Abdominal Colposacropexy With Permanent Polypropylene Mesh
J Ivovic, D Kljakic, S Raicevic

Abstract

Introduction: Colposacropexy presents the gold standard for the treatment of vaginal prolapse. The incidence for vaginal vault prolapse is about 15% of women who underwent hysterectomy due to uterine prolapse, and in about 1% of women who had any other reasons for hysterectomy. The aim of the study: We describe here our experience with abdominal colposacropexy in the treatment of the vaginal vault prolapse occurring after hysterectomy with and without urinary stress incontinence.

Material and methods: From 1999 to 2009 we treated 15 women with vaginal vault prolapse occurring due to hysterectomy. Our procedure included the use of non-absorbable permanent polypropylene mesh by abdominal approach. The women treated with colposacropexy using polypropilen mesh by abdominal approach reported satisfactory improvement of quality of life, no recurrent vaginal prolapse, urinary stress incontinence, no dyspareunia, no bowel dysfunction.

Results: Follow up was between 9 months and 10 years (3.7 years). All patients reported satisfactory results with significant improvement of quality of life. There was no recurrence of the prolapse, no de novo urinary stress incontinence or dyspareunia.

Conclusions: Abdominal sacrocolpopexy with permanent mesh is a safe and effective treatment of the vaginal vault prolapse after hysterectomy.

INTRODUCTION & OBJECTIVES

Vaginal vault prolapse is a rare event after hysterectomy, affecting quality of life by its local physical effects (pressure, bulging, heaviness or discomfort) or its effect on urinary, bowel or sexual function. Urinary symptoms include both symptoms related to incontinence or urinary retention (incomplete emptying), bowel symptoms include constipation or faecal incontinence, and symptoms of sexual dysfunction include dyspareunia (pain during intercourse) or avoiding intercourse due to embarrassment.(1)

Vaginal vault prolapse is mostly a preventable complication of hysterectomy. Adequate suspension of the vaginal apex after hysterectomy with use of shortened cardinal and uterosacral ligaments will draw the proximal vagina over the levator plate. This results in support for the distal vagina. The essence of surgical repair of vaginal vault prolapse is to create a new suspension with the same vaginal support. Transvaginal sacrospinous fixation and transabdominal sacrocolpo-suspension accomplish this.(2)

The goal of this work is to reveal cure of the vaginal vault prolapse after hysterectomy with polypropylene non-absorbable permanent mesh, Prolene monofilament (totally macroporous).

We describe here our experience with abdominal colposacropexy in the treatment of the vaginal vault prolapse occurring after hysterectomy with and without urinary stress incontinence.

MATERIAL AND METHODS

From 1999 to 2010 fifteen colposacropexy were performed at women with extended vaginal vault prolapse (mean age 58 years). In all of these patients a hysterectomy was performed many years ago.

Vaginal vault prolapse outside of the introitus vagina and extended cystoenterorectocoele which dramatical augmentation with cough, was found in all patients. Mucosa of the vagina was torrid and choppy and sometimes bleeding. Nine women did not have a preoperative incontinence. While in six women urinary incontinence was present. In these six women abdominal colposacropexy was performed with midleurethral sling by transobturator approach.
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Classification of vaginal vault prolapse stages with Pelvic Organ Prolapse – Quantification System which devised International Continence Society (table – 1).

**Figure 1**
Table 1: Classification of vaginal vault prolapse

<table>
<thead>
<tr>
<th>PELVIC ORGAN PROLAPSE QUANTIFICATION SYSTEM</th>
<th>Stage I</th>
<th>Stage II</th>
<th>Stage III</th>
<th>Stage IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>No descent of prolapse during straining</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The leading edge of the prolapse is 1 cm above the hymenal ring</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The leading edge of the prolapse extends from 1 cm above the hymenal ring to 1 cm below the hymenal ring</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The leading edge of the prolapse extends from 1 cm above the hymenal ring to 1 cm below the hymenal ring</td>
<td>7</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The vagina is completely everted</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</table>

Seven women had stage III with prolapsed vaginal vaulte below the hymenal ring, and eight had completely everted vagina (Fig.1).

**Figure 2**
Fig. 1 – Appearance preoperatively

All of them had to strain to urinate and six had to pass water, one patient had residual urine 150 cm.

At follow-up the patients were interviewed about bladder, bowel and sexual symptoms.

A pelvic examination and measurement of residual urine was done. Perioperative complications and any interim surgery were recorded.

Transabdominal approach was performed in all patients, in 11 patients by Pfannenstiel incision (because hysterectomy was performed by same incision), and in 4 patients by medial laparotomy. Enfranchise vaginals sides (Fig.2).

Back to the mm. levatores ani (Fig. 3), and ahead to the blader neck, where touch balloon catheter (Fig. 4).
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Figure 4
Fig. 3 – rectovaginal space

Placement polypropylene mesh, which fixation along vaginal wall and for mm. levatores ani with absorbable stitches 3/0. Thread each suture initially through the posterior leaf of the mesh, placed deeply through the fibromuscular thickness of the posterior vaginal wall, then bring it back out through the mesh at the same point. Place the sutures in a transverse line 1 to 2 cm apart and 3 to 4 cm distal to the vaginal apex. On the top of the vaginal apex, we place 1-3 stitches for posterior leaf of the mesh. Above sacral promontorium opening peritoneum right laterally of the mesosigma (Fig. 5), and fixation mesh for promontorium with one non-absorbable stitch 3/0 (Fig. 6).

Figure 5
Fig. 4 – vesicovaginal space

Figure 6
Fig. 5 – Fixation mesh for promontorium
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**Figure 7**
Fig.6 - Mesch covering

Peritoneum was closed above polypropylene graft (Fig.6). After operation vaginal wall is retraction inside (Fig.7).

**Figure 8**
Fig. 7 – Appearance after surgery

No serious perioperative complication were seen. Drainage was removed after 24 hours. Patients discharged from hospital after 3 days.

**RESULTS**

Average follow – up was 3.7 years, range 9 months – 10 years, finding one (6.6%) recurrent vaginale prolapse, no reject grafts, no residual urine, no bowel dysfunction. No patients had coital problems due to the colposacropexy. Sexual activity did not change after surgery. Five patients with preoperative sexual inactivity did not resume sexual activity after surgery.

All of patients had no problems with urination. In the patients with preoperativ Stress Urinary incontinence, after implantation tension – free midurethral tape by transobturator approach success cure rate was 83.3%. In one woman there was no improvement after procedure.

**DISCUSSION**

The essence of surgical repair of vaginal vault prolapse is to create a new suspension with the new vaginal support.

Transabdominal sacrocolpo-suspension accomplish this.(2) Sexual activity also did not change after surgery. The impact of prolapse itself on sexual activity may be little.(3) The main causes of postoperative sexual inactivity were absent partner in 3 cases and in two patients were fear of the sexual activity.

Recurrent pelvic organ prolapse is not an uncommon finding after colpopexy and it may adversely affect patient satisfaction.(4) It emphasizes that abdominal repair of rectoceles is not easily achieved and may be confounded by persistent or even deteriorating bowel dysfunction.(5)

Due the prevention bowel dysfunction, we pulled the mesh under the sigmoid colon to the sacral promontorium, when is necessary, especially when is redundant colon. We believe that it contributed to no bowel dysfunction. (6)

The abdominal approach yields better results than the vaginal route. Fixation of the vaginal vault using a prosthesis is more rational and was the method of choice. (7)

Abdominal sacrocolpopexy with permanent mesh is a safe and effective treatment of the vaginal vault prolapse after hysterectomy.

Vaginal approach often results in a narrowed and shortened vagina with diminished of the function. If maximum vaginal length is the objective, it is best maintained with a sacral colpopexy.(8)
Although the vaginal approach was associated with a shorter operative time and decreased hospital stay in the short term, longer postoperative catheter use was necessary. In addition more urinary tract infections and postoperative incontinence and a higher overall failure rate have been recorded. Native tissues are not as strong as synthetic materials. In postmenopausal women, a repair in which the thin, atrophic vaginal apex is secured to the sacrospinous ligament will not have the same durability as a repair involving mesh. In vaginal paravaginal repair, the extensive periurethral dissection required can damage fine branches of the pudendal nerve that innervate and control the urethral sphincter.

Abdominal approach avoids these problems and restores physiological position of the vagina. Therefore the abdominal approach is more durable, and should be used in this indication. Abdominal sacral colpopexy with polypropylene graft is a safe and efficacious treatment of the posthysterectomy vaginal vault prolapse. Vaginal repair often results in a narrowed and shortened vagina with diminished function. Abdominal sacral colpopexy attaches the vaginal walls to the sacral promontory and restores the physiological position of the vagina. Peritonisation of the graft is easy and does not prolong operation time (6).

CONCLUSIONS
Abdominal sacrocolpopexy with permanent mesh is a safe and effective treatment of the vaginal vault prolapse after hysterectomy.

References
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