

LAPAROSCOPIC PROMONTOHYSTEROPEXY OF ADVANCED FEMALE PELVIC ORGAN PROLAPSE: THE SIX POINTS TECHNIQUE

L. Pirtea, L. Balulescu, L. Balan, G. Crăciun, P. Bostina, G. Balta, D. Grigoraș

UMF "Victor Babeș" Timișoara

Abstract

Uterine prolapse is a common finding in postmenopausal women, but rarely seen in young women still wishing pregnancy. It is a disorder with specific signs and symptoms that can lead to genital tract dysfunction and diminished quality of life. Laparoscopic promontohysteropexy is a mini-invasive approach for this kind of pathology and apart from possible preservation of the uterus, provides strong apical support, which should be long lasting. It consists of suspending the uterus from the sacral promontory using a bifurcated polypropylene mesh. The objective of this article is to report a case of a 62 years old female patient with a genital prolapse, grade 4, that was successfully treated by laparoscopic promontohysteropexy in our clinic.

Rezumat: Histeropromontopexia laparoscopică a prolapsului avansat de organe pelvine: „Tehnică în șase puncte”

Prolapsul uterin este o patologie frecventă a femeilor în postmenopauză, dar rar întâlnită la femeile tinere care doresc să rămână însărcinate. Este o boală cu semne și simptome specifice care pot conduce la disfuncții de tract genital și diminuează calitatea vieții. Promontohisteropexia laparoscopică este o tehnică minim-invazivă pentru acest tip de patologie și pe lângă posibilitatea de păstrare a uterului, asigură un suport apical puternic pentru o perioadă îndelungată. Această procedură constă în suspendarea uterului la nivelul promontoriului sacral utilizând o meșă din polipropilen. Obiectivul acestui articol este de a prezenta cazul unei paciente de 62 de ani cu prolaps genital, gradul 4, care a fost tratată cu succes, în clinica noastră, prin promontohisteropexie laparoscopică.

Cuvinte cheie: histeropexie, laparoscopie, prolaps uterin, meșă de polipropilenă

Introduction

Pelvic organ prolapse (POP) is characterized by the descent of anterior vaginal wall, posterior vaginal wall, uterus, cervix or the vaginal apex after hysterectomy. POP is a major health issue that affects millions of women all over the world. More over, a woman has an estimated cumulative lifetime risk of 11% to undergo surgery for POP. ^[1]

The etiology of uterine prolapse is multifactorial. It is thought that uterine prolapse is caused by defects in the integrity of uterosacral-cardinal complex^[2]. The epidemiological studies have

noticed that vaginal birth and aging are two major risk factors for uterine prolapse; vaginal birth causes major lesions of the main components of uterine support structures (endopelvic fascia, perineal muscle, levator ani muscle). Chronically elevated intraabdominal pressure is believed to play a role in uterine prolapse pathogenesis (it may appears in obesity, chronic constipation, chronic coughing and repetitive heavy lifting).^[3]

Over the years, surgical repair remains the mainstay of management for uterine prolapse and it

has been performed through abdominal (promontohysteropexy) or vaginal (uterosacropexy) approaches. However, recent advances in laparoscopic and robotic assisted surgery have made it possible for surgeons to use minimally invasive techniques.

Promontohysteropexy, apart from possible preservation of fertility in younger women, provides strong apical support, which should be long lasting. The benefit of this technique include the preservation of the uterus and reinforcing the natural uterine support. In addition, hysteropexy has been shown to preserve the vaginal length, which may have a benefit in sexual function.^[4] The other advantages of laparoscopic surgery are quicker recovery, less pain and better cosmesis.

Case report

We present the case of a 62 years old female patient with genital prolapse, grade 4 uterine prolapse (Baden–Walker System). She had a history of two vaginal births. The patient presented with prolapse symptoms (vaginal lump, vaginal pain), urinary symptoms (stress incontinence, overactive bladder symptoms) and bowel symptoms (constipation, urgency flatus and fecal incontinence). At local examination, during a Valsava maneuver, the presence of a totally descent uterus was noticed. We consider the local condition inadequate for a transvaginal sacropexy. Therefore, the treatment plan was to perform a laparoscopic sacropexy.

Surgical technique

The procedure was conducted under general anesthesia with the woman positioned supine and in semilithotomy; the bladder was catheterized and a uterine manipulator was inserted. A pneumoperitoneum was created and 4 laparoscopic ports were placed (umbilical, suprapubic and two lateral ports).

To create an adequate surgical field, the sigmoid colon was retracted and attached to the abdominal wall. The ureters were identified bilaterally

and at the level of sacral promontory the posterior peritoneum was incised with the bipolar grasper medial to the right ureter and extended inferiorly along the right lateral space of the rectum. The anterior longitudinal ligament was carefully dissected.

We used two bifurcated polypropylene monofilament macropore non-absorbable mesh; one mesh was used to suspend the posterior vaginal wall from the levator ani muscle and the second was to suspend the uterus from the sacral promontorium. The vesico-uterine peritoneum was incised and the bladder dissected distally for 2-3 cm. Each broad ligament at the level of the cervico-uterine junction was opened through the avascular area. The short and the long arms of the mesh were sutured to the anterior cervix with two non-absorbable polyester 2.0 sutures; to the posterior cervix, at the level of the utero-sacral ligaments - two sutures and on the lateral parts of cervix one suture on each side. Then, the mesh was fixed to the sacral promontory using the Protack (Covidien Ltd, Dublin, Ireland). The mesh was placed under moderate tension to achieve adequate elevation of the uterus. Excess mesh was excised. The mesh was completely covered with peritoneum, and there were no adhesions due to mesh insertion. Gas was expelled and the trocars removed under direct vision.^{[5],[6]}

Discussion

This case report highlights the gold standard procedure for correcting uterine prolaps without recourse to hysterectomy. Laparoscopic sacrohysteropexy is a long and complete procedure that requires good knowledge of the anatomy and of the surgical technique, as well as advanced suturing skills. It is called „The six points technique” due to the six stitches used to fix the mesh.

Our patient was followed-up at 3 and 6 months post-operative. The possible complications for laparoscopic approach may include bleeding from the uterine vessels, infections, tromboembolism or recurrence of uterine prolapse. There is no complication or recurrence of uterine prolapse in the short and medium term.

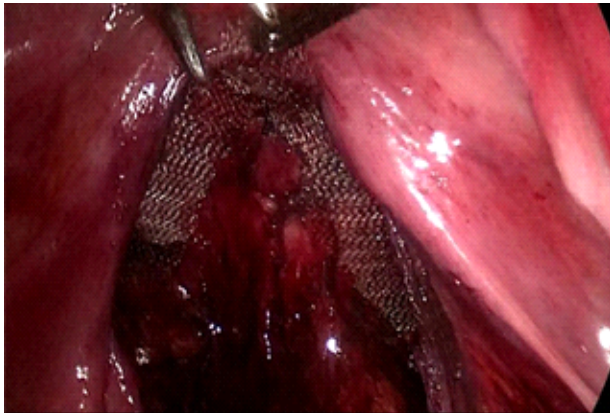


Figure 1 – Fixing the mesh which suspend the posterior vaginal wall to the levator ani muscle;

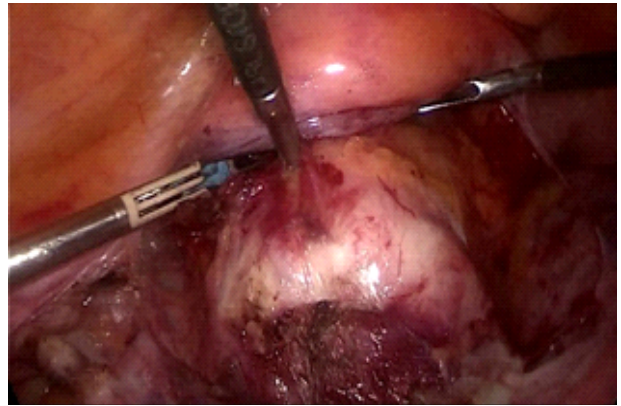


Figure 2 – Dissection of the vesico-uterine space;

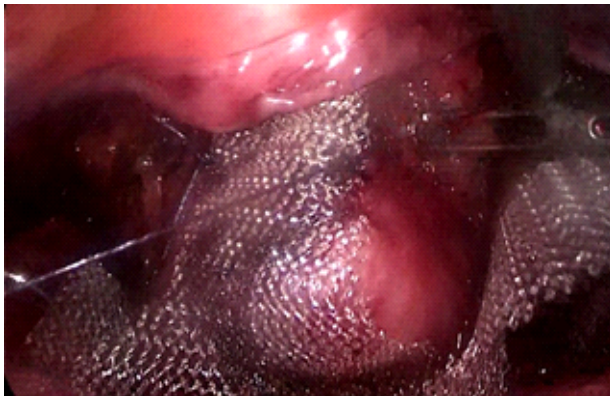


Figure 3 – Suturing the mesh to the anterior cervix in two points;

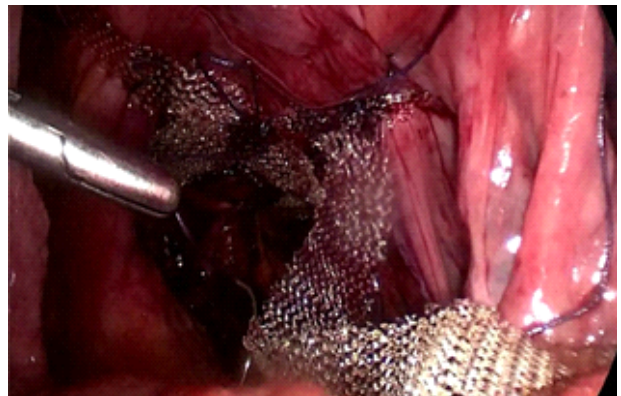


Figure 4 – Suturing the mesh to the utero-sacral ligaments;

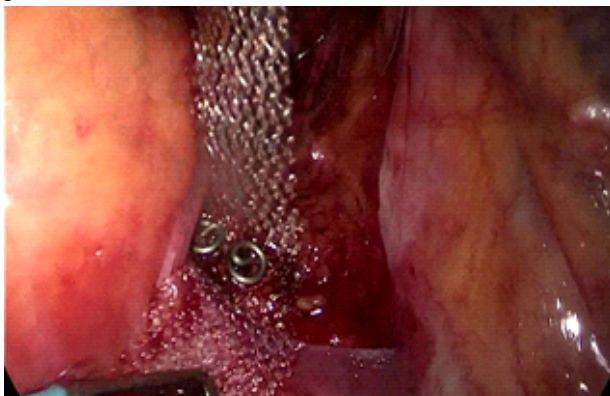


Figure 5 – Fixing the mesh to the sacral promontory using the Protack device;

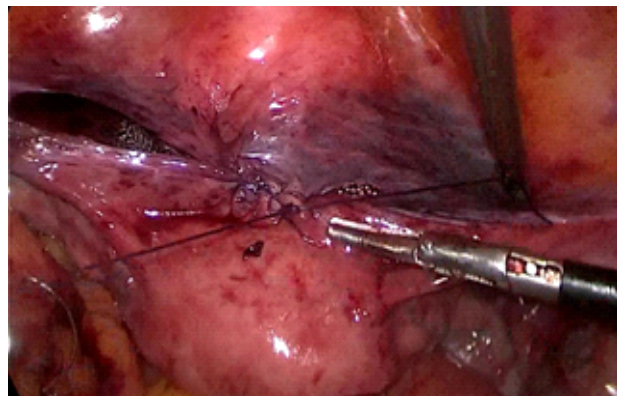


Figure 6 – Covering the mesh with peritoneum.

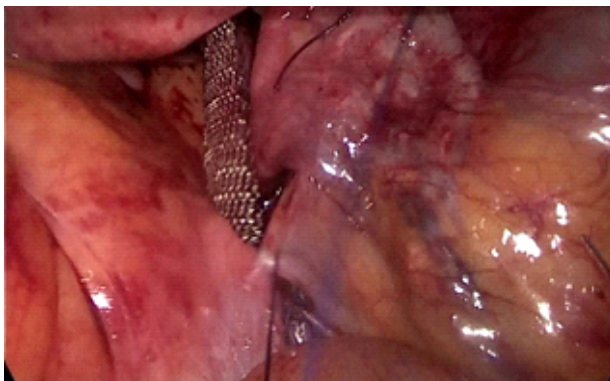


Figure 7 – Covering the mesh with peritoneum.

The success rate of this procedure was reported by several studies and it is between 70%-95%. In a study published in ICS, including 23 patients with uterine prolapse, their success rate was 91,3%. Only two patients presented partial relapse, with no further surgical treatment because they were asymptomatic. Ten patients which were included in this study became pregnant and eight of them had a baby.^[7]

Another study, published in BJOG, by Price N., shows that In 50 out of 51 women the laparoscopic sacrohysteropexy was successful, with

no objective evidence of uterine prolapse on examination at follow-up; there was one failure.^[2]

In addition, uterine preservation is better than hysterectomy because the uterus is a bystander in the prolapse process. Removing the uterus can result in shortening of the vagina and further, disruption of the utero-sacral and cardinal ligaments complex.^[4]

In this technique, we use a mesh to suspend the uterus from the sacral promontory and an additional advantage is the ability to cover the mesh with peritoneum to avoid post-operative bowel adhesions.

In this case, the operation time was 125 minutes. This procedure is longer than our mean time for abdominal and vaginal techniques. But operation time in laparoscopic approach was also within the acceptable range and it was relatively shorter than that of other reports. Although laparoscopic surgery requires a longer operation time than other approaches, when compared with the abdominal approach, it has the advantages of low postoperative morbidity, less postoperative pain, better cosmesis, and a shorter hospitalization duration that may offset this disadvantage. ^{[8],[9]}

On the other hand, this procedure requires higher skills in laparoscopic suturing and dissection and should probably be performed in centers with experience in laparoscopic surgery.

Conclusion

Considering the results of our clinic and few literature data, laparoscopic sacrohysteropexy used in order to correct uterine prolapse, without recourse

to hysterectomy, can be performed with minimal complications and morbidity. It allows restoration of the length of the vagina without compromising its calibre, and is therefore likely to have a favourable functional outcome.

References

1. Rosati M., Bramante S., Bracale U., et al., Efficacy of Laparoscopic Sacrocervicopexy for Apical Support of Pelvic Organ Prolapse, Society of Laparoendoscopic Surgeons, 2013 Apr-Jun, 17(2): 235–244
2. Price N, Slack A, Jackson SR., Laparoscopic hysteropexy: the initial results of a uterine suspension procedure for uterovaginal prolapse, Internat. Journal of Obstetrics and Gynaecology(JOG), 2009
3. Hoffman B., Schorge J., Schaffer J., et al., Williams Gynecology, McGraw-Hill, 2016, pag. 538-558
4. Pandeva I., Mistry M., Fayyad A., Efficacy and pregnancy outcomes of laparoscopic single sheet mesh sacrohysteropexy, Neurourology and Urodynamics, 2016
5. Pirtea L, Balint O, Secosan C, Laparoscopic Promontohysteropexy During Pregnancy, The Journal of Minimally Invasive Gynecology, 2017
6. Pirtea L., Secoșan C., Grigoraș D., Laparoscopic pectopexy in the treatment of genital prolapse – case report and review of literature, Societatea Romana de Obstetrica si Ginecologie, 2016
7. Enria R, Armmelino F., Alovisi C, Laparoscopic treatment of uterine prolapse for young woman wishing pregnancy, International Continence Society, 2012
8. Young-Han P., Seong C-Y., Sung T-P., Laparoscopic Reconstructive Surgery is Superior to Vaginal Reconstruction in the Pelvic Organ Prolapse, International Journal of Medical Sciences, 2014; 11(11): 1082–1088.
9. Rahmanou P., Price N., Jackson S., Laparoscopic hysteropexy: a novel technique for uterine preservation surgery, International Urogynecology Journal, 2013