BFT, the patient gets information about activity of the pelvic floor muscles by way of a visual display. Generally, most surgeons may recommend pelvic muscle rehabilitation, such as Kegel exercises, to their patients during the

anal resting phase with temporary stoma. The aim of Kegel exercises is to improve muscle tone by strengthening the pubococcygeus muscles of the pelvic floor. It is now known that with Kegel exercises, the components of the levator ani muscles contract and relax as one muscle. This type of exercise may be beneficial in cases of fecal incontinence. However, the correct execution of these exercises is not checked by medical staff, making it difficult to determine whether the training was ineffective owing to inherent inefficiency, or because it was incorrectly performed. There is also the urgency exercise to be taught to the patient, which uses synergies such as breathing and abdominals. Another factor related to the "urgency to defecate" after stoma closure may be rectal or anal hypersensitivity. So inserting into the distal limb of their loop stoma warm water or a porridge or potato starch and rice starch also by trans anal, that should be of similar consistency to the output from the proximal limb of the stoma and will thus form a comparable stool to that which the patient may expect if the stoma was reversed. A record is kept of the stool frequency/urgency, consistency and any incontinence. It can be repeated on sequential days so that both the patient and physician can get a reasonable idea of bowel function. The main advantage of this technique is that the colon delivers a 'stool' to the distal rectum/anus, which, in a pragmatic sense, is much closer to reproducing the likely function following reversal of a stoma.

Keywords : pelvicfloor rehabilitation stoma closure LARS

D18 PREOPERATIVE STOMA MARKING AFFECT OUTCOME?

MAURO GEROTTO¹

¹Dept. of Surgery (iv Surgery), Specialized Regional Center of Hepato-bilio-pancreatic Surgery Director: Prof. Giacomo Zanus. Regional Hospital "Ca' Foncello"

The pre-operative drawing is a technique of valuation on the positioning of ostomy (urinary or fecal) that is performed by trained health care professionals (stoma nurse or surgeon) and is strongly recommended by the most important clinical studies carried out in the surgical field and is the basis of articles 1 and 2 of the "Charter of Ostomates' Rights", which stresses the importance of receiving pre-operative information about the benefits of surgery and to have adequate news on the possibility to live with a well-made ostomy and situated in the most suitable position.

Through these studies, it is noted that the patient receiving the pre-operative drawing has fewer complications with respect to who performs the intervention without. Through the validated questionnaire "QOL", in Person et al. study (2012), it is noted that 75.5% of patients who do not receive the pre-operative drawing suffer from skin irritation; 24.5% develop a parastomal hernia, of which 18.9% face other surgery related to complications of hernia, 7.5% encounter a stoma prolapse and 66% weekly meet specialized staff for advice.

Also Baykara et al (2014), with a retrospective study on 748 people, shows that 46% of people who have not received the pre-operative drawing have a higher incidence of complications than the 22% of the investigated population who received the procedure recommended by the stoma nurse.

In addition, people who have received education and the pre-operative drawing have developed less anxiety about the diagnosis, the surgery and the ostomy.

Keywords : Ostomy, Stoma, Colostomy, Ileostomy Site marking, Pre-operative site marking, Bowel surgery, Stomacare;

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D19

ANAL CANCER SCREENING PROGRAM: THE VALUE OF HIGH RESOLUTION ANOSCOPY IN HIGH GRADE LESIONS DETECTION

ANDREA LAURETTA¹, ORNELLA SCHIOPPA¹, FERDINANDO MARTELOTTA¹, VINCENZO CANZONIERI¹, EMANUELA VACCHER¹

¹Centro di Riferimento Oncologico, Irccs, Aviano

Purpose: Early diagnosis and treatment of anal intraepithelial neoplasia (AIN) may prevent disease progression. The aim of this study is to evaluate the preliminary results of a screening program implemented by a multidisciplinary team.

Materials and Methods: The screening program used high-resolution anoscopy (HRA) as the gold standard for lesions detection. High risk patients (HIV positive or solid transplant recipients) underwent HPV typing, anal cytology and HRA. Condylomas, moderate and severe dysplasia were treated through HRA-guided electrocautery or surgical excision.

Results: From May Since October 2017 to May 2019 a total of 85 high risk patients were submitted to the screening program. All patients but three had HIV infection; two were kidney transplant recipients, one had common variable immunodeficiency. HPV high-risk genotypes were encountered in 51 patients (58.62%). Thirty-four patients had anal pap smear negative, but in ten cases a lesion was documented by HRA (false negative rate of 29.41%). A total of 134 HRA were carried out and 120 biopsies were performed: 83.3% of HRA-guided biopsy resulted positive. Condylomas were found in 12 patients and AIN1 in 18 patients. Fifteen patients (17.64%) had high grade lesions: 9 AIN2, five AIN3, in situ carcinoma in 1 case. Thirty-one patients underwent either surgical excision or diathermy ablation. Progression of lesions was registered in 5 patients (two AIN II and three AIN III) at 14.63 months follow up

Conclusion: HRA revealed high risk lesions in almost 20% of screened patients and can be regarded as a useful tool to interrupt the oncologic pathway in high-risk patients.

Keywords : Anal Cancer, Anal Intraepithelial Neoplasia, Screening, High Resolution Anoscopy

D20

HOW OSTOMY AFFECTS SEXUAL FUNCTIONING: PSYCHOLOGICAL SUPPORT

CATERINA BERTELLI

The packaging of a stoma changes the body pattern and fragments identity. The ostomate may no longer be able to carry out desired daily activities. The experience of man / woman is going to change. The quality of life may not be satisfactory for a long time. Failure of sexual needs can be a cause. Sexuality represents a healthy form of narcissism and social relations management. Objective assessments such as the StomaQoL can bring out any discomfort and suffering related to the experience of sexual activity. The ostomy can become a cause of sexual dysfunctions. They hide a dysfunctional anxiety and a depressive disorder. Individual psychological support becomes necessary in this context, in order to be aware of the problem, and therefore to improve self-esteem and a sense of efficacy. The psychologist can also become facilitator in mutual aid groups. These allow to develop coping strategies, increase empowerment and encourage social relations in a context in which all participants can be "helpers".

Keywords : ostomy sexuality psychological support

D21

THE EXPERIENCE OF FLATUS INCONTINENCE FROM A BOWEL OSTOMY: A HERMENEUTIC PHENOMENOLOGY

SILVIA ZAMBELLO

Objective: To interpret and present possible meanings in the stories of people with bowel ostomies about their experience of impact of flatus incontinence on their life and being.

Design: Hermeneutic phenomenology guided by a Gadamerian perspective.

Setting and subjects: Six people with a bowel ostomy were recruited from a city in Australia.

Methods: nonstructured interviews generated rich text. Interviews

were videotaped. Hermeneutic techniques were applied for text interpretation

Results: Nine existential themes of meaning emerged. Through symbiotic interpretation, writing, and re-writing, themes were encompassed in a short story: a creative synthesis of actual events and interpreted understandings for ostomates about possible meanings of experiencing flatus incontinence.

Conclusion: Flatus incontinence for people with bowel ostomies can be quite discommoding and impact on their interactions, self-image, sexuality, social activity, and psychological well-being. Nurses need to understand this for empathetic inter- action, patient assessment, intervention selection, research planning, and pertinent education.

Keywords: bowel ostomy flatus incontinence nurse care

References: Annells, M. (2006). The experience of flatus incontinence from a bowel ostomy: a hermeneutic phenomenology. *Journal of Wound Ostomy & Continence Nursing*, 33(5), 518-524.

Embarassment



Social exclusion



D22

PERIANAL SQUAMOUS CELL CARCINOMA AND THE ROLE OF ENDOANAL ULTRASOUND

CHRISTIAN RAYMOND SANDELL MAGBOJOS¹, MA. THESA ISA MILITAR CALIPUSAN¹, ABOUBEN JAN ACAMPADO BALONDO¹, ANDREA JOANNE ALERTA TORRE¹

¹Department of Surgery, Dr. Pablo O. Torre Memorial Hospital, Bacolod City 6100, Negros Occidental, Philippines

Perianal or anal margin malignancies comprise only about 3 to 4% of all anorectal malignancies¹. They are less common than carcinomas of the anal canal and have more favorable prognosis. Squamous cell carcinoma (SCCA) represents one fourth to one third of all SCCA of the anus and is considered the most common malignancy of the anal margin^{1,2,3}.

This paper presents a case of a 54-year old female diagnosed with perianal squamous cell carcinoma at the anococcygeal area by incisional biopsy, with a size of 15x10cm. Abdominopelvic CT showed a posterior fistulous communication between the mass and the distal rectum. 3D endoanal ultrasound confirmed the presence of fistula in the distal rectum. Furthermore, a posterior transsphincteric fistula at the middle anal canal was visualized. Patient was managed with combined radiotherapy (RT) (60Gy in 32 fractions) and chemotherapy (Mitomycin 10mg IV at Day 1 and Day 20; Capecitabine 2 tablets P.O. on RT days) from March 13, 2019 to May 7, 2019. At 12 weeks post-treatment, the mass was reduced to a small ulcer at the intergluteal cleft measuring 3cm widest diameter. Repeat 3D endoanal ultrasound showed scarring of fistula tracts. With RT's protracted effect, the plan is to reevaluate the patient 6 months post chemRT for possible complete response.

This report aims to discuss the added advantage of 3D endoanal ultrasound in the assessment of perianal malignancies and the multidisciplinary approach to managing these types of anal cancers.P

Keywords : anal margin cancer, perianal cancer, squamous cell cancer, 3D endoanal ultrasound, multidisciplinary team

References : 1. Weitfeldt DE, Thiele J. Malignancies of the anal margin and perianal skin. *Clin Colon Rectal Surg*. 2009 May; 22(2): 127-135. 2. Mendenhall WM, Zlotecki RA, Vauthey JN, Copeland EM, III. Squamous cell carcinoma of the anal margin. *Oncology (Williston Park)* 1996;10(12): 1843-1848. 3. Quan S. Anal cancers squamous and melanoma. *Cancer*. 1992; 70(suppl. 5):1384-1389.

Fig. 1. Pre-treatment: large fungating tumor (15x10cm) at the intergluteal cleft with its base 2cm posterior to the anal orifice



Fig. 2. Pre-treatment: 3D endoanal ultrasound showing 2 hypoechoic tracts posteriorly, one tract leading to the distal rectum and the other tract leading to the middle anal canal

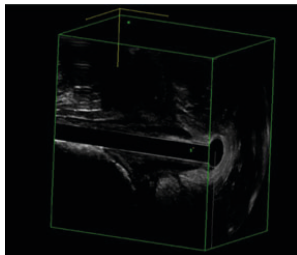
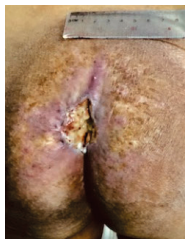


Fig. 3. Post-treatment: 12 weeks post chemoRT showing significant tumor reduction



Acknowledgments : We would like to express our gratitude to the scientific planning committee of the 12th ISPP Annual Congress for giving us this opportunity to share an interesting case.

D23 USE OF STEM CELLS IN ANAL INCONTINENCE: IS THERE A FUTURE?

SIMONA ASCANELLI¹, LAURA CHIMISSO¹, FILIPPO AISONI¹, MARIA GRAZIA SIBILLA¹, PAOLO CARCOFORO¹

¹Surgical Department, University Hospital Ferrara

Anal incontinence causes negative effects on quality of life. Current treatment options show unsatisfactory results. Regenerative medicine could be an alternative to current treatments for fecal incontinence: human adipose -derived stromal/stem cells (hADSCs) are easier and safer to access, secrete high levels of growth factor, and have the potential to differentiate into muscle cells. The purpose of this pilot study is to evaluate the efficacy of the use of stem cells for relieving anal incontinence. The primary outcome measures are the efficacy and the safety of the cell treatment. Secondary outcome is pain evaluated by NRS.

Fifteen consecutive patients (14 women and 1 man) presenting with anal incontinence due to internal sphincter weakness occurred after surgery or brachy-therapy for anal cancer were recruited for the study from June 2017 to June 2019. The study design contemplated hADSCs harvesting using Coleman's technique¹. The injection of hADSCs was performed into submucosa of internal anal sphincter under ultrasound guidance. The Wexner score, endorectal sonography, and anorectal manometry were recorded before and 2 months after surgery.

Results: No side effects were detected. No cancer recurrence were observed. Postoperative pain was null. Wexner scores significantly decreased. Endorectal sonography revealed the improvement in the amount of muscle. Anorectal manometry detected a significant improvement in anal sphincter pressures.

Conclusions: The results of the current study show that injections of hADSCs in fecal incontinence may cause replacement of fibrous tissue with muscle tissue.

Keywords : anal incontinence, regenerative medicine, human adipose -derived stromal/stem cells (hADSCs)

References : 1. Coleman SR. Long-term survival of fat transplants: controlled demonstrations. *Aesthet Plast Surg* 1995; 19:421-425.

D24 LASER TREATMENT FOR ANAL FISTULA (FiLaC)

PAOLO GIAMUNDO¹

¹Policlinico di Monza, Department of Colorectal Surgery, Monza, Italy

Introduction: "FiLaC" consists of closure of the fistula tract by means of laser energy emitted by a diode laser platform. Shrinkage and healing of fistula is contained within 4 mm from the acting laser fiber. This makes the procedure reproducible and sphincter-saving. Its main indication is for high and complex fistulas. However, it may be indicated also in more superficial fistulas where fistulotomies or other techniques may significantly alter continence.

Methods: The laser fiber is introduced into the fistula tract with a Seldinger manoeuvre. Laser energy is delivered at 360 degrees while pulling the fiber out of the tract at the speed of 1mm/sec.

12 W of energy and 1470 nm of wavelength are the optimal parameters to induce the shrinkage of the tract.

Mucosal flaps or suture of the internal orifice may not be necessary as the orifice is involved in the shrinkage effect elicited by the laser beam

Results: One hundred fifty four patients with mean age of 48 years treated with the FiLaC procedure are currently evaluated. There were 130 transphincteric, 5 soprashincteric and 19 high intersphincteric fistulas. 6 patients had Crohn's disease. Main length of the fistula tract was 4.5 cm (range, 2.5-8). No intraoperative complications were recorded.

Direct suture of internal orifice was recorded in 35 patients. Postoperative morbidity included: pain requiring use of pain killer for more than one week in 9 patients (5.8%), light bleeding in 8 patients (5.2%), acute retention of urine in 3 patients (1.9%), perianal abscess in 2 patients (1.3%). At median follow-up is 45.4 months (range, 6-80), overall primary healing rate was 65% (100 out of 154). Fifteen patients were treated with a re-do FiLaC an average of 10 months after failure of FiLaC. Success rate was 40% (6/15). Twenty patients were treated with fistulotomy (and partial sphincter reconstruction where necessary) with a success rate of 95%. 9 patients were lost at follow-up. Of the 6 patients with Crohn's disease, primary healing was achieved in 3 (50%). There was no clear correlation between the suture of the internal orifice and the healing rate.

Conclusion: The FiLaC procedure is a safe, easy to learn, minimally invasive, sphincter-saving and potentially repeatable procedure to treat anal fistulas. It is indicated in all cases of complex anal fistulas where a sphincter-saving procedure is advised.

Keywords: laser, sphincter-saving procedure, minimally invasive procedure

Fig.1 - FiLaC

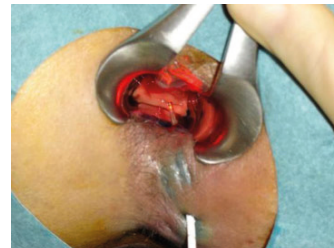
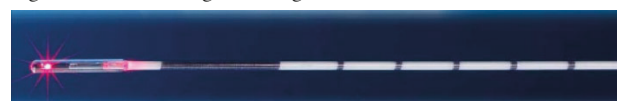


Fig.2 - Diode laser platform



Fig.3 - Laser fiber acting at 360 degrees



D25 IMPLANTATION OF AN ANAL BAND- OPPORTUNITY FOR IMPROVEMENT OF BIOPSYCHOSOCIAL FUNCTION IN PATIENTS WITH FECAL INCONTINENCE

DOROTA ZELAZNY¹, MICHAL ROMANISZYN¹, PIOTR WALEGA¹
¹Third Chair of Surgery, Jagiellonian University Medical College, Krakow, Poland

Introduction Severe fecal incontinence describes a condition of complete loss of control over fundamental physiological functions and loss of abilities to fulfil psychosocial functions by the patients. The last-step procedure that is to restore hope for improvement of biopsychosocial functioning and quality of life is that is determined by the patient's health status is implantation of an artificial bowel sphincter.

Objective The objective of the study was a comparative analysis of the effect of the employed surgical procedure upon the degree of defecation control and quality of life indices in its behavioral, mental and social aspects prior to and 3, 6 and 12 months postoperatively. The analysis also included the effect of the patient's individual style of coping with stress and the functional outcome of the procedure.

Material and methods The study included a group of 12 patients; 6 females and 6 males, aged from 36 to 60 years of life.

The tools consisted of scoring systems that measured symptom intensity (FISI and Jorge and Wexner scale). In assessing the psychosocial functioning, the authors employed the Fecal Incontinence Quality of Life scale (Rockwood). The individual mode of coping with the disease was evaluated by the CISS scale by Endler and Parker.

Conclusions The analysis of results demonstrated that the procedure of implanting an artificial bowel sphincter affected the "continence" (up to 50-60 % postoperatively) and led to improvement in psychosocial functioning in all its assessed aspects, i.e. lifestyle, employment of precautionary measures, depression, anxiety-embarrassment. It was also noted that due to the specific character of the procedure (the necessity to operate an artificial implant), better mean results in assessment of the procedure functionality were achieved by patients presenting the goal-concentrated rather than emotions-concentrated mode of coping with the disease. Thus, it seems justified to state that assessment of biopsychological functioning may be a good criterion of the procedure effectiveness.

Keywords : extreme fecal incontinence, biopsychosocial functioning, artificial bowel sphincter

D26 BIOFEEDBACK COMBINED WITH EMG-ELECTRICAL STIMULATION IN THE TREATMENT OF DYSSYNERGIC DEFECATION

JUNHUI CUI¹, SHUANG WU¹, FENG SHEN¹
¹Tongde Hospital of Zhejiang Province

Purpose: Biofeedback is the first choice for treatment of dyssynergic defecation. This study mainly focused on the effect of biofeedback combined with EMG-electrical stimulation protocol on dyssynergic defecation.

Methods: 130 patients of dyssynergic defecation enrolled who met Rome III criteria and consent to the study from 2016 to 2018. 55/130 patients in research group were followed the biofeedback combined with EMG-electrical stimulation protocol, after a surface EMG probe inserted into the rectum, patients were asked to do the the kegel maneuver for 15 times with abdominal breathing and then got the electrical stimulation by 20-50 Hz frequency, 500us pulse width and 6s contraction with 4S relaxation interval stimulus for 30 minutes totally for 1 session. 75/130 patients in control group were followed the traditional surface EMG guided biofeedback training protocol including the kegel template exercises for 3 second contraction and 5-10 second relaxation and rectal sensation training for 30 minutes of 1 session. Both groups of patients were treated 5 times per week for 4 weeks as 20 sessions. The Cleveland Clinic Score (CCS) of constipation, Patient Assessment of Constipation Quality of Life score (PAC-QOL) and anorectal manometry were observed before and after treatment.

Results: There was no significant difference in gender, age, course of disease between the research group and the control group ($P > 0.05$). Before and after treatment, the frequency of defecation, incomplete defecation and poor perception were alleviated in both groups. The CCS scores in research group was 14.15±4.12 VS 10.37±2.34 point ($P=0.043$) before and after treatment and the control group was 15.76±3.89 vs 11.09±1.76 point ($P=0.039$) respectively. There was no significant difference between the two groups after treatment (10.37±2.34 vs 11.09±1.76) ($P=0.126$). The PAC-QOL score of the research group was improved 87.34±23.81 vs 61.22±19.08, $P=0.023$), while that of the control group was 93.79±31.56

vs 75.45±20.82) ($P=0.051$) with no statistical difference. The PAC-QOL score of the research group was significantly lower than that of the control group ($P=0.043$). Anorectal manometry showed that resting pressure decreased in both groups after treatment ($P < 0.05$), but more significant in the research group (100.17±25.16 vs 85.76±20.76 mmHg) than that in the control group (96±31.15 vs 87.65±18.65 mmHg, ($P < 0.01$)). It showed that maximum tolerance volume decreased in the research group (155.05±34.98 vs 120.49±39.64 ml, $P=0.04$), no difference in the control group (146.78±40.30 VS 130.19±36.47 ml, $p=0.18$).

Conclusion: Biofeedback combined with EMG-electrical stimulation and traditional pelvic floor biofeedback protocol can both improve the dyssynergic defecation symptoms and quality of life. The former is better in rectal sensation recovery.

Keywords: Biofeedback; EMG-electrical stimulation; dyssynergic defecation; Cleveland Clinic Score; PAC-QOL; Anorectal manometry

D27 MIDDLE-TERM OUTCOMES OF GATEKEEPER IMPLANTATION FOR FECAL INCONTINENCE

LUIGI BRUSCIANO, MD, PHD;¹ SALVATORE TOLONE, MD, PHD;¹ GIANMATTIA DEL GENIO, MD, PHD;¹ UGO GROSSI, MD;² ANTONIO SCHIATTARELLA, MD;¹ FRANCESCO PIO PICCOLO, MD;¹ JACOPO MARTELLUCCI, MD;³ MICHELE SCHIANO DI VISCONTE, MD;⁴ LUDOVICO DOCIMO, MD, PHD.¹

¹Department of Medical, Surgical, Neurologic, Metabolic and Aging Sciences, General, Mini-invasive and Obesity Surgery Unit, Master of Coloproctology, Master of Pelvic Floor Rehabilitation, University of Campania "Luigi Vanvitelli" Naples, Italy.

²Tertiary Referral Pelvic Floor and Incontinence Centre, Regional Hospital Treviso, Italy.

³General, Emergency and Mini-invasive Surgery, Careggi University Hospital, Largo Brambilla 3, Florence, Italy.

⁴S. Maria dei Battuti' Hospital, Conegliano, Treviso, Italy.

Background: Intersphincteric injectable bulking agents are one of the current treatment options for fecal incontinence failing behavioural and medical therapy. Gatekeeper showed promising short-term results but long-term outcomes are unknown. We aimed to clinically evaluate a prospective cohort of fecal incontinence patients up to 36 months after implantation of Gatekeeper.

Methods: Consecutive female patients were eligible if fecal incontinence onset was at least 6 months prior to the first visit and symptoms were refractory to standard conservative measures. All patients underwent implantation of 4 or 6 Gatekeeper prostheses. 3D endoanal ultrasonography and high-resolution anorectal manometry were performed pre- and post-operatively at 2 and 3 months, respectively, after implantation. The Cleveland Clinic Fecal Incontinence score was calculated at baseline, 1, 3, 12, 24 and 36 months post-operatively.

Results: Twenty patients (all women; median age 59 years) were enrolled, and all implants were uneventful. Post-operative endoanal ultrasonography showed normal prosthesis localization in 16 (80%) patients. At manometry, mean anal resting pressure significantly improved (57.8±7.5 mmHg, $p=0.0004$). Mean pre-operative Cleveland Clinic Fecal Incontinence score was 12.35±1.75, with significant improvements initially documented at 3 months (4.9±1.5, $p<0.0001$) and sustained up to 36 months (4.9±1.7, $p<0.0001$). Patients receiving only 4 (compared to 6) prostheses and those suffering from pudendal neuropathy (compared to those who did not) showed significantly higher Cleveland Clinic Fecal Incontinence score values in the middle-term.

Conclusions: Initial improvements after Gatekeeper implantation for fecal incontinence are sustained in the middle term. Accurate pre-operative evaluation of coexistent clinical conditions that may negatively affect outcomes is recommended for patient selection.

Table 1. High resolution anorectal manometry (HRAM) parameters at baseline and 3 months post-implantation of Gatekeeper. Subgroup analysis of patients with or without pudendal neuropathy, carrying or not a sacral neurostimulator (SNS), and undergoing implantation of 4 or 6 prostheses.

Patients characteristics	HRAM parameters		
	ARP (mmHg ±SD)	MSI (mmHg ±SD)	Anal canal length (cm)
Baseline (N=20)	46.5 ±6.5	102.2 ±13.2	3.4 ±0.7
3 months after Gatekeeper (N=20)	57.8 ±7.5 *	110.4 ±11.2 *	3.9 ±0.6
PN+ (N=4)	50.2 ±4.2 *	102.5 ±3.7 *	3.7 ±0.8
PN- (N=16)	63.4 ±8.1 *	111.8 ±10.4 *	3.9 ±0.9
SNS+ (n=3)	56.2 ±4.3	103.5 ±5.8	3.8 ±0.7
SNS- (N=17)	58.1 ±8.8	111.2 ±9.9 *	3.9 ±0.7
4 prostheses (N=4)	55.4 ±3.7	110.5 ±8.8	3.9 ±0.8
6 prostheses (N=16)	61.5 ±7.4 *	110.8 ±7.9	3.9 ±0.6

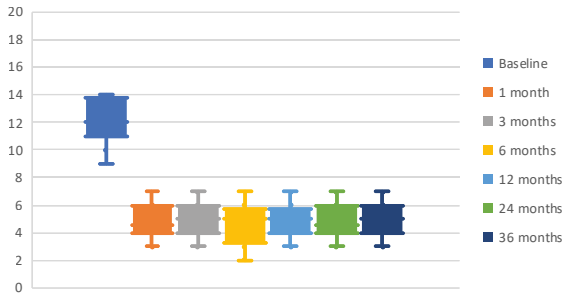
* $p<0.05$ compared to baseline values. ARP=anal resting pressure; MSI= maximum squeeze increment; PN= pudendal neuropathy

Table 2. Cleveland Clinic Fecal Incontinence score at baseline and last follow-up after GateKeeper implantation in patients with or without pudendal neuropathy (PN); carrying or not a sacral neurostimulator (SNS); and undergoing implantation of 4 or 6 prostheses.

Patient subgroups	Cleveland Clinic Fecal Incontinence score (CCFIS)		
	Baseline	36 months	P
PN+ (N=4)	10.4 ±1.9	5.8 ±1.1	<.0001
PN- (N=16)	12.1 ±1.8	4.5 ±1.0	
SNS+ (n=3)	10.3 ±1.7	4.0 ±1.4	<.0001
SNS- (N=17)	10.4 ±1.9	5.9 ±1.2	
4 prostheses (N=4)	11.2 ±1.6	6.0 ±1.2	<.0001
6 prostheses (N=16)	11.9 ±1.8	4.4 ±1.0	

P values refer to comparisons in CCFIS changes from baseline to 36-month post-implantation between the various subgroups.

Fig.1 - Box plots comparing pre-operative (baseline) and post-operative (1, 3, 6, 12, 24, and 36-month follow-up) Cleveland Clinic Fecal Incontinence score (CCFIS).



D28 INJECTABLE BULKING AGENTS FOR FECAL INCONTINENCE: AN AGE-MATCHED RETROSPECTIVE COHORT ANALYSIS OF GATEKEEPER VERSUS SPHINKEEPER.

UGO GROSSI, MD;¹ LUIGI BRUSCIANO, PHD;² SALVATORE TOLONE, PHD;² GIANMATTIA DEL GENIO, PHD;² GIAN LUCA DI TANNA, PHD;³ CLAUDIO GAMBARDELLA, MD;^{2*} MICHELE SCHIANO DI VISCONTE, MD;¹ JACOPO MARTELLUCCI, MD;⁴ LUDOVICO DOCIMO, PHD.²
¹Tertiary Referral Pelvic Floor and Incontinence Centre, Regional Hospital Treviso, Italy.

²General, Mini-invasive and Obesity Surgery Unit, Department of Advanced Medical and Surgical Sciences, University of Campania "Luigi Vanvitelli" Naples, Italy.

³Statistics Division, The George Institute for Global Health, UNSW, Sydney, Australia. ⁴General, Emergency and Mini-invasive Surgery, Careggi University Hospital, Florence, Italy.

Background: We aimed to evaluate morpho-functional changes of the sphincter complex after GateKeeper (GK) and SphinKeeper (SK) procedures and correlate these with symptoms improvement.

Methods: Ten consecutive females undergoing SK implant were age-matched with a cohort of 10 females who previously underwent GK procedure. Patients in the SK and GK group underwent implantation of 10 and 6 prostheses, respectively. Muscle tension (*Tm*), expressed in millinewtons per centimetre squared, $mN(cm^2)^{-1}$, was calculated using the equation $Tm = P(r_i)(tm)^{-1}$, where *P* is the average maximum squeeze pressure, *r_i* and *tm* the inner radius and thickness of the external anal sphincter, respectively. The pre- post-implant changes in *Tm* and Cleveland Clinic Fecal Incontinence score (CCFIS) were tested by linear and Poisson regression models, respectively.

Results: CCFIS significantly improved in both groups at 12 months post-implantation. Although not reaching statistical significance, symptoms improvement after SK was 33% above that observed after GK ($p=0.088$). Compared to baseline, a significant increase in *Tm* was observed in both groups at 12 months (GK, 508.1 [478.8-568.0] vs. 864.4 [827.0-885.8] $mN(cm^2)^{-1}$; SK, 528.0 [472.7-564.0] vs. 858.6 [828.0-919.6] $mN(cm^2)^{-1}$, $p=0.005$). Compared to the GK group, *Tm* was significantly higher in patients after SK implant (158.3 $mN(cm^2)^{-1}$ [95% CI, 109.6-207.0]; $p<0.001$), after controlling for baseline values, at 12 months post-implantation.

Conclusions: GK and SK are safe and effective treatments for FI with good short-term clinical outcomes. Comparative analysis showed superiority of SK over GK in terms of gain in *Tm*, with borderline significantly better improvement in symptoms. Larger studies are needed to confirm

these findings.

Keywords: fecal incontinence; GateKeeper; SphinKeeper; bulking agents; muscle tension; anal sphincters.

Tab.1 - Patients' characteristics at baseline.

	GateKeeper	SphinKeeper
Age, years	53 (45-62)	52 (47-61)
FI onset, years	3 (2-6)	3 (4-5)
No. vaginal deliveries	1 (1-2)	1 (1-2)
Obstetric trauma (%)	4 (40)	6 (60)
Starck score	0 (0-1)	1 (0-2)
Previous anal surgery*	1 (10)	2 (20)
Pudendal neuropathy	1 (10)	3 (30)
Diabetes	1 (10)	2 (20)
SNS <i>in situ</i>	1 (10)	3 (30)
CCFIS	12 (11-14)	13 (11-13)
IAS morphology (%)		
Normal	6 (60)	4 (40)
Atrophy	4 (40)	6 (60)
Defect	0 (0)	0 (0)
EAS morphology (%)		
Normal	8 (80)	6 (60)
Atrophy	0 (0)	0 (0)
Defect	2 (20)	4 (40)

Continuous data are expressed as median with first and third quartiles. FI: fecal incontinence; CCFIS: Cleveland Clinic Fecal Incontinence score; IAS: internal anal sphincter; EAS: external anal sphincter.

*Referred to haemorrhoidectomy in all cases.

Tab.2 - Study of the external anal sphincter (EAS) contractility at baseline and 12-month after GateKeeper™ and SphinKeeper™ implant.

	Parameter	Pre-implant	Post-implant	P value
GateKeeper™	<i>P</i> , mmHg	100.0 (97.5-112.5)	110.0 (103.8-112.5)	0.071
	<i>r_i</i> , mm	13.0 (12.1-13.5)	18.2 (18.1-18.3)	0.005
	<i>tm</i> , mm	2.5 (2.5-2.7)	2.3 (2.3-2.4)	0.005
	<i>Tm</i> , $mN(cm^2)^{-1}$	508.1 (478.8-568.0)	864.4 (827.0-885.8)	0.005
SphinKeeper™	<i>P</i> , mmHg	110.0 (105.0-112.5)	110.0 (108.8-118.5)	0.348
	<i>r_i</i> , mm	12.8 (12.0-13.3)	19.2 (19.0-19.3)	0.005
	<i>tm</i> , mm	2.6 (2.5-2.7)	2.1 (2.0-2.1)	0.005
	<i>Tm</i> , $mN(cm^2)^{-1}$	546.6 (472.7-576.7)	999.2 (968.6-1077.2)	0.005

All values are expressed as median with first and third quartiles. *P* = intraluminal pressure during average maximum voluntary contraction; *r_i* = inner radius of the EAS; *tm* = EAS thickness; *Tm* = muscle tension, expressed in millinewtons per centimetre squared by the equation $Tm = P(r_i)(tm)^{-1}$.

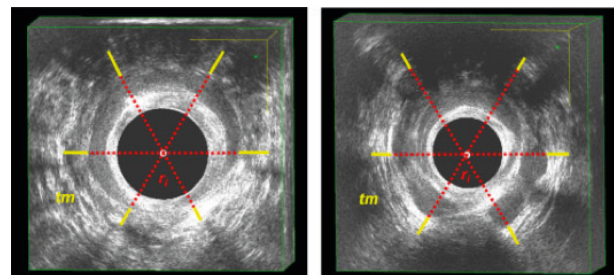
Tab.3 - Linear and Poisson regression models to examine the extent of change in muscle tension (*Tm*) and Cleveland Clinic Fecal Incontinence score (CCFIS), respectively, after SphinKeeper™ vs. GateKeeper™.

	Change in <i>Tm</i> *	Coeff.	SE	P value	95% CI
SphinKeeper		158.3	23.1	<0.001	109.6 - 207.0
<i>Tm</i> at baseline		-0.6	0.2	0.004	-1.0 - -0.2
constant		662.8	99.2	<0.001	453.6 - 872.1
	Change in CCFIS	IRR	SE	P value	95% CI
SphinKeeper		1.33	0.22	0.088	0.96 - 1.85
CCFIS at baseline		1.10	0.07	0.101	0.98 - 1.24
constant		1.90	1.41	0.384	0.45 - 8.10

IRR: incidence rate ratio; SE = standard error.

* $R^2=76\%$

Fig.1 - Morphofunctional changes of the external anal sphincter (EAS) detected by endoanal ultrasound before and after GateKeeper implant (demonstrative example). *r_i* = inner radius of the EAS; *tm* = EAS thickness.



D29 SYSTEMATIC CHARACTERISATION OF DEFAECOGRAPHIC ABNORMALITIES IN A CONSECUTIVE SERIES OF 827 CONSTIPATED PATIENTS AND IMPACT OF SEX

UGO GROSSI, PHD;^{1,4} HENRIETTE HEINRICH, PHD;²
GIAN LUCA DI TANNA, PHD;³ PAUL VOLLEBREGT, MD;⁴
CHARLES H KNOWLES, PHD;⁴ S MARK SCOTT, PHD.⁴
¹Tertiary Referral Pelvic Floor and Incontinence Centre, Regional Hospital Treviso, Italy.
²Department of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland.
³Statistics Division, The George Institute for Global Health, UNSW, Sydney, Australia.
⁴Centre for Trauma and Surgery, and GI Physiology Unit, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, London, UK.

Background: The aim of this study was to systematically characterize defaecographic abnormalities in a consecutive series of patients presenting with moderate to severe symptoms of constipation. Secondary aims were to compare findings between genders.

Methods: Consecutive constipated patients scoring ≥ 12 on the Cleveland Clinic Constipation score (CCCS) and undergoing defaecography were included. Static and dynamic parameters were used to define a large spectrum of defaecographic abnormalities using cut-offs derived from studies on healthy volunteers. Eight binary variables (presence or absence) were used to identify a finite number of defaecographic phenotypes: functional abnormality, megarectum, excessive dynamic perineal descent, enterocoele, intussusception, structurally significant intussusception, rectocoele, structurally significant rectocoele.

Results: A total of 827 patients (median age, 49 years; range, 17-98) were identified, 725 (87.7%) of whom were female. No statistically significant differences were found between genders for all comparisons except for CCCS, with marginally higher mean symptom severity (<1 full point of the scale) demonstrated in females compared to males (18.6 [3.6] vs. 17.5 [3.1], respectively; $p=0.002$). The principal phenotypes encountered were normal defaecography (16%) and isolated functional abnormalities (13%), both significantly more prevalent in males than females. Coexistence of structural abnormalities was significantly more often encountered in females, reflecting global pelvic floor weakness. The number of phenotypes including at least 2% of patients were more limited in males ($n=10$) compared to females ($n=16$).

Conclusions: Multiple structural and functional abnormalities may coexist in the same subject, with degree of overlap greater than previously recognized.

Fig.1 - Outcomes of defaecography in the patients' cohort. Venn's Diagrams (Up); Upset Graph (Down).

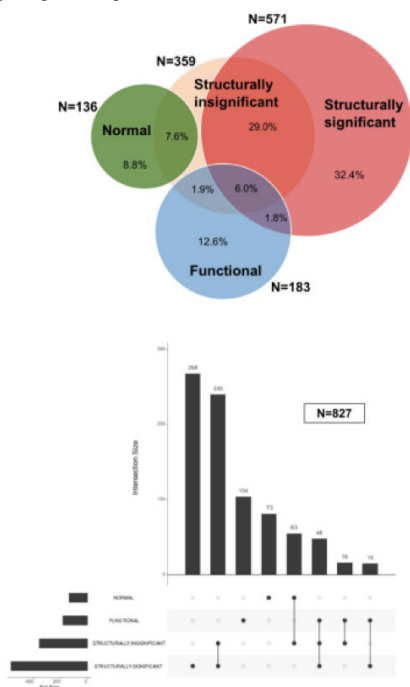


Fig.1 - (a) Prevalence of structural abnormalities. Venn's Diagrams.

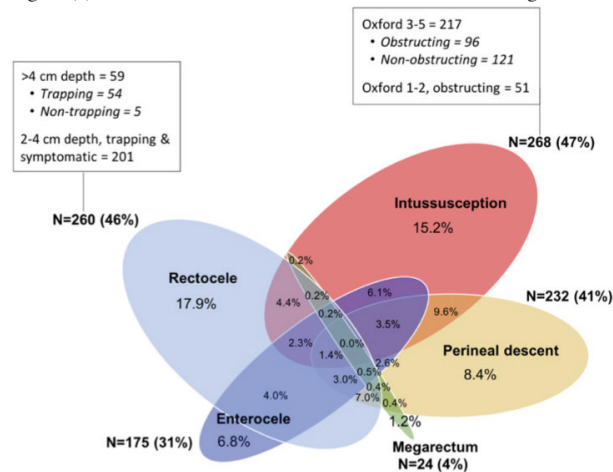
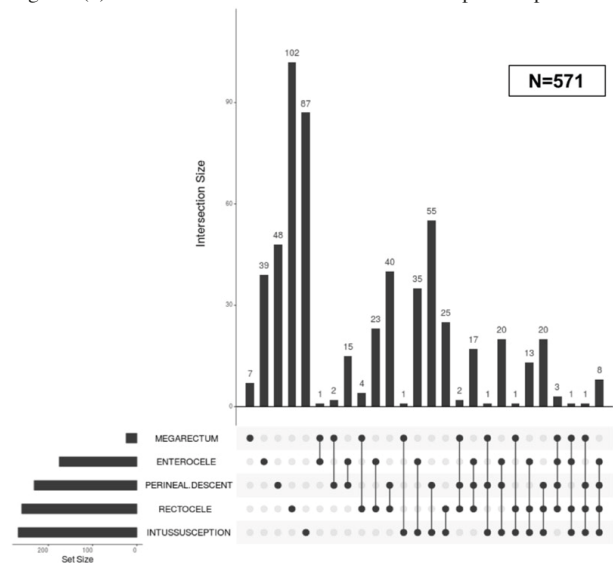


Fig. 2 - (b) Prevalence of structural abnormalities. Upset Graph.



D30 WIDE EXCISION OF ANAL CANAL AIN III: A VIDEO

ANTONIO SALZANO¹, VALENTINA TESTA¹, SYLVIE MOCHET¹,
PAOLA SALUSSO¹, MARIO MORINO¹,
MASSIMILIANO MISTRANGELO¹
¹Surgical Sciences Department, University Of Turin, Città Della Salute E Della
Scienza Di Torino Hospital, Chief Prof Mario Morino.

Aim

Anal intraepithelial neoplasia (AIN) is often a precursor to invasive squamous anal carcinoma, especially in HIV patients.

Case report

We present a video regarding a male patient, 55 years old, affected by AIN III, associated with HIV (CD4 734) and HCV infection. The patient referred anal pain started two years ago. Rectal examination was negative. He was submitted to an anoscopy which revealed some suspicious lesions in the posterior anal canal. A high resolution anoscopy confirmed posterior areas with mosaicism and punctation lesions. We performed a biopsy, which confirmed the diagnosis of AIN III. The patient underwent to a wide excision of the lesion. We performed surgery in spinal anesthesia. Patient was in lithotomic position. We performed a dissection of mucosa and submucosa planes after submucosal injection of saline solution. The dissection was performed up to dentate line of the posterior anal canal. The specimen was sent to AP for definitive histological diagnosis. Finally we perfected the hemostasis and we placed anal spongostan. Patient received analgesic and antibiotics therapy. He was discharged the day after, without any

complication. The histological result confirmed the diagnosis of AIN III. Surgical margins were free from residual disease.

Conclusion.

AIN III is a precancerous lesion of anal canal. Treatment of these lesions is mandatory to reduce the risk of progression to anal cancer. We consider wide surgical excision the best treatment in order to obtain an adequate postoperative histological exam and a value of surgical margins.

Keywords : AIN, Anal cancer, Wide Excision, Treatment

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D31

WIDE LOCAL EXCISION OF A BUSCHKE-LÖWENSTEIN TUMOUR

VALENTINA TESTA¹, ANTONIO SALZANO¹, SYLVIE MOCHET¹, PAOLA SALUSSO¹, MARIO MORINO¹, MASSIMILIANO MISTRANGELO¹

¹*Surgical Sciences Department, University of Turin, Città Della Salute e Della Scienza di Torino Hospital, Chief Prof Mario Morino.*

Introduction. Buschke-Löwenstein tumour (BLT), also known as giant condyloma acuminatum or verrucous carcinoma, is a very rare sexually transmitted disease due to human papillomavirus (HPV) subtypes 6 and 11 that affects the ano-genital region. BLT is characterized by a slow-growing cauliflower-like mass, locally aggressive and destructive behavior, with high recurrence rate and malignant transformation occurring in 40-60% of cases. The treatment of BLT is controversial and includes imiquimod cream, podophyllin resin, cryotherapy, laser surgery and excision with electrocautery. Several methods have been described to cover the skin defect, including mesh-skin grafting, S-plasty, myocutaneous flap, V-Y flap reconstruction or others.

Case report. We present a video of a wide local excision of a Buschke-Löwenstein tumour without plastic reconstruction. The video shows a case of a patient with a large perianal BLT subjected to tangential shave excision with electrocautery; wounds heal by secondary intention without anal stenosis. Anal sphincters are respected.

Conclusions. Considering the possible risk of degeneration and that many patients are HIV+ we suggest that the reconstruction is not necessary and could increase postoperative complications. The risk of anal stenosis is minimal because the lesion rarely is completely circumferential and the anal canal is rarely involved

Keywords : Buschke-Löwenstein tumor, AIN, HPV infectio, Surgery, Treatment

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D32

TYPES OF STOMA AND ASSOCIATED SURGICAL PROCEDURES

CARLO SERNAGIOTTO¹, MAURIZIO PAVANELLO¹, CARLO DI MARCO¹, MATTIA TREVISAN¹, SAMUELE GALATI¹, ROBERTO RIZZATO¹, RENATA LORENZETTI¹, OLGA SPIRIADOU¹, GAIA ARMAN¹

¹*Departement of Surgery Unit of Visceral And Colorectal Surgery Aulss 2 Marca Trevigiana Conegliano Hospital*

The word stoma derives from the Greek stoma, mouth. It therefore represents an external derivation (stoma) alternative, compared to the natural one of the digestive tract or urinary tract, created on the abdomen wall. The derivation outside of a tract of intestine or urinary tract comes defined as a "ostomy" while the mucosa attached to the skin is called "stoma". The external intestinal derivations can affect the colonic intestinal tract and are defined: Colostomie, whereas for the small intestine: Enterostomies. In case there is instead a urinary derivation they are defined: Ureterostomie. The reasons that lead to the packaging of an intestinal stoma: colic or ileal are many. Regarding intestinal ostomy, they can be traced back to two fundamental situations: in urgency or in election and to three groups of pathology: the traumas, the neoplastic pathology and the benign pathology represented by the latter: from diseases as chronic intestinal inflammation, to complications of diverticulitis and congenital anomalies of the digestive system. Ostomies of the urinary system are instead linked to traumas or neoplasms. In Urgency they are mainly represented by ostomy performed following abdominal trauma or acute facts involving the digestive system that do not allow a direct self repair or from congenital anomaly conditions of the digestive tract that recommend its own temporary defunctionalization. In Election there are to be considered mainly in the course of other surgeries for the purpose of defunctionalizing the digestive system to protect intestinal anastomoses with a high risk of deiscence, especially in neoplastic colorectal surgery. Stomas are also classifiable as temporary and permanent. Temporaries are generally susceptible to recanalization after about two or four months. The definitive are, as the word suggests, permanent. Considering the digestive system, ostomies are classified differently depending on the intestinal tract they affect:

- if they affect the colon in: Cecostomy, Colostomia (right, transverse, left)

- if they involve the ileum in: Ileostomie.

The Cecostomy is packaged in the caecum, on the right iliac of the abdomen. The Colostomy is instead packaged at the level of the colon and based on the part of the intestine which is taken into consideration we can differentiate between: Colostomia on the ascendant or right, on the transverse, on the descendant or left. Instead, the ileostomy represents the cutaneous occlusion of the ileum and may have a prevalent place in the right iliac as well as in the left iliac. If their packaging has provided for the section of the intestinal tract and its biting directly to the skin are called terminals, if instead there was an exteriorization on baguette they are defined as lateral stomas. The urinary ostomy can instead connect the urinary tract to the outside on the skin in the various sections:

- kidney: nephrostomy;

- ureter: ureterostomy;

- bladder: cystostomy.

Considering the intestinal ostomy, the techniques of realization can take place in laparotomy or laparoscopic surgery. For urinary ostomy their realization occurs by direct ultrasound guided puncture (nephrostomy or cystostomy), while ureterostomies are created by laparotomy surgery. Precisely because of its anatomy, the ostomy does not have a sphincter of its own or a vicar able to modulate a pressure effect on the intestinal tract or the urinary tract which is absorbed into the skin able to create an effect of continence, so that they are subject to the impossibility of voluntary controlling what is eliminated and require enterostomal collection facilities.

Keywords : Protective Stoma, Diverting Colostomy, Ileostomy surgical technique,

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Tab. 1 - Types of Ostomies

Intestinal Tract	Types of Ostomies	Types of Stools
Ileum	Ileostomy	Continues, fluid stools
Ciecus	Ciecostomy	Fluid stools
Colon Right	Right Ostomy	Half - Liquid stools
Colon Transverse	Transverse Ostomy	Half - Liquid stools
Colon Descending	Left Ostomy	Loose - stools
Colon Sigmoid	Sigma Ostomy	Loose - stools

D33 PATHOPHYSIOLOGY OF POSTERIOR COMPARTMENT DISORDERS

FILIPPO LA TORRE¹

¹Sapienza Rome University

Constipation is a poly-symptomatic, multi-factorial disorder: 15% to 20% of the population; the women have 2 to 3 times more likely to have constipation than men in terms of prevalence. In order to try to standardize the definition of constipation, it was carried out initially a consensus definition by international experts in 1992 (Roma I criteria), that was updated in 1999 (Roma II criteria) and 2006 (Roma III criteria). The Etiology of Chronic Constipation can be classified into 2 categories: I. Primary constipation (Functional constipation) and II Secondary constipation. Recommendation Criteria For Diagnosis Of Constipation are: a. Anorectal Manometry, b. Balloon expulsion test, c. Defecography, d. Anorectal ultrasound, e. MRI, f. Measurement of the colonic transit time.

Rectal Prolapse is a disease in which the rectum is prolapsed to the anal canal, related to a defect of the pelvic floor. It is classified according to degree: 1) as a complete full thickness rectal prolapse, 2) a mucosal prolapse, 3) an internal or occult rectal prolapse. There are many associated Dysfunction like fecal incontinence (more than 50% of the patients), constipation (fifteen to sixty-five of the patients) or solitary rectal ulcer.

Rectocele is defined as the out-pouching of rectum into the vagina; the rectocele results from a stretching or tear or actual separation of the recto-vaginal fascia. The causes are: childbirth, Improperly healed episiotomy, defects of transverse fascial. There are different classification of Rectocele, more utilized are: a) Location: high, mild and low – rectocele, Baden – Walker system: from 0 to 4 degree, POP – Q system. Particularly specific diagnostic tests for rectocele are considered : Anorectal manometry, Defecography, MRI.

Fecal incontinence is defined as the involuntary loss of stool, liquid or solid, gas and mucus.

It affects 8% to 9% of the population. The main causes of FI can are: low resting and/or low squeeze sphincter pressures (weak IAS ad EAS), weakness of puborectalis muscle, neuropathy, altered anal or rectal sensation, diarrheal conditions, diminished rectal capacity.

After history taking and physical exam for the diagnosis of FI and his clinical evaluation, we have many specific and complementary tests that can define the etiology. Diagnosis: Anorectal Manometry, Anal endosonography Magnetic Resonance Imaging.

Keywords: Disorders, Constipation, Rectocele, Rectal Prolapse, Fecal Incontinence

D34 AUTOLOGOUS ADIPOSE - DERIVED STEM CELL FOR COMPLEX ANAL FISTULA

LAURA CHIMISSO¹, SIMONA ASCANELLI¹,
MARIA GRAZIA SIBILLA¹, FRANCESCO BAGOLINI¹,
FILIPPO AISONI¹, PAOLO CARCOFORO¹, PAOLO ZAMBONI¹

¹S. Anna University Hospital of Ferrara

Aim: The aim of this study was to evaluate the safety and efficacy of stem cells from adipose tissue (ASCs) for the treatment of complex anal fistulas. The primary end-point was to evaluate the percentage of wound healing at 7 days in patients treated with surgery and ASCs compared to patients who received only surgery.

Materials and methods: From September 2016 to July 2019, 100 patients aged between 18 and 80 years affected by complex anal fistulas, were se-

lected and randomized into two groups: group 1 consisting of 50 patients who underwent fistulectomy, fistulotomy or VAAFT (Video Assisted Anal Fistula Treatment) with closure of the internal orifice; group 2, 50 patients undergoing to injection of ASCs into the perianal wound closed by first intention and in correspondence with the internal orifice after its closure. The ASCs were obtained in according to Coleman technique. A proctological examination was carried out at 1 week, 2 weeks, 3 weeks, 1 month, 2 months, 3 months, 6 months and one year after the procedure. Pelvic MRI was performed before the operation and 6 months after surgery in all patients.

Results: In the group treated with ASCs, a shorter healing time and less post-operative pain were found with a similar recurrence rate in the two groups.

Conclusions: The use of ASCs considerably improves wound healing and post-operative pain and it is a safe and low-cost treatment.

Keywords : stem cell, anal fistula

D35 PERINEAL STAPLED PROLAPSE RESECTION (PSP) FOR EXTERNAL RECTAL PROLAPSE: SYSTEMATIC REVIEW OF A NEW SURGICAL OPTION

VALENTINA TESTA¹, ROBERTO PASSERA², SYLVIE MOCHET¹,
PAOLO TONELLO³, ALBERTO AREZZO¹,
MARCO ETTORE ALLAIX¹, LORENZO CAUSARANO⁴,
MARIO MORINO¹, MASSIMILIANO MISTRANGELO¹

¹Surgical Science Department, Centre of Minimal Invasive Surgery, University of Turin, Città Della Salute e Della Scienza Hospital, Italy.

²Nuclear Medicine Department, University of Turin, Città Della Salute e Della Scienza, Turin, Italy.

³Department of Surgery, Koelliker Hospital, Turin Italy

⁴Biblioteca Federata di Medicina “Ferdinando Rossi”

Purpose: Perineal Stapled Prolapse Resection (PSP) is a surgical technique proposed for external rectal prolapse. Initial enthusiasm accompanied first positive results. More recent reports oppose those results reporting a large incidence of recurrences.

Methods: We performed a systematic review of the Literature.

Results: 18 papers were found in international Literature. Considering duplication of the data only 12 papers including 276 patients were analysed. Intraoperative complications occurred in 15 patients (7.8%): 2 conversions to an Altemeier due to a staple line disruption probably related to a rather thick prolapsed; 1 conversion to ventral rectopexy due to the impossibility to pull out the prolapse; 5 additional handsuture for an insufficient stapled line and the remaining were possible small intestine adherence. Mean operative time was 39.89 minutes. Postoperative major complications were observed in 8 patients (2.9%): 1 pelvis sepsis, 1 suture dehiscence treated with a colostomy and 6 bleedings (surgical haemostasis). Minor complications occurred in 37 patients (13.4%). No mortality was observed. Median hospital stay was 5 days. During follow up of 23 months 56 patients recurred (20.3%). Functional results the studies are not comparable. **Conclusions.** PSP is a new surgical procedure for external rectal prolapse. Early functional results are good in many series, even if recent papers report a high incidence of recurrence. A total 20.3% of recurrence is high considering the costs of the procedure. The cost of the procedure is high and it is tenable only if hospital stay and the incidence of recurrence could be reduced respect other procedures.

Keywords: Rectal Prolapse, Perineal Approach, Perineal Stapled Prolapse Resection, Contour Transtar.

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D36 SYSTEMATIC REVIEW OF PERINEAL SURGICAL PROCEDURES FOR COMPLETE EXTERNAL RECTAL PROLAPSE

ANTONIO SALZANO¹, VALENTINA TESTA¹, SYLVIE MOCHET¹, PAOLA SALUSSO¹, MARIO MORINO¹, MASSIMILIANO MISTRANGELO¹
¹*Surgical Science Department, University of Turin, Città Della Salute e Della Scienza Hospital, Italy.*

Aim. Many surgical techniques in the treatment of external complete rectal prolapse have been proposed.

Methods. We performed a systematic review using Pubmed, Embase and Cochrane central register of controlled trials. Key words were Rectal Prolapse (rectal OR rectum OR perineal OR anus OR anal) AND prolaps), Delorme, Altemeier (OR rectosigmoidectomy* OR proctosigmoidectomy), PSP (perineal AND stapled), Perineal Prolapse Stapled Resection, PSP and PSPR regarding PSP in the treatment of complete external rectal prolapsed. Duplicated data and abstracts were excluded from the study. Number of patients, intraoperative and postoperative results, complications and recurrences were evaluated.

Results. 54 papers were included in the review. Delorme was the safer surgical procedure, with lower postoperative complications, that are less serious than Altemeier. PSP was the technique with major incidence of complications and recurrences. Delorme's has more recurrences than Altemeier. In all techniques we observed better incontinence and constipation scores than before surgery

Conclusions. The systematic review of the Literature is not able to choose the best perineal surgical technique for complete external rectal prolapse. Altemeier's procedure is better for young patients considering a lower incidence of recurrences. Delorme's was better in patients with major associated diseases. PSP is yet under evaluation

Keywords: Rectal Prolapse, Perineal Approach, Perineal Stapled Prolapse Resection, Contour Transtar, Delorme, Altemeier

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D37 THE MANAGEMENT OF STOMAL COMPLICATIONS OF BOWEL: PROLAPSE, GRANULOMAS, HEMORRHAGES

DIANA ROVERE¹
¹*AULSS2 Marca Trevigiana*

The creation of the intestinal or urinary ostomy is actually a surgical procedure performed for a wide range of gastrointestinal disorder or urinary tract problem. Despite the frequency with which they are performed the stomal or peristomal complications persist; in addition to creating morbidity for the ostomy person, they have health costs.

There are several types of stomal or peristomal complications; we will focus only about hemorrhage, prolapse and stomal granulomas.

These common complications will be described and we will explain how to avoid or prevent them.

A good surgeon and a good enterostomist have to give to the ostomate person the chance to live his life in the best possible way even with the stoma.

Keywords: Ostomy, Prolapse, Hemorrhages, Granuloma, Complications

D38 PERISTOMAL LESIONS: WHAT TO SAY ABOUT THE FISTULA?

ALICE GASPARI¹
¹*Oncology Institute of Veneto (Iov)*

Peristomal skin problems are a common problem and can have a negative impact on the quality of life of the patient. For which reasons it's essential to help the ostomatus to maintain good skin health. In particular, patients with Crohn's disease and inflammation of the colon can lead to peristomal complications such as fistula formation, abscesses, stoma retraction or streaks.

Specifically parastomal fistulas, will be treated as complex and can cause significant morbidity and mortality. Since the parastomal fistula often occurs in patients in poor condition, a multimodal approach is needed. The lack of prospective randomized studies to compare the different methods, makes it impossible to show any evidence of superiority, but the combined application seems reasonable for a tailored treatment.

During the project work, we will discuss causes, clinical manifestations, prevention, medical and surgical treatments. More than a new 3D technique for imaging of intrastomal hernia that can be used to integrate traditional methods in detecting stoma-related fistula and that advanced silicone technology has transformed wound treatment and perineated skin.

Keywords: Crohn's disease; Ostomy complications; Parastomal hernia, Stomal prolapse, Colostomy; Ileostomy; Complications; Ostomy; Stoma care; Skin care; Supportive care; Stoma; Stoma education; Surgical stoma; Fistula; Parastomal Fistula; Enterocutaneous fistula.

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E - PAIN

E1 FASCIAL MANIPULATION: INTRODUCTION TO THE METHOD AND TREATMENT OF CHRONIC PELVIC PAIN

ELENA FRIGHETTO¹
¹*Physiotherapist, Private Clinic Selvazzano, Padova Italy, elenafrighetto.riabilitazione@gmail.com*

The International Association for the Study of Pain defines pain as "a sensory and emotional experience associated with actual or potential tissue damage". When pelvic pain does not have an obvious origin from a superficial lesion, it comes from the inner subcutaneous spaces related to the pelvis, and therefore can originate from the organs of the genital apparatus, from the lower urinary or intestinal tracts, from the neuro-muscular, vascular and osteoligamentous structures located there. Recently the implications of the fascia in the possible cause of chronic pelvic pain have been evaluated: in fact, it has been shown that the deep fascia is very innervated and a lack of flow or densification of the loose connective tissue between the fascial layers can change the contractile capacity of the muscles. The concept of fascial continuity completes the "Integral Theory" according to which a normal functioning of the pelvic organs is in harmony with a balance of tensions of the pelvic floor. In the absence of organic problems it is necessary to release the densifications and fascial restrictions to recreate a good balance of forces. Fascial Manipulation® is a manual therapy that allows the evaluations and treatment of such densification and consists in the se-

lection of specific points of the fascia and their treatment in order to resolve the painful components of fascial structures.

Keywords: Fascial Manipulation, Pelvic pain, Manual therapy.

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E2

THE USE OF A SPECIFIC TRAINING IN THE TREATMENT FOR THE VAGINISMUS WITH HYPNOTIC PSYCHOTHERAPY

ANDREA AMBROSETTI¹

¹Studio Ambrosetti Dott Andrea ²Centro Italiano Studio e Sviluppo Psicoterapia a Breve Termine, Padua, Italy ³Associazione Italiana Sessuologia e Psicologia Applicata . Milan, Italy

Introduction: Aim of this research is to deepen the psychological and psychotropic aspects in order to help the specialist who chooses the medical hypnosis for treating vaginismus. The work has been developed in 3 steps: 1) research of the literature 2) choice of theoretical bases 3) selection of subjects with vaginismus. After the selection phase the patient were invited to hypnotic trainings of 8 sessions where ad-hoc training for the treatment of vaginismus were presented, and were taught a self-hypnotic technic to be performed at home daily.

Theoretical basis: this study is based on: 1) two biopsychosocial models: a) an integrated approach to human behaviour developed by Engel (the multidimensional ideas of health, places the patient at the centre of a wide system influenced by multiple dimension: psychological, social, and domestic aspects b) the Benini's model (biopsychosocial relations) 2) hypnosis in the medical area 3) the treatment of pain 4) the studies on body's movement and emotions 5) the Freud's theory 6) the MacLean's model ("Triune Brain"); the latter is based on the division of the human brain into three distinct regions: Reptilian brain, Paleomammalian or Emotional Brain and Neomammalian or Rational Brain. Reptilian Brain corresponds to the brain stem, including the rachid bulb and the midbrain. It governs primarily innate instincts and reflexes. The consequence of this evolution is that the human being, having three regions within the brain, also has three different mental levels called: biological, psychological and social minds. Corresponding anxieties are associated to each mind; in the case of the reptilian mind, the biological anxieties arouse signs of danger that may jeopardize the hopes of survival and inform the mind that the integrity and health of the body are at risk, or that in the surrounding environment there are threats that could harm the safety of the individual.

Patients Sample: 16 women with vaginismus of II and III degree, since > 6 months. Works in hypnosis: At the subject is asked to visualize herself as a chimp and perform tasks like moving freely within a fabulous environment, living anger, running freely and jumping, taking care of her body, jumping on a big red ball, relating to the herd of other chimpanzees.

Results: After 8 sessions, the subjects reported a significant change in their defenses, reduced thoughts, improved self-esteem, self-assertion capacity, reduction of postural pain, a marked reduction in vaginismus with a passage from difficult-painful penetration to penetration with bearable pain or without any pain.

Conclusions: With hypnotherapy and the chimpanzee training, the biological brain can be activated and helped in using adaptive and no more rigid defenses, finding a valid aid in dysfunctions such as vaginismus. The aspects of anxiety (anxiety of fragmentation and persecution) decrease by lowering ego defenses with a strong reduction of anxiety.

Keywords: hypnosis, vaginismus, psychotherapy, somatic symptoms, female sexual dysfunctions, sexual pain disorders, muscular contraction of the pelvic floor during sexual penetration

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E3

ACUPUNCTURE WITH BIOFEEDBACK PRACTICE AND RESULT TO PELVIC FLOOR PAIN: A FIVE YEARS REPORT FROM CHINA CENTER

SHUQING DING¹

¹Nanjing Municipal Hospital of Chinese Medicine Affiliated Nanjing University of Chinese Medicine

Objective: To observe the short and long-term efficacy of acupuncture combined with biofeedback in the treatment of functional anorectal pain (FARP).

Methods: Clinical data of 142 patients who met the functional gastrointestinal disorders and functional anorectal pain based on criteria of Rome III undergoing acupuncture with biofeedback therapy from August 2010 to November 2015 in retrospectively analyzed. Telephone and outpatient clinic recheck were used as standard follow-up. The clinical effect of short-term and long-term data collected from the diseased- based database was evaluated with visual analogue pain scale (VAS)(0-10 points), short form health survey questionnaire (SF-36)(0-148 points) and Glazer's surface electromyography (sEMG). The overall satisfaction and effectiveness (VAS was >30%) were evaluated at the end of treatment (short-term) and during follow-up (long-term).

Results: The effective follow-up data were obtained from 71.1%(101/142) of patients and the median follow-up time was 28 (3-67) months. The VAS of 101 cases was 6.09 ±1.78, 1.99±1.89 and 3.55± 2.60 before treatment, at the end of treatment and during follow-up respectively. Though the VAS during follow-up was higher than that at the end of treatment, but still significantly lower than that before treatment (P<0.05). The SF-36 score of 31 patients was 82.0 ±16.9, 94.0 ± 15.1 and 88.1 ± 15.3 before treatment, at the end of treatment and during follow-up respectively (P<0.05). The effective rates were 85.9% (122/142) at the end of treatment and 75.2% (76/101) during follow-up, and the patients satisfactory rates were 92.3% (131/142) and 84.2 (85/101), respectively. The differences of the surface electromyography (sEMG) between pre-treatment and on follow-up, in pre-baseline process, the mean amplitude (AVG) on follow-up was lower than pre-treatment (P<0.01), in flick contraction process, in tonic contraction and Endurance processes, the peak AVG was higher (P<0.01), the Coefficient of Variance (CV) was lower (P<0.01) compared follow up to pre-treatment.

Conclusion: Acupuncture with biofeedback has significant short-term and long-term efficacy in treating functional anorectal pain, and its degree of satisfaction is high. It can reduce the pelvic floor muscle over activity and function. The existing defecation and urinary dysfunction symptoms improved simultaneously after treatment. It is promising and needs further study.

Keywords: Functional anorectal pain, Acupuncture, Biofeedback, Treatment outcomes

E4

THE ROLE OF PHYSICIAN GUIDED TRIGGER POINT SELF-MASSAGE FOR MYOFASCIAL PELVIC PAIN RELEASE

ZEMIN LI¹, YANG SHEN², JINGYUN XU²

¹School of Medicine, Southeast University, Nanjing China

²Department of Obstetrics and Gynecology, Zhongda Hospital, School of Medicine, Southeast University, Nanjing China

Purpose: To report the effects of the transcutaneous electrical nerve stimulation (TENS) combined with physician guided trigger point self-massage on myofascial pelvic pain (MFPP) by comparing pre- and posttreatment average pelvic pain scores, sEMG variables, and patient self-reported pelvic pain.

Study design: Prospectively analyzed 27 patients diagnosed with MFPP in

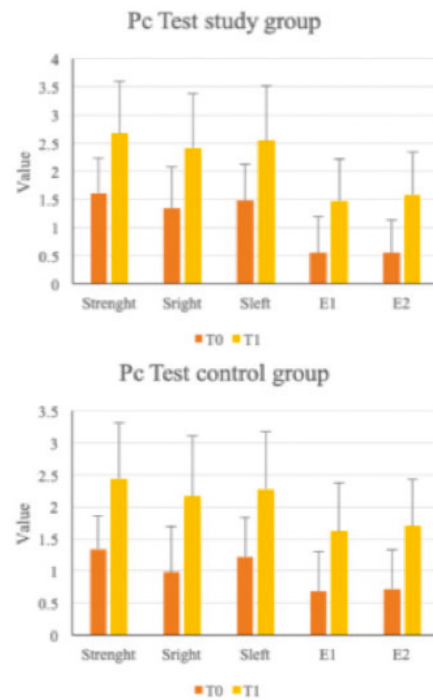
Zhongda Hospital Affiliated to Southeastern University (China) from September 2018 to February 2019. Participants received TENs every other day and physician guided self-massage twice a day for 2 consecutive weeks. Pain was assessed using a numeric rating scale (NRS) and the Patient Global Impression of Improvement (PGI-I) scale. Future treatment was determined based on the percentage improvement in pain obtained from palpation of each pelvic floor muscle after 2 weeks of treatment. Additional myofascial trigger points (MTrP) injections were required if the treatment was ineffective (an increase, no change or improvement of less than 50% in pain) , TENs and self-massage were still needed for 2 weeks unless it was cured (improvement in pain between 80% and 100%). Assessments were performed at baseline, 2, 4 and 12 weeks after treatment. The primary outcome was the average change in pelvic pain on palpation of each pelvic floor muscle pre- and posttreatment. Secondary outcomes included changes in measurement indexes of the Glazer pelvic floor muscle surface electromyography (sEMG) at 4, 12 weeks. Self-reported improvement in pain was also recorded.

Results: The NRS and sEMG variables were significantly improved post-treatment compared with pre-treatment ($p < 0.05$). In addition, 63% of the patients received myofascial injection 2 weeks post-treatment, and there were statistically significant differences in the effectiveness of treatment in the comparison of 4 weeks vs. 2 weeks, 12 weeks vs. 4 weeks post-treatment ($p < 0.05$), however, two cases were ineffective 12 weeks post-treatment. Using the PGI-I index, participants needed on average 3.8 weeks (SD 1.6) to report being at least “ better”.

Conclusions: Transcutaneous electrical nerve stimulation combined with physician guided trigger point self-massage can be effective in treating women with myofascial pelvic pain.

Keywords: Transcutaneous electrical nerve stimulation; physician guided trigger point self-massage; myofascial pelvic pain

Fig.1



E5 TREATMENT OF POSTPARTUM VAGINAL RELAXING WITH DYSPAREUNIA: PFMT VS VIBRATING VAGINAL CONE

FEDERICO VILLANI²

¹University of Pisa (IT)

²University of West Vasile Goldis, Arad (RO)

Purpose: After childbirth, women may present pelvic floor disorder which may promote comorbidities and have an adverse effect on quality of life (QoL). During the puerperium, Pelvic Floor Muscle Training (PFMT) can treat and prevent these conditions and increase QoL [2]. For increased efficacy, PFMT can be combined with vaginal devices such as cones [3]. The aim of the study was to compare the efficacy of the vaginal cone (VC) versus traditional PFMT in the treatment of women presenting perineal muscle relaxing and sexual dysfunction after delivery.

Materials and methods: The VC had a novel physiological shape within which a steel ball was loosely-contained in order to generate vibrations against the cavity walls during exercises [Fig. 1]. A randomised comparative study was conducted on 57 women during puerperium; the study group used the VC while the control practiced traditional PFMT. A gynaecological examination was conducted 3(T0) and 6(T1) months after delivery.

Results: Pc test showed a significant increase in every parameter for both groups (T0-T1) [Fig. 1]. However, a FSFI questionnaire revealed significant improvements in satisfaction and pain in the study group vs the control [Fig. 2]. Furthermore, the study group exhibited a 95.4% decrease in dyspareunia compared to a 37.5% in the control group (T0-T1) [Fig. 3]. Numerous additional gynaecological benefits were observed when using the VC versus traditional PFMT and 87.5% of women were satisfied with its comfort and ease of use.

Conclusion: VC should be considered an efficacious device to treat perineal relaxing and associated sexual disorders during the puerperium.

Keywords: Postpartum, puerperium, vaginal cones, PFMT, dyspareunia

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Fig.2

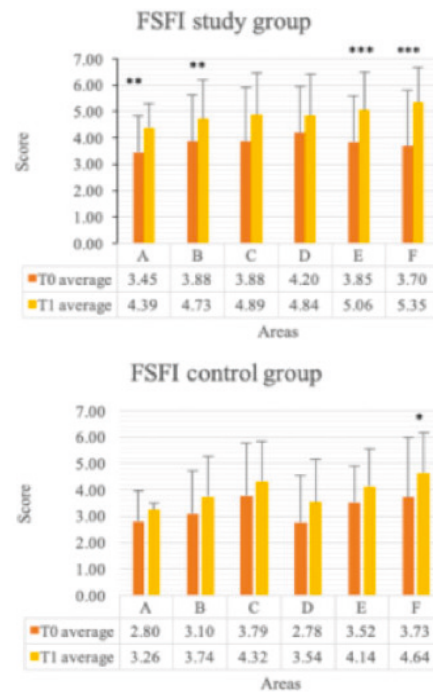
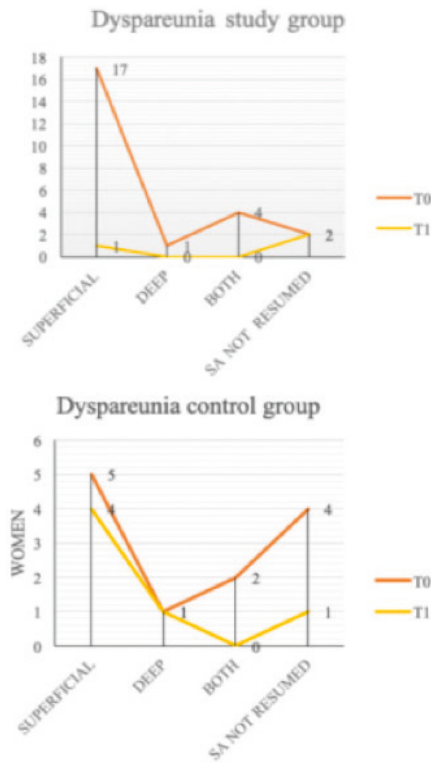


Fig.3



E6 PROLAPSE-INDUCED PELVIC PAIN: CURE BY SURGICAL PROLAPSE REPAIR

BERNHARD LIEDL¹, M. ABENHARDT¹, N. GRIGORYAN¹,
A. YASSOURIDIS¹, M. WITCZAK¹
¹Urologische Klinik Planegg, Germany

H. Martius (1946) and P. Petros (1996) recognized first that pelvic organ prolapse (POP) can induce pain which can be cured by prolapse repair. We analyzed the data of the Propel study (ClinicalTrials.gov Identifier: NCT00638235) to gain evidence for cure of pain symptoms by surgical prolapse repair.

In this prospective multicentre study 277 women with POP stage 2-4 underwent surgical repair with either Elevate anterior/apical or Elevate posterior/apical. They were asked to answer 46 questions of the Pelvic Floor Disorder Inventory (PFDI) questionnaire for degree of bother: no, yes-not at all, somewhat, moderate, quite a bit.

After 1 year 257 and after 2 years 185 women answered the questionnaire.

Question	Rel. Frequency Preoperatively	Rel. Frequency 1 year postop.	Rel. Frequency 2 year postop.	P
Pressure lower abdomen	32,9 %	6,8 %	5,4 %	< 0,001
Pain lower abdomen genital area	22,8 %	5,6 %	2,7 %	< 0,001
Heaviness or dullness in the pelvic area	27,1 %	4,8 %	2,7 %	< 0,001
Pelvic discomfort when standing or physically active	40,8 %	6,0 %	4,9 %	< 0,001
Pain in lower back most days	37,9 %	19,4 %	17,8 %	< 0,001
Abdominal or lower back pain when straining for any reason	24,6 %	12,1 %	10,3 %	< 0,001

Prevalence rates of moderate and quite a bit pain symptoms pre-, 1 and 2 year postop.

All symptoms of different locations could be cured significantly in high percentages. Analysis of subgroups showed that women after Elevate anterior/apical as well as those after Elevate posterior/apical, that women with 2. Stage POP and those with 3-4 stage POP suffered pain of different locations which all could be cured in similar percentages.

New onset of pain after surgery was very seldom.

It can be concluded that pain of different locations can be cured by

mesh-supported pelvic floor surgery. A possible explanation for surgically curable pain symptoms is stretching of nerve fibers of the pelvic plexus (sympathetic nerves from Th 12 – L2), parasympathetic nerves from S2-S4, autonomic nerves from S2 – S4).

Keywords: Prolapse-induced pelvic pain: Cure by surgical prolapse repair

Fig.1 -

		Main POPQ-symptomatic																	
		Overactive bladder				bladder emptying disorders				Fecal incontinence				Defecation disorders				PAIN	
		PFDI 17	PFDI 18	PFDI 19	PFDI 20	PFDI 11	PFDI 13	PFDI 14	PFDI 37	PFDI 38	PFDI 39	PFDI 40	PFDI 8	PFDI 9	PFDI 10	PFDI 45	PFDI 7	PFDI 41	PFDI 46
C o o r d i n a t e	Overactive Bladder	PFDI 17																	
		PFDI 18																	
		PFDI 19																	
		PFDI 27																	
B l a d d e r	Bladder emptying disorders	PFDI 11																	
		PFDI 12																	
		PFDI 13																	
		PFDI 14																	
F e c a l	Fecal incontinence	PFDI 37																	
		PFDI 38																	
		PFDI 39																	
		PFDI 40																	
D e f e c a t i o n	Defecation disorders	PFDI 8																	
		PFDI 9																	
		PFDI 10																	
		PFDI 45																	
P A I N	PAIN	PFDI 7																	
		PFDI 41																	
		PFDI 46																	

E7 MAPPING CHRONIC UROGENITAL PAIN

MAREK JANTOS¹
¹Behavioural Medicine Institute of Australia, Adelaide, Australia; Dept. human Anatomy, Medical University of Lublin, Poland

The term ‘pain mapping,’ refers to the process of localizing pain and establishing an objective relationship between pain source and symptoms experienced by patients. A systematic examination of points within the urogenital area, noting severity of pain, its temporal characteristics and spatial distribution has provided new insights into the role of peripheral mechanisms in chronic urogenital pain. The presentation summarizes the findings of a pain mapping study based on 320 volunteers consisting of controls and clients presenting with painful bladder and vulvar pain syndrome symptoms.

Keywords: (Key-Note Lecture) Mapping Chronic Urogenital Pain

E8 PELVIC OUTLET SYNDROME: A POSTURAL LOOK AT PUDENDAL NERVE PAIN LEADS TO SUCCESSFUL TREATMENT

DANIELA HELENA JURISIC¹, DANTE BROGLIA²,
IVANO COLOMBO

¹Active Integrative Medicine Associates

²Ospedale Città di Pavia, Dipartimento di Radiologia

Purpose: Nonsurgical pudendal neuropathic pain treatment usually targets either endopelvic trigger points or the peripheral nerve itself in Alcock’s canal, with little attention to numerous posturally driven impingements which could compress this nerve throughout its long course. One specific area is the pelvic outlet, specifically the sciatic foramen, where the pudendal nerve along with the artery and vein, encounters the internal obturator muscle. The pelvic MRI of our patients showed impingement of the pudendal nerve soon after its departure from the sacral plexus, specifically in this location. On clinical physical exam, our patients also showed poor pelvic mobility, tight external rotators of the femur and contracture of the posterior diaphragm insertions. The recent literature concerning pelvic pain patients repeatedly recommends increased accuracy of diagnosis through complete physical examination(1) Yet, there is little attention given to the possible musculoskeletal and vascular components of pudendal nerve irritation. The thoracic outlet and the pelvic outlet have significant anatomical analogies. Since thoracic outlet symptoms have been seen to benefit significantly from a postural noninvasive manual medicine approach, (2) (3) we aimed to verify that a posturally-based treatment could be equally beneficial in the anatomically analogous pelvic outlet.

Material and method: 32 patients with dysesthesia in pudendal distribution were studied. Pudendal neuropathy was confirmed by EMG, symptomatic for 4-12 years. Ages: 25-60. 19 female, 13 male. Initial MRI confirmed muscle-nerve or venous – nerve impingement in the sciatic foramen in all patients.(4)(5) The same radiologist read all MRI. Treatment included 6-10 postural and 3-6 osteopathic sessions, each once weekly, to diminish sciatic foramen obstruction, based on individualized physiatric postural analysis and prescription, integrated with MRI findings. Treatment focused on osteopathic manipulations and Mezieres-based postural therapy to relax the

tension in the diaphragm, primary pelvic stabilizers, induce greater pelvic basculation, and decrease venous engorgement viscerally. No endopelvic trigger point treatments or injections, or alterations in oral medication were performed during this treatment period. The same physiatrist, posturologist and osteopath treated all patients. Symptom reduction was measured by VAS and sitting tolerance, at initial and final therapy, 12-16 weeks later.

Results: Initial VAS: 6-10. Final VAS: 0-4. No patients had increased pain. Average pre-treatment sitting tolerance: 10'-60'. Post-treatment: 60'-360'.

Conclusions: Pudendal nerve pain is often severe and functionally disabling. Alcock canal injections and endopelvic massage give variable success. In reviewing the comparative anatomy between thoracic outlet and pelvic outlet, we find that both outlets contain muscles, fascia, and bone, as well as the nervous and vascular structures which traverse them, and which can be the cause of compression. In addition, both these outlet areas are posturally important. In the thoracic outlet, studies evaluating treatment of posture and successful reduction of neurogenic symptoms exist, while in the pelvic outlet, where there is even greater postural stress due to its weight bearing during deambulation, we have found no comparative literature on postural treatments. The positive results from this study describe the benefits of not only detailed and complete, but also thoughtfully comparative clinical examination of the whole patient, not only their pelvic region. We hope that they also pave the way for greater attention to postural issues as causal to pelvic pain and more specific and integrated use of postural therapies as treatment.

Keywords: pelvic outlet, pudendal nerve, thoracic outlet, manual therapy, posturology

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E9

THE USE OF EMG AS DIAGNOSTIC TOOL IN PELVIC PAIN

JEROEN VOORHAM¹

¹Leiden University Medical Center, Leiden, The Netherlands
²Novuqare Pelvic Health Bv, Rosmalen, The Netherlands

Chronic pelvic pain is defined as persistent painful condition which lasts for at least six months under umbilicus. Diagnosis and management of chronic pelvic pain is a great challenge for physicians and patients. Therapies range from conservative management to medication and (major) surgery of the pelvic floor. This presentation will give a short overview of muscle physiology, discuss how the root cause of pain can be diagnosed, what you assess (and don't assess) with, amongst others, digital palpation and EMG, how to the outcomes of the assessments relate to chronic pelvic pain and how this will guide you in optimizing the therapy tailored to the patient.

Keywords: Pelvic Floor Disorders, Pelvic Pain, Electromyography

F - MISCELLANEOUS

F1

UPDATE ON CERVICAL HPV RELATED DISEASES

CARLO ANTONIO LIVERANI¹, ALESSANDRO BULFONI¹

¹Foundation Irccs Humanitas San Pio X

There is no cure currently available for HPV infections, although excisional treatment of high grade cervical lesions often leads to a clinical and virological cure. Effective control measures of HPV related diseases rely on prevention, at four different levels.

Primary prevention is realized through vaccines targeting the most frequent HPV types: negative attitudes towards HPV vaccination and high costs are the main obstacles.

The aim of secondary prevention is to detect precancerous changes before they develop into invasive cancer, while tertiary prevention involves actual treatment of high grade lesions: routine screening programs are based on

cervical cytology and HPV DNA testing, while treatment is essentially surgical, through tailored excisional procedures.

Quaternary prevention comprehends those actions aimed to mitigate or avoid unnecessary or excessive medical interventions, and may well be addressed in avoiding surgical interventions for low grade intraepithelial neoplasias. Though some gynecologists commonly recommend treatment for low grade disease, and also women tend to prefer active management if not properly informed, harms arising from unnecessary treatments, increased costs, work overload for second-level health services, and induced psychosocial distress, are causing on-going problems.

Prevention efforts of cervical HPV related diseases should concentrate in: (1) enhancing primary prevention through vaccination of all eligible subjects, (2) achieving high levels of adherence to routine screening programs, (3) treating precancerous lesions, and (4) monitoring current guidelines recommendations to avoid overtreatment.

Novel research projects should be designed to study the delicate mechanisms of immune response to HPV.

Keywords: Papillomavirus, HPV, Cancer, Screening, Prevention

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F2

WHEN AND HOW TO TREAT AND FOLLOW-UP H-SIL LESIONS: THE POINT OF VIEW OF THE GYNECOLOGIST

CARLO ANTONIO LIVERANI¹

¹Foundation Irccs Humanitas San Pio X

High grade cervical lesions (CIN 2 and CIN 3) need to be treated, regardless of the HPV DNA test results, in order to prevent invasive cancer. Certainly not all CIN 2 or CIN 3 lesions will always progress to cervical cancer. About 30-50% of untreated CIN 2 and 30% of CIN 3 regress spontaneously, while approximately 5% of CIN 2 and 14-31% of CIN3 progress to invasive cancer (although studies are rarely free from bias and the results must be interpreted with caution). Factors associated with higher regression rates of untreated H-SILs are young age (< 25 years) and pregnancy. Immune system disorders, HIV, and smoking, are associated with lesions more likely to progress.

For the adequate treatment of H-SILs, the entire lesion and transformation zone must be removed. Excisional methods such as loop electrosurgical excision procedure (LEEP) or LASER excision, need to be strictly performed under colposcopic guidance, in order to be able to remove the interested area. Hysterectomy should never be considered as a primary treatment for squamous intraepithelial lesions, in the absence of a specific indication.

In certain circumstances, it is possible to adopt a "wait and see" approach, wherever patient compliance is ensured: young age (< 25 years), pregnancy, CIN 2 lesions p16 negative, reassuring colposcopic patterns with entirely visible squamo-columnar junction.

Keywords: Cervical intraepithelial neoplasia, HSIL, CIN, colposcopy, cervical cancer

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F3 AGE BAROMETER - SOCIO-ECONOMIC REALITIES BEHIND AGEING-RELATED POLICIES

ELENA WEBER¹
¹Age Platform Europe

If you want to understand which was the goal of AGE Platform Europe when we decided to work on AGE Barometer, you must think of all older people in Europe: the main goal of AGE Barometer is to reveal the complexity of socio-economic realities of older people in our continent. AGE Barometer is a way of monitoring the commitment of European Union as well as of the member states (or at least 10 of them: Austria, Belgium, Cyprus, France, Germany, Italy, Malta, the Netherlands, Spain, Sweden and the United Kingdom), to a. European Pillar of Social Rights, b. United Nations Madrid International Plan of Action on Ageing (MIPAA) and c. Sustainable Development Goals (SDGs). For 2019 AGE Barometer is focussing on different subjects: gender equality, support to find employment, age-friendly workplaces, work-life balance, fight against poverty, social exclusion and loneliness and adequate pensions. AGE Barometer draws on a wealth of reliable statistical data and the qualitative assessment by AGE members from a group of countries representative of the diversity among EU member states. In its quantitative cross-country assessment, AGE Barometer also reveals the inadequacy of some statistics commonly used to describe the situation of older persons: very old people, such as the 75+ are often taken as one block while this age span covers very different situations and many statistics stop collecting data about persons aged 80+. The overall priorities are different: the two priorities we can focus on regarding the thematic of continence disorders is the protection of the right to live and to age in dignity through adequate person-centred health and long-term care accessible to all and the guarantee to healthy lives and the promotion of well-being for all ages. We can remember also that strong gender inequalities persist in the domain of health: while women have a life expectancy which is longer than for men, their healthy life expectancy is about equal, meaning that women spend a longer time of their lives with a disease or disability. Therefore, women are more exposed to problems and age restrictions in accessing health care. On the other side age-friendly environments and workplaces are widely recognized as key factors to support healthy ageing: adapting workplaces means more than finding 'reasonable accommodation' to older workers when they have developed a disability or health condition.

Keywords: Age Barometer - Socio-economic realities behind ageing-related policies

F4 THE PELVIC FLOOR FUNCTIONAL RESULTS AFTER PIVER III HYSTERECTOMY IN CERVICAL CANCER PATIENTS

XIULI SUN¹, JIANLIU WANG¹, LONGING WU²
¹Department of Obstetrics and Gynecology, Peking University People's Hospital, Beijing, China
²Cancer Hospital Chinese Academy of Medical Sciences, Beijing, China

Purpose: To evaluate the quality of life (QoL) and pelvic organ function of cervical cancer patients after Piver III hysterectomy and detect the related risk factors.

Materials and methods: This is a multicenter, cross-sectional observation cohort study (NCT 02492542). Cervical cancer patients underwent Piver III hysterectomy were consecutively recruited from nine hospitals in Beijing between June 2013 and June 2018. Pelvic organ function was assessed by pelvic floor distress inventory short form-20 (PFDI-20), International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF) and Overactive Bladder symptom score (OABSS), Sexual function was measured with the Prolapse and Incontinence Sexual Function Questionnaire (PISQ-12).

Results: Totally 689 patients were included. The mean age was 48.5 ± 9.5 years. The mean follow-up time was 29±16 months. 60.4% patients underwent laparoscopic surgery. 42.5% patients received assistant radiotherapy/chemotherapy. The incidence of stress urinary incontinence, urinary incomplete emptying, and constipation were 32.7%, 27.7%, and 28.4%, respectively. Only 204 of the 689 patients completed the PISQ-12 questionnaire and claim a deteriorated sexual quality (14.42±6.70). Chemo-radiotherapy (OR=20.490, 95%CI: 0.050-441.766) and laparoscopy (OR=298.641, 95%CI: 18.216-489.613) were independent risk factors for lower urinary tract symptoms (LUTS) and severe defecation symptoms. A high BMI (OR=1.011, 95%CI: 1.002-1.021) also contributed to bowel syn-

drome. Chemo-radiotherapy was risk factor for sexual dysfunction, with radiotherapy exerting a stronger effect than chemotherapy.

Conclusion: Pelvic floor dysfunction is common after radical hysterectomy for cervical cancer which lead a poor QoL. Specific interventions should focus on issues to improve QoL.

Keywords : cervical cancer, pelvic floor function, quality of life

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Acknowledgments : This study was supported by the Beijing Municipal Science & Technology Commission (grant number, D151100001915003). The authors thank all study centers for their great efforts.

F5 HOW MUCH THE CLINICAL EVALUATION UNDERESTIMATES THE POST-DELIVERY PERINEAL TEAR

DANILO CAFARO¹, ALESSANDRO STURIALE¹, FELIPE CELEDON PORZIO¹, BERNARDINA FABIANI¹, CLAUDIA MENCONI¹, ELISABETTA DONATI¹, TOMMASO SIMNCINI¹, GABRIELE NALDINI¹

¹Proctology And Pelvic Floor Clinical Centre - AouP - Pisa

Purpose: Vaginal delivery represents a crucial moment for the occurrence of evident or occult pelvic floor injuries, which immediately or over time may lead to the development of pelvic floor disorders. The aim of the study is to evaluate the agreement rate of pelvic floor injury staging between the diagnosis made by clinical obstetric-gynecological examination and transanal/transvaginal 3D ultrasound.

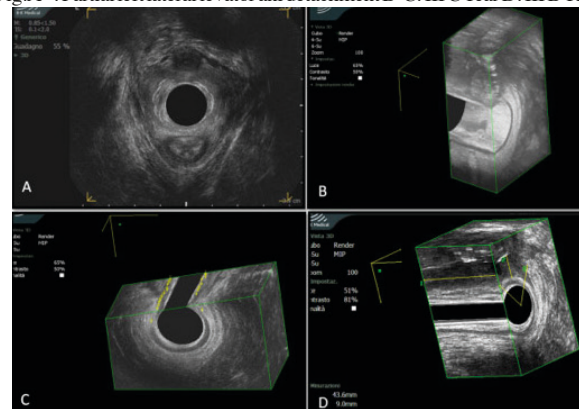
Materials and Methods: From January to April 2019 all the patients with perineal tears after vaginal delivery undergoing to the obstetric rehabilitation, were sent to Proctology and Pelvic Floor Clinical Center. A transanal/transvaginal 3D ultrasound was performed by trained surgeons using a 2058 B&K Medical probe. The ultrasound examination was used to classify the degree of perineal tear according to Sultan Classification, to determine the sphincter damage according to the Starck Classification and also to assess the damage to the Levator Ani muscle. The agreement rate between the clinical and ultrasound diagnosis was evaluated too.

Results: Forty patients underwent transanal/transvaginal 3D ultrasound. 16 patients classified as II degree by clinical examination after the ultrasound were reclassified as III degree (25% A, 31.2% B and 49.8% C). 24 patients classified as III A degree by clinical examination, after the ultrasound 58.3% were reclassified as III B degree and 41.7% as III C degree. Starck scoring system and all the results are reported in Table 1. Moreover, the transvaginal ultrasound showed a partial detachment of the Levator Ani muscle in 13 patients. The underestimation rate was 100%, with 45% of I degree, 37.5% of 2 degrees and 17.5% of 3 degrees.

Conclusions: Transanal/Transvaginal 3D ultrasound performed after vaginal delivery showed a huge underestimation of sphincter damage, also detecting occult lesions of the Levator Ani. An early and accurate diagnosis of obstetric trauma leads to a quick and adequate treatment plan.

Keywords: Perineal tear, Transanal Ultrasound, transvaginal ultrasound,

Fig.A - : Partial left lateral levator ani detachment B-C: IIIC Tear D: IIIB Tear



Tab.1 - Results

Pre-US	Pre-US	Post-US	Post-US	Starck Scoring System (mean)
Staging	N	Staging	N	
		IIIA	4	9
II	16	IIIB	5	10
		IIIC	7	12
Levator partial avulsion	0	Levator partial avulsion	8	
		IIIA	0	
IIIA	24	IIIB	14	11
		IIIC	10	13
Levator partial avulsion	0	Levator partial avulsion	5	

F6 THE FUNCTIONAL MAGNETIC STIMULATION (TESLACARE): A NEW PELVIC-PERINEAL REHABILITATION BEFORE AND AFTER VAGINAL SURGERY

DANILO DODERO¹, LAURA LOPES², ANNA FULVIO³, MERIGIÒ BELLACICCO³, RAFFAELLO PELLEGRINO⁴

¹Gynecology Department, Clinica Paideia, Rome, Italy; ²Physiatric Rehabilitation Center Reabilia, Genoa, Italy

³Physiotherapy Center Medicalcalò, Bari, Italy; ⁴Physiatric Department, Lecce, Italy

Purpose: There is evidence that in nonsurgical populations, pelvic floor muscle training (PFMT) and lifestyle advice improves symptoms and stage of pelvic organ prolapse (POP).^[1-4] Some women, however, require surgery, after which de novo symptoms can develop or additional surgery is required due to recurrence. Robust evidence is required as to the benefit of perioperative PFMT in the postsurgery reduction of symptoms and POP recurrence. In our study we had use for muscle training Tesla CARE. The aim of this study was to assess the feasibility of and collect pilot data to inform sample size (SS) calculation for a multicentre randomised controlled trial (RCT) of perioperative PFMT following surgical intervention for POP. **Methods:** Fifty-seven participants were recruited and randomised to a treatment group (six pre and ten postoperative PFMT sessions with Tesla CARE) or a control group (usual care). These new therapy exercises all the muscles of the pelvic floor to rebuild strength and endurance, reestablishing bladder control. The patients is sit fully clothed in a comfortable chair for 20 minutes. The primary outcome measure was the Pelvic Organ Prolapse Symptom Score (POP-SS) at 12 months; secondary outcome measures included measurement of prolapse, the pelvic floor and questionnaires relating to urinary and bowel incontinence. All outcomes were measured at 0, 6 and 12 months.

Results: Information on recruitment, retention and appropriateness of outcome measures for a definitive trial was gathered, and data enabled us to undertake an SS calculation. When compared with the control group ($n=29$), benefits to the intervention group ($n=28$) were observed in terms of fewer prolapse symptoms at 12 months [mean difference 3.94; 95 % confidence interval (CI) 1.35–6.75; $t=3.24$, $p=0.006$]; however, these results must be viewed with caution due to possible selection bias. It also seems that patients present a faster and less painful recovery after surgery than before.

Conclusion: With modifications to design identified in this pilot study, a multicentre RCT is feasible.

Keywords: Pelvic Rehabilitation Perineal Rehabilitation, Functional Magnetic Stimulation, Vaginal Surgery

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F7 USEFUL PARAMETERS TO IDENTIFY PATIENTS WITH PELVIC FLOOR DISORDERS AMENABLE TO PELVIC FLOOR REHABILITATION

LUIGI BRUSCIANO¹, CLAUDIO GAMBARELLA², GIORGIA GUALTIERI¹, GIANMATTIA TERRACCIANO¹, GIANMATTIA DEL GENIO¹, SALVATORE TOLONE¹, FRANCESCO SAVERIO LUCIDO¹, LUDOVICO DOCIMO¹

¹*Xi Division of General, Mini-invasive And Obesity Surgery- Master of Coloproctology and Master of Pelvi-perineal Rehabilitation. University of Study of Campania "Luigi Vanvitelli" Naples, Italy*

²*Xi Division of General, Mini-invasive and Obesity Surgery; Medical, Clinical and Experimental Sciences Phd Student, Department of Cardiothoracic Sciences University of Study of Campania "Luigi Vanvitelli" Naples, Italy*

Background: Only few studies referring about the use of an encoded diagnostic tool based on physiatriac assessment in constipated or incontinent patients have been conducted. The field of properly setting pelviperineal rehabilitation's indication is still blurred, often leading to a wrong selection process of patients who could really benefit from such treatment.

Methods: Five hundred among constipated and incontinent patients were submitted in our referral centre to a diagnostic standard protocol combining clinic-physiatric evaluation to proctologic and instrumental assessment over the last decade (anorectal manometry, anal US and dynamic defaecography). [1] The clinic physiatriac evaluation consisted in evaluating different parameters as puborectalis contraction, pubococcygeal test, perineal defence reflex, muscular synergies, postural examination. Breathing dynamic was investigated leading to the differentiation of the two variants of diaphragmatic or costal breathing. That is, because in order to properly select those patients who would benefit the most from rehabilitation treatment, a global evaluation needs to be carried out. The intention was to evaluate through the abovementioned clinic-physiatric evaluation, whether certain parameters were found altered or not, and those patients with altered parameters to pelviperineal rehabilitation in order to fix them, not merely to cure their symptoms. Patients were then offered pelvic floor rehabilitation (thoraco-abdominoperineal muscle coordination training, biofeedback, electrical stimulation and volumetric rehabilitation) as a resolute tool able to fix the abovementioned parameters and restore symmetry and equilibrium not only to the pelvic floor itself, but also to its interaction with the diaphragm, the spinal cord and the abdominal wall. [2]

Results: Of the 500 selected patients, 290 were affected by fecal incontinence while 310 were constipated. Our diagnostic protocol led to recognize muscular synergies in 72% of constipated patients, while 68% of them resulted positive to costal breathing. Moreover 67% of the constipated patients had postural hyperlordosis. Among the incontinent patients, the most frequently altered parameters were the devoid of perineal defense reflex (64%), postural alteration as an hyperlordosis attitude was reckoned in 57% of these patients, 84% of them were affected by agonist muscular synergies and antagonist muscular synergies were registered in 74% of incontinent patients.

CONCLUSIONS This diagnostic protocol might improve the selection of patients with defaecatory disorders amenable for rehabilitation treatment.

Keywords: Pelviperineal rehabilitation, fecal incontinence, constipation, clinical parameters

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Acknowledgments : N/A

F8 THE "ICEBERG-PHENOMENON" IN PELVIC FLOOR DYSFUNCTIONS

BERNHARD LIEDL¹, K. TUCHENHAGEN¹, G. BRÜWER¹, A. YASSOURIDIS¹

¹*Urologische Klinik Planegg*

Pescatori (2006) for rectocele, Gold and Goeschen (2016) for pelvic pain described that other urogynecological symptoms often are coexisting and not considered enough, so that a main symptom is evident and other symptoms are below the sea level as parts of an iceberg.

We analyzed the data of the Propel-Study (ClinicalTrials.gov Identifier: NCT00638235) for coexisting symptoms. 277 women could be ana-

lyzed who answered preoperatively the Pelvic Floor Disorder Inventory (PFDI) questionnaire of different symptoms according to the bother: no, yes-not at all, somewhat, moderate, quite a bit.

Figure: A mosaic showing the intensity of baseline co-occurrence between various symptom-groups in a population of **n=277 female patients suffering from a POP-Q stage ≥ 2** .

Co-occurrence was calculated in the subpopulations of the patients showing in the baseline **'moderate or quite a bit'**- severity for the symptoms of a certain group (main or primary POPQ symptomatic), while the symptoms of the other groups were considered as secondary. The prevalence rates of 'moderate or quite a bit'-severity of the secondary symptoms in the mentioned subpopulations were used for the selection of the mosaic-stones of the figure.

The creation of the mosaic-figure was based on four mosaic stones colored according to the following co-occurrence prevalence rates :

- co-occurrence rate > 70 % (color: deep blue),
- co-occurrence rate between 50% and 70 % (color: blue),
- co-occurrence rate between 30% and 50% (color: light blue) and
- co-occurrence rate less than 30% (color=yellow).

The figure shows frequencies of women with moderate and quite a bit bother by the symptom. If the main symptom was bladder emptying disorders, fecal incontinence, defecation disorders or pain, overactive bladder symptoms co-occurred in more than 50 %, whereas the other symptoms occurred mainly in less than 50 % or less than 30 %.

So co-occurrence of symptoms in women with symptomatic pelvic organ prolapse is a usual phenomenon, even moderate and quite a bit symptoms of different disorders co-occur. This grouping of symptoms can be explained by the Integral theory which states that the main muscles within the pelvic floor have integral functions for emptying and closing of bladder and bowel. Laxities/looseness of the supporting ligaments cause dysfunctions of bladder, bowel and pain.

Keywords: The "Iceberg-phenomenon" in pelvic floor dysfunctions

F9 SNS UNDER THE GUIDANCE OF 3D TECHNIQUE

ZHE CUI¹

¹Dept. Gastrointestinal Surgery, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, China

Aim To test the feasibility of a novel three-dimensional (3D) printed guiding device for electrode implantation of sacral neuromodulation (SNS).

Method A 3D printed guiding device for electrode implantation was customized to patients' anatomy of the sacral region. Liquid photopolymer was selected as the printing material. The details of the device designation and prototype building are described.

Results With the help of the device, the test needle for stimulation was placed in the target sacral foramen successfully at the first attempt of puncture. The time to implant a tined SNM electrode was less than 20 min and no complications were observed.

Conclusion The customized 3D printed guiding device for implantation of SNS is a promising instrument that facilitates a precise and quick implantation of the electrode into the target sacral foramen.

Keywords : Neuromodulation, 3D print, implantation

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F10 NEW FRONTIERS IN MRI OF PELVIC FLOOR DISORDERS

VITTORIO LUIGI PILONI¹, NOEMI LUCCHETTI¹, TOMMASO FELICI¹, JESSICA ANDREATINI¹, FEDERICA PIGNALOSA¹

¹Diagnostic Imaging Centre "diagnostica Marche" - Ancona, Italy

Purpose - To update the ongoing contribution of MRI in clinical practice and research

Materials and methods - The imaging series of over two-thousand pelvic MR examinations carried out between 2012 and 2019 were reviewed for evidence of (1) levator ani (LA) hiatus enlargement on evacuation; (2) endopelvic fascia and ligaments; (3) pudendal nerve injury. Clues for examination included organ prolapse and evacuation dysfunctions (57.6%), chronic pelvic pain (28.2%), and fistula-in-ano disease (13.4%). There was a 3:1 female-to-male ratio (mean age 51.5 ± 3 yr, range 18-72 yr; and 40.1 ± 2 yr, range 24-62 yr, respectively).

Results - (1) Regardless of gender, the LA hiatus enlargement could be classified as normal (area ≤ 20 cm²), 1st-2nd degree prolapse (20-40 cm²), and 3rd -4th degree prolapse (≥40 cm²). In no case the actual size on evacuation correlated with that at rest ($y=0.37x + 19.27$; $R^2=0.14$); however, an abnormal enlargement under the effect of intra-abdominal forces could be anticipated in case of anatomical defects of muscles and ligaments (tear, discontinuity, thinning, fibrofatty replacement). (2) The endopelvic fascia appears as H-shaped hypointense structure anchoring the pelvic organs to the lateral side wall; from it, a number of linear condensations arise which provide attachment to the various structures and help subdivision of pelvic space into compartments. (3) Pudendal nerve injury (hyperintensity, distortion) can be documented on specific pulse sequences.

Conclusions -MRI is promising for research in biomechanics, anatomic compartment subdivision and pudendal neuropathy.

Keywords: pelvic floor dysfunctions, magnetic resonance imaging, biomechanics, endopelvic fascia, pudendal nerve neuropathy

References: 1 DeLancey JOL, Hurd WW. Size of the urogenital hiatus in the levator ani muscles in normal women and women with pelvic organ prolapse. *Obstet & Gynecol.* 1998; 91: 364-368 2 Maglinte DDT, Kelvin FM, Fitzgerald K, et al. Association of compartment defects in pelvic floor dysfunction. *Am J Roentgen.* 1999;172: 439-444 3 Comiter CV, Vasavada SP, Barbaric ZL, et al. Grading pelvic prolapse and pelvic floor relaxation using dynamic magnetic resonance imaging. *Urology.* 1999; 54: 454-457. 4 Tunn, R, DeLancey JOL, Quint EE. Visibility of pelvic organ support system structures in magnetic resonance images without an endovaginal coil. *Am J Obst Gyn.* 2001; 184: 1156-1163 5 Piloni V, Bergamasco M, Bregolin F, et al. MR imaging of the pudendal nerve : a one-year experience on an outpatient basis. *Pelvipereineology.* 2014; 33:54-59. 6 Piloni V, Bergamasco, M, Melara G, et al. The clinical value of magnetic resonance defecography in males with obstructed defecation syndrome. *Tech Coloproct.* 2018; 22: 179-190 7 Piloni V, Bergamasco M, Chiapperin A, et al Quantification of levator ani hiatus enlargement by magnetic resonance imaging in males and females with pelvic organ prolapse. *J of Vis Exp (JOVE)* 2019;146: 1-9

Fig.1 - Lack of correlation between hiatus size at rest and on evacuation in nulliparous and parous women either by vaginal delivery or cesarean section [7]

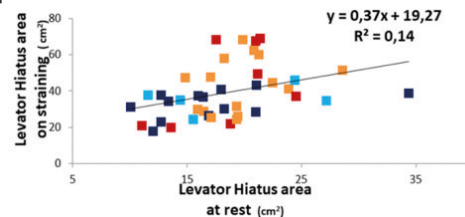


Fig.2 - T2-weighted coronal oblique MR image showing the H-shaped endopelvic fascia in a 48-year-old man endopelvic fascia in 48-year-old man

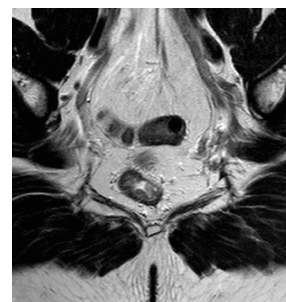


Fig.3 - Forty-year-old man with LUTs and pain at sexual intercourse: Axial oblique T2-weighted double IR, Fat Sat and Dark Blood pulse sequence MR image showing hyperintensity signal from the right pudendal nerve along the Alcock's canal tenity of right pudendal nerve



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F11 UP TO DATE ON VULVAR AND VAGINAL HPV RELATED DISEASES

LEONARDO MICHELETTI¹, MARIO PRETI¹,
FEDERICA BARBERIS¹, ADRIANO MARRAZZU¹
¹University of Torino, Hospital S. Anna

The knowledge of HPV biology and pathogenesis has clearly identified two basic pathways: low-risk HPV infection produces transient benign lesions, while high-risk HPV infection is responsible for precancerous lesions. These precancers are histologically and cytologically indistinguishable regardless of the gender of the individual or the site of the lesion. Despite these two well-established patterns of viral-epithelial interaction, disparate terminologies still exist due to miscommunication among the different specialties focused on specific body sites.

The vulva and vagina belong to the *lower-anogenital tract*, an *anatomobiologic unit* grouping different organs lined by the same squamous mucosal or cutaneous epithelium that represents the HPV action-field.

In 2012 The Lower Anogenital Squamous Terminology (LAST) has been approved with the aim to standardize the HPV-associated squamous intraepithelial lesions (SIL) across all lower-anogenital tract sites and should be used in any pathology report. According to the LAST, LG (Low Grade)-SIL (formerly mild dysplasia or intraepithelial neoplasia-IN grade 1) identifies an HPV transient benign infection, while HG (High Grade)-SIL (formerly moderate-severe dysplasia, carcinoma in situ or IN grade 2-3) defines a precancerous lesion.

All the vaginal and vulvar HPV related diseases are well identified with the LAST. However in the vulva an HPV-independent precancerous lesion, defined as Differentiated Vulvar Intraepithelial Neoplasia (DVIN) generally arising in the context of lichen sclerosus or planus, also exists. DVIN has a greater invasive potential and a shorter time between diagnosis and occurrence of invasion. Therefore this distinction regarding the vulva should be kept into consideration when managing a vulvar precancerous lesion.

Keywords : HPV, vulva, vagina,

References : T M Darragh, et al. The Lower Anogenital Squamous Terminology Standardization Project for HPV-associated Lesions: Background and Consensus Recommendations From the College of American Pathologists and the American Society for Colposcopy and Cervical Pathology. *Int J Gynecol Pathol.* 2013;32:76-115

F12 ACUPUNCTURE'S ROLE IN SACRAL NERVE MODULATION ERA: PROS AND CONS?

YIJIANG DING⁰
⁰Nanjing Municipal Hospital of Chinese Med

Objective Update the electroacupuncture sacral nerve stimulation and InterStim[®] sacral nerve modulation clinical status, to clarify the role of acupuncture in pelvic floor dysfunction treatment in the nerve stimulation era. **Methods** Observe the electroacupuncture sacral nerve stimulation in technique and clinical results in pelvic floor relaxation syndrome and pelvic floor dyssynergic defecation from China Nanjing Pelvic Floor Center 10-year data retrospectively. Update and compare the technique of acupuncture and InterStim[®] sacral nerve modulation implanting and efficacy in chronic constipation. Individually, as well as the cost-effectiveness and the patient expectation etc. From the pelvic floor center clinical status, sacral

nerve stimulation is promising but underestimated the need in complicated pelvic floor dysfunction postoperatively, including urinary with defecation dysfunction after spinal surgery, radical hysterectomy and anterior rectal resection in urology gynecology and colorectal field. It is necessary to further study from multidisciplinary cooperation, technique and skill training, patient promotion, data collecting homogeneity integrated.

Results Electroacupuncture sacral nerve stimulation technique is safe and effective in pelvic floor dysfunction. It complement with the InterStim[®] sacral nerve modulation.

Conclusion Electroacupuncture sacral nerve stimulation is an alternative for pelvic floor dysfunction patients, less invasive, less expensive, and more flexible.

Keywords : electroacupuncture; sacral nerve stimulation; pelvic floor dysfunction

F13 IMPACT OF EDUCATION AND REHABILITATION IN PREGNANCY ON POSTPARTUM DYSFUNCTIONS: WHEN, HOW AND WHY

A. CAVALIERI*, F. VILLANI*, B. MAZZUCCATO, S. SPAINI,
G. BARTFAI*, F. GAJ*
Istitution: 1-3 Topp AIUG (IT) , 2-5 University of West Vasile Goldis, Arad (RO), 4-6 University La Sapienza Roma (IT)

Purpose Literature reports that 21% of women reported dyspareunia at 6 months postpartum, 24% refers to stress urinary incontinence, overactive bladder syndrome, pelvic organ prolapse and fecal incontinence

These are the first results of an ongoing multicentrum study to investigate the effects about a correctly preparation to birth to prevent perineal trauma.

Materials and methods The sample is represented by a experimental group of 56 primiparous women from 25 to 48 years old, to them different methods of childbirth preparation have been presented to allow a informed/awared choose. The proposed methods include Perineal Massage (PM) or training with Perineal Baloon (PB); both methods have been illustrated in ambulatory setting with specific instructions. The control group is composed by women who didn't apply any preparation method of perineal preparation to birth.

Results From a sample of 56 women, 27% have applied the PB, 32% the PM and 41% haven't used any preventive treatment. The analysis shows that PB decreases episiotomy incidence and prevents perineal tears, 86% of them didn't receive episiotomy and only 26% presented pelvic floor dysfunctions as dyspareunia, urinary incontinence and vaginal prolapse. About perineal massage, the rate of perineal tears and dysfunctions increase appreciably.

Conclusions From the study emerged that an adequate perineal preparation during pregnancy decreases the risk of perineal trauma, it also reduces episiotomy treatment and pelvic floor dysfunctions after vaginal birth.

Authors believe that the study can be a initial step to develop an applicative method also in-hospital setting to reduce iatrogenic damages due to vaginal birth.

Keywords: Episiotomy, vaginal birth, perineal massage, perineal balloon, PFMT

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F14 LOCAL TESTOSTERONE THERAPY AND FRACTIONAL CO2 LASER FOR URETHRAL SYNDROME AFTER TREATMENT FOR GSM

NORIKO NINOMIYA¹, RYOKO NAKAMURA²,
YUKI SEKIGUSHI², TATSUYA NAKATANI³
¹Women's Clinic Luna Shinsibashi ²Women's Clinic Luna Nextstage ³Osaka City University

Genitourinary syndrome of menopause (GSM) is a new terminology for vulvovaginal atrophy from the International Society for the Study of Women's Sexual Health and The North American Menopause Society

in 2014. The vaginal and vulvar surfaces of GSM presents as thin, pale, and dry on examination. It is related to decreased blood flow from loss of estrogen, decreased acidity of the vagina, decreased numbers of lactobacilli and decreased number of surface epithelial cells. Vaginal signs and symptoms of GSM are dryness, dyspareunia, etc. GSM is treated by vulvar moisturizing, lubricants, hormone replacement, and CO₂ fractional laser. Bladder pain syndrome (BPS) also known as interstitial cystitis (IC), is a type of chronic pain that affects the bladder. It is feeling of pain and pressure in the bladder area without having an infection or other clear causes. Symptoms range from mild to severe. The cause of BPS is unknown. Other conditions which can produce similar symptoms include urinary tract infection (UTI), overactive bladder, sexually transmitted infections, endometriosis, etc. There is no reliable treatment method for BPS. Lifestyle changes may include stopping smoking and reducing stress. It is mainly for symptomatic treatment. Procedures may include bladder distention, nerve stimulation, or surgery. Women are affected about five times as often as men. Onset is typically in middle age. There are quite a few patients who are left with urethral syndrome after treatment for GSM and BPS. Urethral syndrome is a condition that affects the urethra. People with urethral syndrome have an inflamed or irritated urethra (as symptomatic bacteriuria). The pathological condition of GSM has been elucidated, it possible that the urinary tract symptoms considered to be related to the vestibular mucosa. And if vestibular mucosa around the urethra presents fragility and irritability, patients could become urethral syndrome. The first urethral syndrome treatment is to apply testosterone ointment (contains 0.1% testosterone) to the topical area. Testosterone external application improves the mucosa of the vestibular area. CO₂ fractional laser irradiation is adopted in the vestibule as the next treatment. On the presentation, we will report investigations of the treatment effect of local testosterone therapy and CO₂ fractional laser for urethral syndrome after treatment for GSM or BPS.

Keywords: CO₂ fractional laser, Genitourinary syndrome of menopause, local testosterone therapy

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F15 HANDS ON SEXUALITY: WHAT ABOUT INTIMACY?

DÉSIRÉE UGUCCIONI DEI BUONDELMONTI¹

¹Ispro, Istituto Per Lo Studio, La Prevenzione, La Rete Oncologica, Florence, Italy

When we talk about the pelvic floor, far too frequently the oldest of taboos still emerge, even when at the doctor's surgery, as sexual images abound everywhere on the media, with "seeing" and "showing" being taken for granted.

However, for patients to feel that they are able to ask any specialist to help them improve the most important aspects of their sexuality, it still seems to fall far outside their expectations. And not just the physical ones, but also their relational, emotional and love aspects.

What then, can we, as rehabilitators, offer to our patients? On what, can we, as specialists, work effectively with our patients? And what level of competence must a rehabilitator possess, in this regard? What kind of professional skills must we develop, in order to become more effective in our work as therapists, both from the perspective of a functional physical outcome as well as an emotional, or affective one?

Can we remind ourselves that our bodies manifest emotions as a result of an ancient neurological expression, and of circulating hormones, which in turn move the glands, the bowels, and the nervous system and, alongside with it, our posture and our body language too, as well as the way we relate to our therapist, our partner, and ourselves?

Can we also remind ourselves that in this century, in which quantum physics has landed on the field of biology and medicine, we can no longer think of body and mind, as well as emotions and movement, as separate?

From this perspective, what can we ask of the rehabilitator, as far as the sexuality field is concerned? And what need the rehabilitator ask him/herself? How can we relate to our patients and their own perception of what intimacy is for them subjectively?

Are we able to comprehend what intimacy may be for our patients, how much they value it, and also how much they wish to cherish it, in order to protect it, or even keep their intimacy a secret?

Before giving any answer, let us try asking ourselves the right questions. And in order to give correct answers that completely meet with our patients needs, we must train physiotherapists that are able to identify all the "pelvipereineal" issues, and the emotional physiology that governs them, from an overall perspective. Having done this first, then we can work alongside

with other specialists, aiming together toward a high quality of the patient's personal and relational life.

From Desmond Morris to Willy Pasini, from Newton to quantum medicine, a comprehensive view of pelvi-perineal and sexual dysfunctions is needed, and which the physiotherapist him/herself feels able to face up to. A comprehensive view lying within the concept of intimacy, which persists in being precious, despite all the cultural and social changes that have occurred throughout the centuries.

Keywords: pelvic floor, rehabilitatin, physiotherapy, sexuality, intimacy, quantum medicine

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F16 HPV RELATED DISEASES AND PREGNANCY

ALESSIO PAGAN

Ginecologia ed Ostetricia Ospedale "Ca Foncello" Treviso, Italy
alessio.pagan@aulss2.veneto.it

Economic and working problems which the current society is affected by, have moved the average age of the first pregnancy around 30-35 years old with an inevitable increase of HPV related disorders found in this period. Nevertheless the main HPV related diseases, that are condylomatosis and pre-neoplastic cervical pathologies, are the same as in non-pregnant women. So pregnancy does not increase cervical cancer, and most authors agree on the fact that the state of pregnancy does not change the natural history of HPV infection; even though it often occurs that genital condylomatosis or the resolution of cervical pre-neoplastic pathology disappear at the end of pregnancy.

It would be desirable for all women who wish to get pregnant to carry out cervical screening (pap-test or high-risk HPV research) as a preconception test. Actually this does not happen routinely and, therefore, it is important to control at the first visit that the pregnant has recently carried out either a cytology or a high-risk HPV research with negative results. In the absence of a recent exam, it should be carried out as soon as possible in order to ensure the best diagnostic procedure at the beginning of the second trimester of the gestation which is the least risky period for any pregnancy complication. Colposcopy in pregnancy remains an indispensable step for the diagnosis of pre-neoplastic and neoplastic cervical lesions, but it is undeniable that, due to physiological changes of the cervix and vagina, we are talking about a "difficult" colposcopy which must be performed by an experienced specialist. The diagnostic process of an abnormal pap-test in pregnancy is the same as the non-pregnant patient's one. However, there is reluctance to perform a cervical biopsy in pregnancy for the fear of uncontrollable bleedings. Data in literature emphasize that this fear is absolutely unjustified. To find or rule out invasive neoplasia is the unique purpose of colposcopic examination in pregnancy differently from non-pregnant women. In case of an histological diagnosis of CIN 1, 2 or 3, literature substantially supports the appropriateness of deferring the treatment in puerperium (6-12 weeks after delivery); controlling the patient by colposcopy every 3 months during pregnancy and repeating the biopsy when the colposcopic image suggests an invasive neoplasia. Hence conisation in pregnancy is recommended only when a micro-invasion is suspected. In this case conisation should be done after the first trimester, but, where possible, before the 20 weeks. What is more, current excisional techniques, allow to minimise potential complications as much as possible. The treatment of frankly invasive carcinoma diagnosed in pregnancy depends on a multiplicity of factors that influence the choices about it. Among them: the extent of the illness (stage) and the volume of the tumor; the gestational age; the desire to have a baby or another delivery; the possible pathology associated with pregnancy; the patient's psychological state; the ethical convictions of the couple. The other large group of HPV-related diseases in pregnancy is represented by genital warts. As it is known, warts are viral lesions due to low-cancer-risk HPV (predominantly 6 and 11) and only rarely sustained by high-cancer-risk HPV (predominantly 16 and 18). As mentioned above, pregnancy does not alter the natural history of the HPV infection; nevertheless, during pregnancy genital warts are more frequent and their spontaneous regression occurs in the puerperium. The decision to treat condylomatosis during pregnancy depends both on the characteristics of the lesions (size and location) and the gestational age of the patient. In principle, it should be borne in mind that condylomatosis does not necessarily require treatment during pregnancy, in fact delivery may be expected and treatment may be

done after 6-8 weeks. Anyway destructive treatment under local anaesthesia (laservaporisation or DTC) is preferable to be carried out within the 34 gestational weeks in order to ensure a complete recovery for the moment of the delivery

F 17 A SQUATTING-BASED RCT BASED ON THE INTEGRAL THEORY PARADIGM CURES CHILD BEDWETTING, BLADDER AND BOWEL DYSFUNCTIONS

ANGEL EDUARDO GARCIA FERNANDEZ¹,
PETER EMANUEL PETROS^{2,3}

¹*Pelvic Floor Integral Institute, Universidad Nacional de Córdoba, Argentina* agarciafernandez200@gmail.com

^{2,3}*Prof. Dr. Peter Emanuel Petros DSc DS PhD MB BS MD FRCOG FRANZCOG* ²*University of NSW Professorial Dept of Surgery, St Vincent's Hospital, Sydney* ³*School of Mechanical and Chemical Engineering, University of Western Australia*

Background: The cause of bedwetting is unknown and there is no known cure.

Aim: To test the Integral Theory's predictions that the ultimate cause of bedwetting is weak muscle/ligaments which cannot tension the organs sufficiently to prevent activation of the micturition reflex.

Methods: RCT 48 children, mean age 7.6 ± 2.5 years; 34 females and 14 males with both nocturnal enuresis and daytime incontinence had squatting-based pelvic floor exercises (PFR) to strengthen these muscles/ligaments against placebo. At 1st review 4 weeks, 12/24 from the treatment group reported total cure of both conditions, with zero effect from placebo group. Placebo arm immediately transferred to PFR and trial carried out to termination at 4 months.

PFR protocol (supervised) 10 squats and 10 bridge exercise morning and evening for 4 months.

Results: Were beyond our expectations. 41/48 children had daytime/nighttime enuresis (85% cured); 32 constipation (92% cured), 9 (19%) soiling (all cured), 15 emptying difficulties with post-void residual urine (all cured).

Pathogenesis: Loose ligaments weaken involuntary pelvic muscles which contract against them; muscles cannot stretch the bladder sufficiently to prevent inappropriate activation of the micturition reflex; this causes daytime wetness and at night, bedwetting.

Cure: Young children are in full collagen creation mode. The muscles exercises stimulate new collagen to strengthen the ligaments to restore muscle strength and continence.

Conclusions: We have presented a new paradigm for management of children with bladder/bowel storage and emptying problems, a major validation of the Integral Theory System. The exercises have zero cost and are available immediately even in the poorest countries.

F18 NSVVR- NON-SURGICAL VULVO - VAGINAL REJUVENATION: COMBO TREATMENTS (FILLERS, RDF, CARBOXYTHERAPY ..)

ELENA FASOLA MD

Microsurgeon

Aigef General Secretary (Italian Association of Aesthetic And Functional Gynaecology)

Aesthetic Gynaecology is a multidisciplinary specialty because it relates Aesthetic and Function. This field is growing fast, in terms of both technical and scientific perspectives.

This is for sure an interesting pathway, as the wellbeing of the vulvo-vaginal area and women's Quality of Life are distinctly correlated. The last years have seen an increasing flow of papers about non-surgical vulvar and vaginal rejuvenation techniques, and attention is dramatically surging for light- and energy-based technologies, such as monochromatic laser radiation and radiofrequencies.

With its low-energy, Dynamic Quadripolar RadioFrequency (DQRF™) system, is the most recent and innovative solution for feminine intimate care. Focused action for vulvar and vaginal treatments, comfortable sessions, safety systems, and the new-born Ultra Pulsed Radioporation (UPR™) technology, able to open aqueous channels and deliver active ingredients. Moreover, it's time for future developments, in terms of new high-tech solutions: the lecturer will discuss new possibilities of treatment using other minimally-invasive technologies, they combined or not to DQRF, as fillers and carboxy-therapy: our goal must be to confirm the link between Aesthet-

tic and Functional, working in a multidisciplinary and open-minded way to improve the woman Quality of Life.

F19 A HAPPY TOILET TO MAKE EASIER AN UNSATISFACTORY OR OBSTRUCTED DEFECATION. PRELIMINARY EVALUATION

ANDREA RAMIN¹, DANIELE FERRARI²

¹*Dept Surgery, Ospedale Piove di Sacco, Padova, Italy* andrea.ramin@aulss6.veneto.it

²*Biologist, Specialist in Complementary Medicine, Melbourne, Australia* dferrari89@gmail.com

Background: The thin jet of water coming from a toilet accessory device has been indicated as a simple and effective stimulus to eliminate annoying faeces residues in the rectum at the end of defecation.

Aim In cases of constipation definable as a form of *obstructed defecation* or characterized by difficulty in completing the expulsion of the faeces, a preliminary study was carried out in order to verify the effectiveness of the method in alleviating this symptom.

Methods 12 subjects who complained of an unsatisfactory defecation in a retentive sense with a fractional expulsion of faeces and an average score of the CCS (Constipation Cleveland Score) of 8/30, were asked to use the IgiJet® device for a month. The device, telescopic and retractable, is placed between the cover and the edge of the toilet. Connected with a 7mm diameter pipe to the tap of a nearby bidet or sink and equipped with a small 3-ways manual diverter, the IgiJet® can emit a thin jet of water whose temperature and intensity can be accurately adjusted. The diverter allows for the modulation of a single water jet, which, not being a spray, is capable of entering the distal rectum through the anal canal (which tends to open to varying degrees over the course of the straining experienced during defecation). In the span of 30-120 seconds, the water jet stimulates the ano-rectal mucosa allowing for the completion of the evacuation in patients who have a form of obstructed or repeated defecation. The patient is advised to start with low jet pressure to avoid puncture pain, as the area is very sensitive.

Results: 8 out of 12 patients, who underwent digital rectal examination before treatment, showed a different degree of dyssynergy: 5 of them were unable to release following straining and 3 presented paradoxical contractions. Out of these 3 patients, only one did not experience improvements following treatment. A total of 11 patients found they had improved defecatory performance with a significant reduction in their CCS from 8 to 4/30 due to a reduction in criteria measuring their "use of enema" and "sense of incomplete defecation". Five complained of initial pain, which was resolved in all cases by changing the intensity of the jet.

Comment: Obstructed defecation is attributed to various causes: dyssynergia, anatomical obstacle (rectocele or occult prolapse), hyposensitivity of the proximal anal canal and/or of the distal rectum. Cases with a sense of incomplete emptying and repeated defecations are quite common. The culture of the "happy toilet" in recent years has found in Japan a fertile ground for the development of toilets that allow the achievement of different aims: better anal hygiene, ecologism for not using toilet paper, and comfort or even pleasure. Almost only in Italy it is customary to equip the private toilets with the bidet where, however, toilet paper is essential. In the East, toilets are being spread with a built-in shower (that can also be used to wash female genitals), a heated seat, a jet of air to dry the washed parts and even, in public toilets, music to prevent the noise of flatulence from disturbing neighbors. The cost of these devices is significant and a small cold water shower next to the toilet cannot compete with the original product. A simple accessory called IgiJet® connects any toilet to the tap of a nearby bidet or sink, and has achieved popularity as it allows for the emission of a thin jet of water, adjustable for temperature and intensity and also improves defecation when it is incomplete. Unlike small or large enemas that act or cause irritation from their use of glycerin, or stimulation by distension of the rectum, with this device the action is only mechanical and targeting the sensitive area of the ano-rectum. Let's not forget that (almost) all mothers know that in the infant anal stimulation with the tip of the thermometer induces defecation when it seems to them too late.

Conclusions: This study has shown that a single thin water jet entering the rectum through the anal canal open when straining, is effective in inducing a complete defecation in cases where the process is incomplete, and is also effective in cases of dyssynergia. Last but not least the IgiJet® also meets the environmental sustainability

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