Trakia Journal of Sciences, No 1, pp 49-53, 2025

Available online at:
https://trakia-uni.bg

ISSN 1313-3551 (online) doi:10.15547/tjs.2025.01.009

Case Report

PREGNANCY FOLLOWING LAPAROSCOPIC UTERINE VENTROSUSPENSION BY BILATERAL LIGAMENTOPEXY OF THE ROUND LIGAMENTS USING THE SELENA TECHNIQUE – A CASE REPORT

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ABSTRACT

Introduction: Reports on pregnancy following surgical correction of pelvic organ prolapse are scarce, because such an intervention is not predominantly performed at fertility age and the duration of perioperative contraception is undefined.

Case presentation: This is the case of a 32-year-old patient with a successful third pregnancy, spontaneously occurring 30 months following laparoscopic uterine ventrosuspension by bilateral ligamentopexy of the round ligaments (LUVBLRL) using the Selena technique and delivery by extraperitoneal caesarian section, without intrapartal or postpartal operative complications.

Conclusion: No operative technique for pelvic organ prolapse has been found to verify a non-risk pregnancy and there is no definitive recommendation regarding the delivery method, although caesarian section is the prevalent treatment of choice with view to preventing recurrence.

LUVBLRL using the Selena technique may be a determining factor for isthmico-cervical incompetence, but is compatible with a successful pregnancy, having no effect on pelvic organ prolapse reversibility.

Key words: ligamentopexy, pregnancy, uterine ventrosuspension,

INTRODUCTION

Pelvic organ prolapse (POP) involves descent of the uterus, vaginal walls, bladder and bowels and the terms uterine prolapse (UP), cystocele, rectocele, enterocele only specify the area of the anatomical defect. UP is associated with weakness of the suspensory structures of the pelvic floor and the endopelvic fascia, with the uterus not directly related to the pathogenesis (1-4)

Etiology is determined by ageing, parity, delivery process, weight of the newborn, obesity, increased intra-abdominal pressure resulting from chronic pulmonary disease, constipation and heavy manual labour (2, 4, 5).

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POP incidence is within the range 11-64.8%, with prevalence in advanced age. The risk of the need to undergo an operation for prolapse or incontinence is 11-12%, and surgery due to recurrence occurs in 29% of the cases; however, it is an uncommon finding in pregnant women (2, 4, 6).

CASE PRESENTATION

This is the case of a 32-year-old patient with a successful third pregnancy, spontaneously occurring 30 months following laparoscopic uterine ventrosuspension by bilateral ligamentopexy of the round ligaments (LUVBLRL) using the Selena technique.

The gynecological examination of a non-pregnant, 30-year-old patient revealed retroversion of uterus with uterine prolapse POP-Q System Stage I that had progressed to POP-Q System Stage 2 in the course of 2 years, no presence of cystocele or rectocele, no

pathological findings of internal genitalia. Since she experienced persistent pelvic pain, and there was no evidence of incontinence or any other likely etiology or UP progression, after her stating definitively that she did not consider future pregnancy, she was offered LUVBLRL using the Selena technique, a modified ligamentopexy by the Pollosson-Pellanda method with laparotomy. The patient was satisfied with the postoperative results (7).

Key steps in LUVBLRL

Laparoscopy and access to the peritoneal cavity. The trocars used were a subumbilical optical trocar and 2 accessory lateral 10 mm ports, left and right, 2 cm suprapubically oriented to the lateral margin of rectus abdominis muscle. Identification, intraperitoneal assessment of 3-4 cm weakened mobile round ligament, grasping of left and right round ligament in the middle and traction with a Grasper. The traction can be performed using Dressing Forceps, Longuette curve, 24 cm, an instrument for abortion through a 10-mm port and is technically completed very rapidly. Round ligament duplicatures of about 1.5 cm are bilaterally exteriorized from the peritoneal cavity through a 10-mm port; Farabeuf retractor provides visualization of a greater length of the anterior rectus abdominis sheath. Fixation to the aponeurosis follows, with 3 individual non-resorbable sutures, every stitch passing through both ligament and fascia. UP corrected to uterine position POP- Q System Stage 0 at desufflation of the peritoneal cavity and subsequent insufflation for intraperitoneal inspection, followed by a desufflation. Blood loss was 30-50 ml, the duration of surgery around 20-50 min, according to unpublished data of ours.

Pregnancy history taken 30 months following LUVBLRL

The patient did not report concomitant diseases, abortions and other surgeries, apart from LUVBLRL. She had 2 non-complicated vaginal deliveries of non-macrosomic fetuses, the last delivery being 8 years prior to LUVBLRL. She is non-corpulent, engages in physical labor, a smoker.

The ultrasound examination showed progressive shortening of the uterine cervix - - 24 mm in 21st g.w, 19 mm in 23rd g.w., with marked funneling, abnormal Doppler test of one of the uterine arteries, and no fetal retardation. The length of a non-gravid cervix is 44 mm. The patient did not report uterine contractions or pain. The findings on ultrasound and cervical status in pregnancy were indicative of isthmico-cervical incompetence. Mc Donald's cerclage was performed in 23rd g.w., since no pathogen colonization was found in the vaginal samples (8, 9).

No other complications were observed in the course of pregnancy; a magnesium preparation was perorally administered until the removal of the encircling suture in the 37th g.w. Because of preeclampsia, which complicated the pregnancy in the 38th g.w., extraperitoneal caesarean section was performed, delivering a live fetus weighing 2525 g, 46 cm long, no intra- or postoperative complications. The assessment of the gynecological status at follow-up showed anatomical restoration - POP- Q System Stage 0 eight weeks following delivery; the patient had restored her activities, engaging in physical labor, having no symptoms following LUVBLRL (8).

DISCUSSION

During pregnancy the uterus undergoes mechanical and biochemical changes – it is enlarged, the connective tissue is reorganized to temporarily strengthen the pelvic floor, so POP is rarely indicated for treatment, although it may complicate the pregnancy with a miscarriage, premature delivery, dystocia, maternal or fetal mortality, cervical infection, urinary tract infection or acute urinary retention (6, 10).

No surgical technique used in POP could verify a non-risk pregnancy and women at fertility age are at a high risk of recurrence, no matter whether surgical treatment was performed or not, with an unclear postpartal POP reversibility. There is no definitive recommendation regarding the delivery method, although caesarian section tends to be preferred with view to preventing recurrence (6, 11).

When applied for uterovaginal prolapse, LUVBLRL using Selena technique utilizes the stable round ligament and rectus abdominis – a strong muscle with no large vessels or important nerves around its anterior sheath, achieves vaginal elongation and may be combined with vaginoplasty. The round ligament is used for uterine suspension through laparotomy and laparoscopy and its rigidity can be enhanced by

placing a non-resorbable material around it (2, 3, 12).

LUVBLRL may have been the determining factor for the isthmico-cervical incompetence because of the ventral traction and because this incompetence had not been identified during the patient's previous pregnancies. Ventral traction is effective in UP and in 85% of anterior compartment prolapse as well. The uterus is easily liberated by LUVBLRL through intraperitoneal transection of the ligament duplicatures, leaving fragments of ligament in the pelvis (3, 12).

The limitation here is that delivery is selectively completed by extraperitoneal caesarean section following LUVBLRL, although intraperitoneal caesarean section is possible without uterine exteriorization after fetal extraction or by applying intraperitoneal ligament transection and uterine exteriorization.

The surgical POP treatment includes restorative surgery with endogenous supporting tissues, compensatory surgery involving synthetic meshes, obliterative surgery; correction of the anatomical defect is achieved vaginally, through laparotomy, laparoscopy or robot-assisted surgery (1, 4).

Laparoscopic sacrohysteropexy (LSH) involving a mesh fixed to the anterior longitudinal ligament of promontory is effective for uterine elevation without hysterectomy, restores vaginal length without affecting caliber and is an option if the patient considers pregnancy. Pregnancy has been reported 3 months following LSH and delivery by caesarean section, no recurrence in the third month. In another report pregnancy occurred 6 months after LSH and suburethral sling, with recurrence observed 2 years after the caesarean section – this is the only case of recurrence among 7 other reports. It is not clear whether pregnancy is a risk factor for recurrence or there are other determining factors, but pregnancy after LSH seems not to increase the risk for recurrence. Recurrence following abdominal sacrohysteropexy is 6.6%, with no difference found as compared to the laparoscopic approach, with 94.9% successful outcome (6, 13, 14).

No recurrence has been observed in a case of vaginal delivery after abdominal sacrohysteropexy. Two cases of pregnancy after sacrohysteropexy with a mesh fixed only to the posterior part of the uterine cervix reported recurrence 2 years after delivery; another case reported one full-term vaginal delivery after open sacrohysteropexy approach with a Y-shaped mesh fixed to the cervix only anteriorly and posteriorly. Eight other reports involving single sheet mesh sacrohysteropexy concluded that this technique is appropriate in uterine prolapse in women considering pregnancy. In 6 reported pregnancies after laparoscopic hysteropexy with a mesh encircling the cervix caesarean section was suggested, with early abortion possible in the typical way, and late abortion involving hysterotomy. Perioperative contraception is advisable and pregnancy does not compromise long-term uterine suspension, although there is a risk of prolapse reversibility; that is why consultations focus on not considering pregnancy before UP surgery for uterine preservation (1, 11, 15).

Laparoscopic rectus abdominis hysteropexy is a technique compatible with vaginoplasty for uterine suspension, achieving durable adhesion in 91.43% between the anterior wall of the uterine body and rectus abdominis, 1-2 cm vaginal elongation and greater SUI improvement, as compared to transvaginal approach (3).

Vaginal hysterectomy for POP does not achieve a definitive treatment because of a predisposition to POP following hysterectomy – vaginal cuff prolapse, new vaginal fornix prolapse in 40%, urinary incontinence resulting from damage to the pelvic nerves and the supporting tissues. Preserving a prolapsed uterus tends to be the option of choice over vaginal hysterectomy, the latter seeming to be the last option at fertility age, since uterus and cervix may play an important role in sexual function (2, 3, 16-18).

Another laparoscopic technique involves fixation of the uterus to the anterior abdominal wall using overfascial mesh, whereas the technique of one-sided uterine fixation through the round ligament uses a stitch through the left round ligament at its insertion into the uterus, with uterine suspension achieved by reconstructing a new inelastic round ligament with 76.4% reduction of the prolapse to stage 0. Kurt extraperitoneal ligamentopexy is a suspension technique applied in perimenopause involving round ligament fixation to the

anterior rectus fascia, in intact peritoneum, with no recurrence. The most appropriate surgical approach to POP with uterine preservation at fertility age remains disputable (2, 19, 20).

CONCLUSION

No operative technique for pelvic organ prolapse has been found to verify non-risk pregnancy and there is no definitive recommendation regarding the delivery method, although caesarian section is the prevalent treatment of choice with view to preventing recurrence.

Laparoscopic uterine ventrosuspension by bilateral ligamentopexy of the round ligaments using the Selena technique may be a determining factor for isthmico-cervical incompetence, but is compatible with a successful pregnancy, having no effect on pelvic organ prolapse reversibility.

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