



Important enterocele after laparoscopic sacrocolpopexy

Diana Elena SOARE, Iulia BUZDUGĂ, Elena GHEORGHE, Astia AXENTI, Ștefania LITEANU,
 Andreea ENACHE, Traian ENACHE

Clinic of Obstetrics and Gynecology, Prof. Dr. Panait Sârbu Obstetrics and Gynecology Hospital, Bucharest, Romania

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ABSTRACT

Laparoscopic sacrocolpopexy is regarded among the preferred methods of treatment for pelvic organ prolapse (POP). While vaginal surgery using mesh for POP treatment is getting more and more controversial, there is a sort of ease that surrounds laparoscopic sacrocolpopexy in terms of complications, which can concern not only the usage of mesh, but also the effect this type of correction has on the pelvic structures. An 80 year old woman presented in our clinic with acute urinary retention. The patient had undergone laparoscopic hysterectomy with vaginal sacrocolpopexy in the USA, 10 years previous to this presentation. The clinical exam revealed a massive enterocele with a grade IV rectocele, alongside an apical mesh erosion of 2/2 cm. Conservative treatment was attempted since the patient had multiple morbidities, but without succes. Surgical correction was then decided with sacrospinous fixation using a small polypropilene tape for the enterocele and a posterior bridge for the rectocele. Immediate postoperative result was satisfactory, but a surgical complication appeared, a ureterovaginal fistula which was conservatively treated in the urological department. While in the literature it is suggested that complications following laparoscopic sacrocolpopexy are rare, they can occur and the consequences may be severe. Reintervention may prove to be difficult and surgical complications can be expected. Considering that conservative treatment failed completely in this case and the trend is to refrain from using polypropilene mesh it is important to ask what would be an appropriate treatment for this kind of defects.

Keywords: Pelvic organ prolapse; mesh; erosion; sacrocolpopexy; complication

INTRODUCTION

Laparoscopic sacrocolpopexy is considered by many the mainstay treatment of pelvic organ prolapse. While there is intense debate concerning the use of polypropilene mesh during transvaginal surgery, the rate of mesh erosion after

laparoscopic sacrocolpopexy is regarded as less frequent.¹ There is a similar view regarding the recurrence and reoperation rate.² Currently, strong evidence is lacking regarding the real frequency of erosion and pelvic organ prolapse recurrence in laparoscopic sacrocolpopexy in comparison with transvaginal mesh surgery.

Address for Correspondence: Traian Enache, Clinic of Obstetrics and Gynecology, Prof. Dr. Panait Sârbu Obstetrics and Gynecology Hospital, Bucharest, Romania

E-mail: dr.traianenache@gmail.com **ORCID ID:** orcid.org/0000-0002-0190-1340

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CASE REPORT

An 80 year old woman presented in our clinic with acute urinary retention, which necessitated catheterization. The patient had multiple morbidities including diabetes mellitus, hypertension and bilateral surgeries for gonarthrosis and coxarthrosis which greatly limited her mobility.

The patient had intense pyuria, which on urine culture proved to be a urinary infection with *Klebsiella* spp. The vaginal exam revealed a massive enterocele and a grade IV rectocele (Figure 1), alongside an apical mesh erosion of 2/2 cm (Figure 2).

After adequate antimicrobial treatment which cured the urinary tract infection, we proceeded with the removal of the eroded mesh (Figure 3) and planned a conservative treatment due to the difficulty given by the limited mobility and morbidities of the patient.



Figure 1. Enterocele and grade IV rectocele



Figure 2. Mesh erosion

Conservative treatment failed after multiple Pessaries of different shapes (cubical, circular) and sizes were tried. Because of the perineal body defect, it could not maintain its position. This left no option but surgical correction.

Three months after the mesh excision, during which the patient administered estrogen transvaginally in order to nourish the vaginal mucosa, we performed the enterocele correction using a polypropilene tape fixed to sacrospinous ligaments and the rectocele correction using a posterior bridge.

The Surgical Procedure

After vesical catheterization and surgical field preparation, the surgery begins with a transverse incision at the level of the posterior vaginal fornix, after hydrodissection performed with a minimal adrenaline dilution. We continue with a digital dissection towards the ischial spines and we identify the sacrospinous ligament bilaterally. The next step is to anchor a non-absorbable, monofilament suture to the both ligaments, using the Viper instrument. At the end of each thread the edges of a polypropilene mesh are inserted (Figure 4). The mesh used is non-absorbable, macroporous, in the form of a rectangular tape. We tailor the size of the tape to each case, in order to use the minimum amount of mesh necessary.

We then move to the posterior compartment. Again, local infiltration of a saline-lidocaine solution eases dissection and diminishes bleeding. We perform an elliptical incision on the posterior vaginal mucosa, which we continue with a submucosal dissection, in order to obtain a mucosal bridge. The dissection is continued laterally until the ischiopubic bone is reached, paying attention not to injure the rectal mucosa lying adjacently (Figure 5).

Dissection is continued upwards, toward the posterior vaginal fornix, and a breach is created between the two dissection planes.

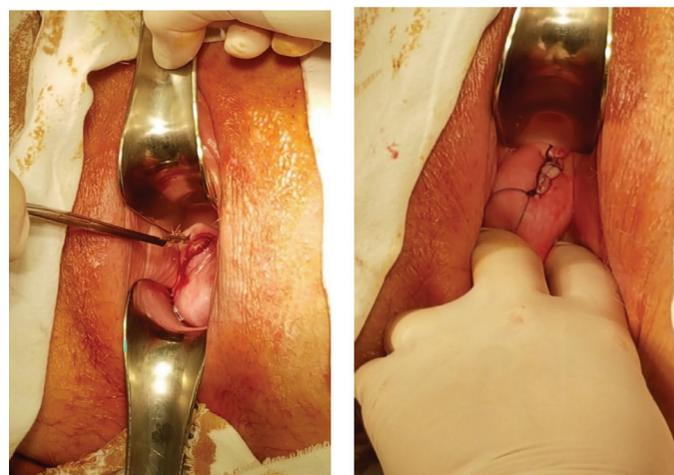


Figure 3. Excision of the eroded mesh

The inferior tip of the mesh tape is grabbed, pulled downwards and fixed to the posterior bridge. An absorbable suture is then passed through the bridge and the pelvic fascia covering the ischiopubic bone, in order to stabilize it. An absorbable thread is also passed through the perineal body in order to reinforce it (Figure 6).

We finalize with knotting the two initial sacrospinous sutures, applying moderate tension, which results in lifting the posterior vaginal fornix and the posterior bridge. The suture surrounding the posterior bridge is tightened and knotted, thus deepening it underneath the vaginal mucosa. The suture within the perineal

body is also tightened and knotted (Figure 7). Finally, the vaginal mucosa is sutured in such a manner that the excessive tissue is reduced. We completed the surgery with a puborectalis muscle plicaturation in order to achieve a smaller himenal ring which would further aid the defect correction (Figure 8). This is done so by a bilateral incision at the himenal ring on each side and dissection towards the puborectalis muscle. An U shaped suture is placed bilaterally and tightened with an anteroposterior shortening of the himenal ring-Delorme procedure.³

Postoperative result was satisfactory, with a good anatomical result (Figure 9).



Figure 4. Mesh tape fixed to the sacrospinous attached sutures

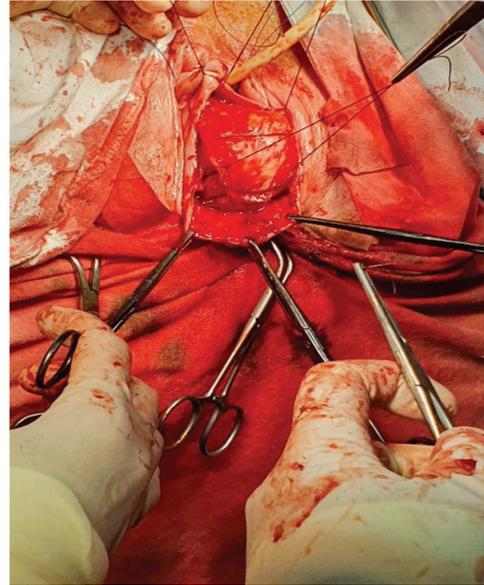


Figure 6. Posterior bridge with its surrounding thread and perineal body thread

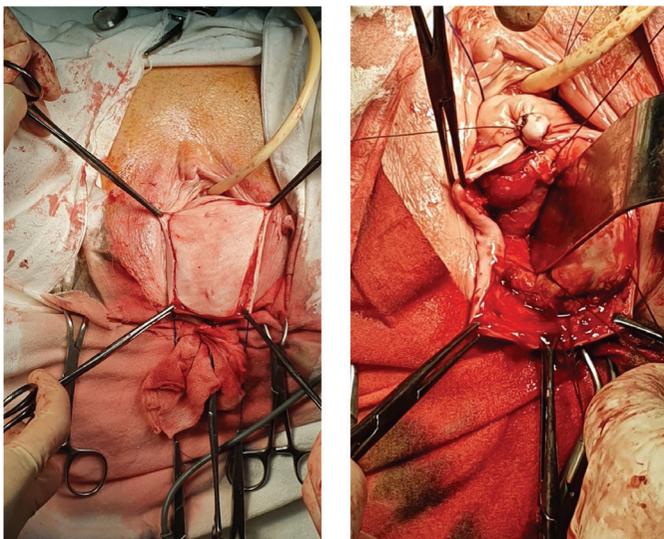


Figure 5. Posterior bridge

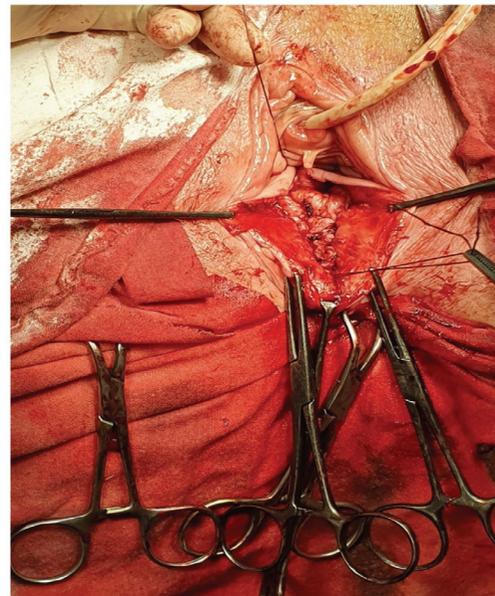


Figure 7. After tying the sacrospinous and bridge sutures



Figure 8. Puborectal plication

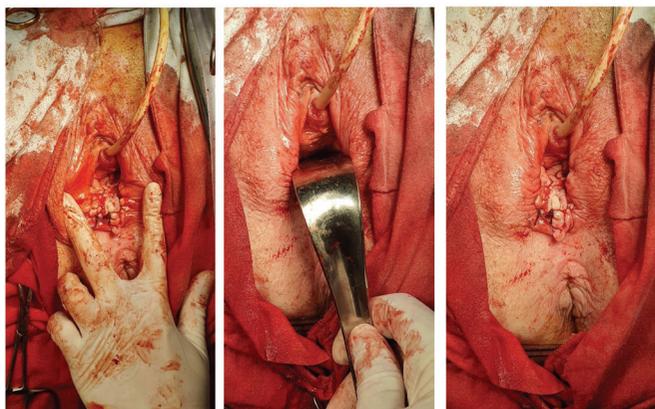


Figure 9. Postoperative result

Although the surgical result was satisfactory, the patient presented at the 6 weeks follow-up with urine exteriorization through the vagina. She was diagnosed with a ureterovaginal fistula, which we assume it accrued during the dissection of the enterocele. Fortunately, it was treated conservatively in the urology department with a bilateral Cook catheter. At the moment, we are waiting for the follow-up visit.

DISCUSSION

We chose this particular surgical technique because we believe it best reproduces the initial anatomical structures which are affected in pelvic organ prolapse. With the two non-absorbable threads anchored to the sacrospinous ligament and the attachment to the polypropylene tape, we tried to reposition the vaginal apex. By pulling the tip of the tape and by connecting it to the posterior bridge we create a new rectovaginal fascia which

is as well connected to the new apical fixation. At the end of the surgery, we corrected the defect as anatomically appropriate as possible.

There are multiple problems raised by this case's evolution. Firstly, it highlights the need for proper studies concerning the pelvic organ prolapse surgeries. While sacrocolpopexy is regarded as a safe and effective treatment for POP, most studies do not have a standardized complication follow-up guideline. Most of the attention is given to complications involving the use of mesh. There are specific complications which are not included in the statistics such as urgency, *de novo* dyspareunia or chronic pelvic pain. While we do not deny the good results of this technique, there are still certain aspects that need to be clarified regarding the new situation and symptomatology given by the modification of the vaginal axis from a horizontal to a more vertical position.⁴ Particular to this case was the severity of the apical and posterior defect which raises the following question: how much does the new direction of the vaginal axis weight in the severity of the recurrence?

Another aspect is the difficulty to operate on a preoperated defect. It is well known that each reintervention poses more and more challenge because of the important scar tissue formation and because of the loss of normal anatomy.^{5,6} While there is no way to eliminate recurrence, we can certainly try to lower its rate by gathering data and by standardizing the current surgical techniques.

Furthermore, one should also take into consideration that important anatomical defects come with a great risk for intraoperative complications. In this case, the great size of the enterocele displaced the ureteral position and led to the ureteral lesion. The patient should be informed of the higher risk which a big defect poses and careful informed consent should be obtained.

Lastly, in the midst of the mesh problem, we should ask ourselves: If total elimination of mesh is intended, what is the best way one would use for the treatment of this kind of anatomical defects? Given that it is a recurrence after laparoscopic sacrocolpopexy it is clear that using the same technique would not be more successful. Concerning the transvaginal techniques using native tissue, can we rely on this patient's tissue to support a defect of this size? Given that every recurrence comes with a greater risk of a next recurrence, what would be the wisest approach in this kind of cases?

In conclusion, such difficult cases raises the questions we need in order to go forward. There is a clear need for randomized studies involving the surgical procedures for pelvic organ prolapse, with standardization and comparative studies between the available

techniques. But a key aspect would be the proper selection of the technique, but most importantly according to the surgical experience. Comorbidities of the patient should be taken into consideration before choosing a path of treatment and patients with big anatomical defects should be informed about potential complications which occur more frequently in these cases.

ETHICS

Informed Consent: The patient should be informed of the higher risk which a big defect poses and careful informed consent should be obtained.

Peer-review: Internally peer-reviewed.

Contributions

Surgical and Medical Practices: A.E., T.E.; Concept: D.E.S., A.A., A.E., T.E.; Design: D.E.S., E.G., A.A.; Data Collection or Processing: I.B., E.G.; Analysis or Interpretation: D.E.S., Ş.L.; Literature Search: D.E.S., I.B., Ş.L.; Writing: D.E.S.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

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