Clinical audit

Comparison of transobturator sling procedures for genuine stress urinary incontinence in the short to medium term

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Abstract: This report is a retrospective audit that compares the use of 3 different slings to treat stress incontinence using the transobturator approach in the hands of a single surgeon. There is a highly significant reduction in incontinence in all patients undergoing a transoburator sling. There was no difference in the short term and medium outcomes by objective and subjective assessment. The most common complication noted was urgency incontinence.

Key words: Plastination; Stress incontinence; Transobturator; Outcomes; Complications.

INTRODUCTION

The suburethral sling has become the main operation for the surgical management of stress urinary incontinence in women. The transobturator approach for sling placement has gained popularity and the technique and variety of commercially available materials has been well covered in the literature.[1] The effect on quality of life is also well documented.[2] Complications with the use of multifilament mesh in terms of mesh erosion have been reported [3, 4] but the use of monofilament or biological material has significantly decreased this problem. The availability of a variety of materials allows the surgeon a choice.[5] Does it really matter which sling is used? This report is a short to medium term audit of the outcomes of patients who underwent a transobturator sling using a variety of materials but with all operations performed by the same surgeon.

MATERIALS AND METHODS

One hundred and thirty four patients who had genuine stress incontinence diagnosed by urodynamic studies underwent pre and post operative 1 hour pad tests, and ICS QOL questionnaire. A medium term retrospective audit was performed of all patients by telephone or email for subjective review. The transobturator approach was used on all patients and the procedures were performed by the same surgeon between May 2004 and March 2007 using one of the three available slings. All the operations were performed as day stay surgery except when concurrent other gynaecological surgery was required or other risk factors required overnight observation. All procedures were performed under general anaesthesia and all patients had cystoscopy performed after tape placement. The short term follow up on all patients was 6 weeks and the average medium term follow up was 22 months. Three types of sling were used. The Johnson and Johnson TVT Obturator System using polypropylene mesh (n=13), the AMS Monarc™ Transobturator polypropylene mesh (n=57) and the Bard Pelvicol™ Porcine mesh Transobturator placement (n=64). Objective data from the pre and post op pad tests were analysed using PH Stat and the t Test for differences in 2 means. The subjective data was converted to a digital scale and analysed in a similar fashion. All patients received peri-operative antibiotics.

RESULTS

Of the 134 patients with genuine stress urinary incontinence, a Transobturator sling was performed in all using one of three methods as described. Sixteen percent of patients underwent a concurrent other gynaecological procedure as well. These included in order of frequency, pelvic floor repair, hysterectomy and sacrospinous colpopexy. The median age was 56 years (range 35-86, mean 56). The age distribution was similar for all groups. The objective results and the subjective results showed a very high degree of correlation. An assessment of the entire group showed that there was a marked improvement from the pre-operative state to the postoperative one both for the short and medium results and in both objective and subjective scores ($p < .001$, 95% CI). Assessing the results of the three groups separately, the Monarc™ and the Pelvicol™ groups had similar excellent results ($p < .001$, 95% CI). The TVT-Obturator™ also had excellent results but this was a smaller group ($p = .002$, 95% CI). When any one method was compared with another there was found to be no significant difference in any one over the other. The most common short term complication was the de novo appearance of urgency and urgency incontinence. This occurred in 12 patients or 9% of the group. This symptom occurred with equal frequency across the three groups. In all cases the urgency had disappeared or was much better by medium term follow up. There were 5 cases of urinary tract infection post operatively making an overall rate of 3.7%. There were no erosions noted at short term follow up and no symptoms to suggest this as a problem at medium term. Patients did not undergo an examination at the medium term follow up.

DISCUSSION

Transobturator sling placement is a very successful procedure for the treatment of genuine stress urinary incontinence. The short to medium term results using both objective and subjective measures confirms its value in the modern management of stress incontinence. It has a low complication rate and is quick and easy to perform. This retrospective audit includes all cases performed by one surgeon and allows the opportunity to compare three different Transobturator operations. It is clear that the results of the three procedures described above all give the same results when assessed in the short to medium term. From this perspective then it does not matter which procedure is used. They are all equally good. Long term follow up may however show some discriminating features.

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Competing interests: None

EDITORIAL COMMENT

This paper is valuable because it reports the clinical outcomes of a series of all patients referred to and then operated by an experienced pelvic surgeon. We are constantly subjected to opinions regarding the validity of different sling materials and claims by manufacturers or champions of various products. Retrospective review of a group of patients such as this eliminates the bias and variations in surgeon experience that may affect the results of more formal controlled trials involving carefully selected groups of patients.

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Early results of immediate repair of obstetric third-degree tears: 65% are completely asymptomatic despite persistent sphincter defects in 61%. *Hayes J, Shatari T, Toozs-Hobson P et al. Colorectal Dis. 2007;9:332-6.* A total of 121 women who had immediate repair of obstetric third-degree tears underwent interview, anal ultrasonography and anorectal physiology. Residual defects in the sphincters were associated with a significantly higher incidence of abnormal resting and squeeze anal pressures. Anal manometry had no correlation with symptoms. The highest proportion of severe incontinence was in those with internal anal sphincter (IAS) defect alone and when there was a residual IAS and external anal sphincter (EAS) defect. Only 5% with intact sphincters had severe incontinence and only 18% with a residual EAS defect alone had severe incontinence. These results indicate a good outcome following immediate repair of third-degree obstetric tears and emphasize the role of the IAS in continence.

Faecal incontinence in male patients. *Kim T, Chae G, Chung SS et al. Colorectal Dis. 2007 May 10; e pub.* In a total of 404 males the most common prior diagnosis in patients <70 years of age (group A) was perianal sepsis and symptomatic haemorrhoids; in patients >/=70 years (group B) it was prostate cancer, symptomatic haemorrhoids and neurological diseases. The most common prior procedure in group A was restorative proctectomy/proctocolectomy, fistulotomy or haemorrhoidectomy. In group B radiation therapy for prostate cancer and haemorrhoidectomy.

7 – PAIN

Symptoms suggestive of chronic pelvic pain syndrome in an urban population: prevalence and associations with lower urinary tract symptoms and erectile function. *Marszalek M, Wehrberger C, Hochreiter W et al. J Urol. 2007;177:1815-9.* The prevalence of symptoms suggestive of chronic pelvic pain syndrome in a cohort of 1,765 men with a mean age of 46.3 years participating in a health screening project was 2.7% and it revealed no age dependence. Chronic pelvic pain syndrome has a negative impact on erectile function.

The mast cell in interstitial cystitis: role in pathophysiology and pathogenesis. *Sant GR, Kempuraj D, Marchand JE, Theoharides TC. Urology. 2007;69(4 Suppl):S34-40.* Identifying the patients with interstitial cystitis who have mast cell proliferation and activation, enables to address this aspect of disease pathophysiology, and with targeted pharmacotherapy to inhibit mast cell activation and mediator release.

The role of the urinary epithelium in the pathogenesis of interstitial cystitis/prostatitis/urethritis. *Parsons CL. Urology. 2007;69(4 Suppl):S9-S16.* The urothelium plays a pivotal role as a barrier between urine and the underlying bladder. The biologic activity of bladder surface mucus that imparts this barrier function is generated by the highly anionic polysaccharide components (eg, glycosaminoglycans), which are extremely hydrophilic and trap water at the outer layer of the umbrella cell. This trapped water forms a barrier. The result is a highly impermeable urothelium. In interstitial cystitis (IC), disruption of the urothelial barrier may initiate a cascade of events in the bladder, leading to symptoms and disease. Heparinoids can restore the barrier function and treat IC. Groups of patients who have been given a diagnosis of IC, chronic prostatitis, and urethritis have been shown to have IC by virtue of their shared potassium sensitivity. A name such as lower urinary dysfunctional epithelium would incorporate all of these diseases under a single pathophysiologic process.

Bladder defense molecules, urothelial differentiation, urinary biomarkers, and interstitial cystitis. *Hurst RE, Moldwin RM, Mulholland SG. Urology. 2007;69 (4 Suppl):S17-23.* Interstitial cystitis involves an aberrant differentiation program in the bladder urothelium that leads to altered synthesis of several proteoglycans, cell adhesion and tight junction proteins, and bacterial defense molecules such as GP51. These findings lend support to the rationale for glycosaminoglycan replacement therapy.

Effect of test order on sensitivity in vulvodynia. *Reed BD, Sen A, Gracely RH. J Reprod Med. 2007;52:199-206.* The order of testing at vulvar and peripheral sites (thumb) has little impact on the results of pressure-responsive sensitivity testing among women with and without vulvodynia.

Thermal and visceral hypersensitivity in irritable bowel syndrome patients with and without fibromyalgia. *Moshiree B, Price DD, Robinson ME et al. Clin J Pain. 2007;23:323-330.* Irritable bowel syndrome (IBS) is a chronic gastrointestinal disorder with visceral and somatic hyperalgesia, producing a similar effect seen with the central hypersensitivity mechanism in fibromyalgia (FM). FM+IBS patients show greater thermal hypersensitivity compared with IBS patients. However IBS patients exhibit higher pain ratings to rectal distension compared with FM+IBS patients. This data suggests that regions of primary and secondary hyperalgesia are dependent on the primary pain complaint.

Increased colonic pain sensitivity in irritable bowel syndrome is the result of an increased tendency to report pain rather than increased neurosensory sensitivity. *Dorn SD, Palsson OS, Thiwan SI et al. Gut. 2007 May 4; epub.*

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