Sacrocerivopexy and Combined Operations Involving Cases of Total Uterine Prolapse

Case Reports

Ates Karateke Ayse Gurbuz Canan Kabaca Murat Mengulluoglu

Zeynep Kamil Women's and Children's Diseases, Education and Research Hospital, Istanbul, Turkey

Key Words

Sacrocerivopexy · Total uterine prolapse ·
Uterine preservation

Abstract

Objective: To determine the outcome of sacrocerivopexy and combined operations in the treatment of uterovaginal prolapse in women with desire to preserving both uterus and fertility. **Clinical Presentation and Intervention:** Sacrocerivopexy with Prolene mesh and combined operations were performed in 3 women with total uterine prolapse because of the patient's desire to retain fertility in 2 cases and refusal of hysterectomy in the 3rd patient. The 1st case was a 38-year-old woman, gravida 2, parity 1; the 2nd case a 42-year-old woman, gravida 3, parity 2, and the 3rd a 39-year-old woman, gravida 1, parity 1. Douglas pouch was obliterated with Moschcowitz operation. All of the women underwent sacrocerivopexy with Prolene mesh. The repair of a paravaginal defect and prophylactic Burch urethropexy were accomplished through entering Retzius' space. Genital hiatus was narrowed via approximating levator muscles transvaginally. No serious intraoperative complications occurred and no recurrence was detected during the fol-

low-up period. There was no postoperative complication except for some degree of pain in the 1st postoperative month in 1 case. **Conclusion:** The results indicate that sacrocerivopexy and repair of all concomitant defects in the pelvic floor are effective procedures in the treatment of uterovaginal prolapse in cases where there is a desire to retain fertility and uterus.

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Introduction

The main treatment in uterovaginal prolapse is vaginal hysterectomy and repair of all tissue defects in pelvic support in the older age group of women with no desire to retain fertility and uterus. The unrepaired defects eventually result in renewed symptoms and repeated vaginal procedures. However in young women either nulliparous or parous with a desire to retain fertility or refusal of hysterectomy, surgical correction of uterovaginal prolapse with preservation of the uterus is indicated. The ideal method for surgical management of uterovaginal prolapse with retention of the uterus has not yet been established. Manchester-Fothergill operation, transvaginal uterosacral ligament fixation to the sacrospinous ligament, uterine

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Dr. Ayse Gurbuz
Selamicesme, Bagdat Cad, Fahriye Apt. No. 179/2, Kat: 2 Daire: 7
TR-81030 Kadikoy, Istanbul (Turkey)
Tel. +90 216 385 2317, Fax +90 216 411 7955 or +90 216 363 9191
E-Mail canankabaca@yahoo.com

suspension to the pectineal ligament, laparoscopic suture hysteropexy and sacrohysteropexy with synthetic mesh are examples of operative procedures [1–5].

The desire to preserve the uterus is particularly high in cases with uterine prolapse in the premenopausal period [6]. Therefore an ideal surgical procedure should aim at correcting prolapse, repairing all defective sites, preserving coital function and maintaining urinary and fecal continence. We report such a combined procedure in 3 cases with uterovaginal prolapse and a desire to retain the uterus in 1 case and fertility in the other 2 cases.

Case Reports

Case 1

A 38-year-old woman, gravida 2 and parity 1 and a desire for future pregnancy, presented with preoperative back pain and a Q tip value of 45°. She weighed 76 kg and was a habitual cigarette smoker (15 cigarettes per day). She gave birth 17 years ago and had complaints of bulging for 2 years and refused to undergo vaginal hysterectomy proposed previously by other gynecological clinics.

Case 2

A 42-year-old woman, gravida 3 and parity 2 and the desire to preserve her uterus, presented with a preoperative Q tip value of 60°, back pain and uterovaginal prolapse for 3 years. She weighed 65 kg, did not smoke cigarettes and did not have any other systemic diseases. She gave birth at the age of 19 years and also 14 years ago, and recently married for a second time.

Case 3

A 39-year-old gravida 1 and parity 1 presented with a preoperative Q tip value of 40° and a desire to retain fertility. She weighed 62 kg and had no history of smoking cigarettes.

In all of the 3 patients paravaginal defect was verified by lack of anterolateral sulci. Transverse rugation was present in anterior vaginal walls and in the apical portion of the anterior wall, no transverse defect was present in any of the cases. Enterocele was not detected in any of the cases. Low posterior defects were present in all of the 3 cases. Genital hiatus was widened in all of the cases.

All 3 patients complained of bulging of the uterus from the introitus and were unable to perform sexual intercourse successfully. No patient complained of urinary incontinence.

Prior to surgery all the patients were informed of the possible intra- and/or postoperative complications; they were duly advised of any possible polypropylene mesh infection and erosion. They were warned that if pregnancy occurred, they would be managed by our clinic.

The 3 women were evaluated gynecologically and urodynamically. Gynecologically, both vaginal and rectal digital examinations were performed. Sims retractor in lithotomy position in addition to a single-toothed tenaculum to grasp the cervix were used for the examination of uterovaginal prolapse. Each site was evaluated with the patient resting and straining using the Valsalva maneuver. Further the patients were examined in the standing position. In examining the cervix, the integrity of cardinal and uterosacral ligaments, and the

Table 1. Representative grid and line diagrams both for pre- and postoperative evaluations for the POPQ system for cases 1, 2 and 3, respectively

a Case 1					
+3 (–2)	Aa	+6 (–2)	Ba	+7 (–6)	C
4.5 (3)	gh	1.5 (3)	pb	8 (9)	tv1
+3 (–3)	Ap	+8 (–3)	Bp	– (–9)	D
b Case 2					
+2 (–3)	Aa	+5 (–3)	Ba	+6 (–7)	C
4 (3)	gh	2 (3)	pb	8 (9)	tv1
+2 (–3)	Ap	+5 (–3)	Bp	– (–9)	D
c Case 3					
+2 (–2)	Aa	+5 (–2)	Ba	+6 (–7)	C
4 (3)	gh	2 (3)	pb	8 (9)	tv1
+2 (–3)	Ap	+5 (–3)	Bp	– (–9)	D

Numbers not in parentheses indicate preoperative values, numbers in parentheses postoperative third-month records.

Aa = A point on the anterior vaginal wall 3 cm above the hymenal ring; Ba = most dependent or distal point on the anterior vaginal wall between Aa and C; C = cervix; gh = genital hiatus; pb = perineal body; tv1 = total vaginal length; Ap = a point on the posterior vaginal wall 3 cm above the hymenal ring; Bp = most dependent or distal point on the posterior vaginal wall between Ap and point D; D = posterior fornix.

position and level of the cervix were determined. The anterior fornix was evaluated by direct vision in resting and straining positions and with digital examination to determine any possible defect in pubocervical fascia in the apical region. The posterior fornix was examined for existence of enterocele. The transverse rugae in the anterior vaginal walls were examined to determine the nature of the pubocervical fascia. In the presence of transverse rugae, the pubocervical fascia was evaluated to determine whether or not it was healthy and intact. Anterolateral sulci were evaluated by using a Sims retractor to depress the posterior vaginal wall. The diagnosis of paravaginal defect was established in the absence of anterolateral sulci. The rugae of the posterior vaginal wall and posterolateral sulci were examined to determine whether or not there were defects in rectovaginal fascia and the attachment of rectovaginal fascia to parietal fascia of levator ani muscle. Levator hiatus was also evaluated in both resting and contracted conditions. Rectovaginal examination was performed to evaluate the perineum.

Q tip measurement and the urodynamical evaluation were performed after placing the uterus into anatomic position with a pessary in order to detect any unrecognized internal sphincteric deficiency or type II urinary incontinence. Residual volume of the urinary bladder was determined before and after the operations. Prolapse was defined according to the Pelvic Organ Prolapse Quantification (POPQ) system [7]. Preoperative and postoperative third-month POPQ values for each patient are listed in table 1. In the preoperative and postoperative periods, urinary and fecal incontinence, dyspareunia, pelvic and back pain, constipation and history of sexual dysfunction were evaluated.

Fig. 1. Prolene mesh was deeply fixed to the cervix with three interrupted Prolene No. 0 sutures. The proximal end of the Prolene mesh was drawn through the tunnel without significant tension.

Intervention

The abdominal cavity was exposed through a midline incision under general anesthesia. Presacral fascia was reached by incising the peritoneum overlying the sacral promontorium. Beginning at the level of the promontorium, three interrupted sutures with Prolene (polypropylene) No. 1 were placed 1 cm apart onto this fascia cranio-caudally. Before placing these sutures, the right ureter and sacral vessels were visualized and protected. The Douglas pouch was obliterated with Moschcowitz operation. Transverse incision was applied on the posterior surface of the cervix, where the sacrouterine ligaments join the isthmus. A tunnel under the peritoneum beginning from the incision over the promontorium was developed up to the point where the cervix ended. Folded Prolene mesh (polypropylene mesh: Surgipro) appearing now as a double layer with 1.5 cm width was pushed down through the proximal opening of the previously mentioned tunnel and

pulled out through the distal opening of that tunnel. The Prolene mesh was deeply fixed to the cervix with three interrupted Prolene No. 1 sutures. The proximal end of the Prolene mesh was sutured without significant tension with three interrupted sutures, which had been placed to the presacral fascia previously (fig. 1). Then both ends of the Prolene mesh were peritonized so that the tunnel was closed (fig. 2, 3). After parietal peritonization had been finished, the space of Retzius was entered and exposed. The white line over the obturator muscle was seen by exposing the obturator foramen and nerve under the Cooper ligament. Beginning from the area near the ischial spines, paravaginal tissues were visualized by insertion of the index and middle finger of the left hand into the vagina. Paravaginal tissues were approximated bilaterally to the white line with three interrupted Prolene No. 0 sutures to both sides, beginning from the area near the ischial spines. Because of hypermobility of the urethro-vesical junction in all of the cases, prophylactic Burch operation was performed in order to strengthen and relocate the urethrovesical angle in its anatomic position. Prophylactic Burch operation was also performed because of possible future attenuation of anterior vaginal wall due to the strengthening of the posterior compartment by attaching the mesh to the sacral promontory. Paraurethral tissues were approximated with one Prolene No. 0 suture on each side to Cooper's ligaments. After completion of the abdominal part of the operation the levator muscles were approximated beyond the hymenal ring transvaginally by two sutures placed with Vicryl No. 0 (polyglactine 910). Genital hiatus was narrowed by posterior colporrhaphy in all 3 of the cases.

The duration of the operation was 135, 120 and 110 min for cases 1, 2 and 3, respectively. There was no intraoperative complication during surgery in any of the cases. Postoperative hospital stay was 4 days for the first 2 cases and 3 days for the 3rd case. The total recovery time was approximately 2 weeks for each case. Neither urinary retention nor any other urinary or bowel complaint was detected in the early or late postoperative period in any of the 3 cases.

Postoperatively, each patient was examined 6 weeks, 3, 6, 9, 12 months and every 6 months thereafter for cases 1 and 2. The patients were followed for 24, 18 and 12 months, respectively. There was no deterioration in the third-month POPQ values during the follow-up period. Only the 3rd patient had postoperative complaints due to pain caused by posterior repair during the 1st month. This pain resolved in the 6th week. None of the patients got pregnant; 2 used contraceptive methods, whereas the 3rd

Fig. 2. Both ends of the Prolene mesh were peritonized, so the tunnel was closed.

Fig. 3. The final result of the sacrocervicopexy operation. The uterus is within the pelvis.

could not achieve pregnancy despite her desire to become pregnant. In this patient, clomiphene challenge test was positive and follicular stimulating hormone level was 14.1 IU/l on the 3rd day of the menstrual period because of poor ovarian reserve. She failed to achieve pregnancy even after a year and the patient was advised to apply the infertility and endocrinology clinic of our hospital.

Discussion

The existence of pelvic organ prolapse is associated with various factors like obesity, child birth or chronic diseases causing increment in abdominal pressure and also with congenitally defective genital support [8, 9]. The most common etiological factor may be the increased intra-abdominal pressure and softening of the connective tissue mass during pregnancy or the hormonal effects related to pregnancy. In Turkey, fertility potential and possessing a uterus are valued by women as an integral part of being a whole woman, therefore, psychological problems arise in women after hysterectomy. Hence, conservative management of uterovaginal prolapse is indicated as in these 3 cases.

Genital prolapse may arise from any weakness due to a part or the whole supporting system and thus repair of all

the defects may influence the permanent success of any operative modality. In genital prolapse, Bonney [10] suggested that three levels of damage (upper, middle and lower supporting tissues) may be present and these may occur singly or in any combination. Damage to the upper supporting tissues (round and broad ligaments) may result in excessive mobility and is usually associated with retroversion. Damage to the middle supporting tissues (the cardinal-uterosacral complex) results in progressive eversion of the vagina with concomitant elongation of the cervix. In all of our 3 cases middle supporting tissues were attenuated and therefore the fixation of the cervix to the sacrum with Prolene mesh was performed to construct a structure to serve as a new cardinal-uterosacral complex; thus the middle supporting system was reconstructed in these cases. Damage to the lower group of supporting tissues (pelvic and urogenital diaphragms and the perineum and the muscles therein) results in a middle or lower rectocele or a cystocele. A rectocele was present in all 3 patients, so posterior colporrhaphy was performed in all of them. Fortunately, in none of the cases, any central defect was present, therefore we did not perform anterior colporrhaphy. The main supporting tissue of the anterior vaginal wall is the pubocervical fascia. This fascia attaches laterally to the arcus tendineus fascia of the obturator muscle, so if any paravaginal defect exists in a patient with genital

prolapse and if the patient desires to retain the uterus, the fixation of the uterus to the sacrum would not be solely sufficient. So the approximation of the pubocervical fascia to the arcus tendineus of the obturator muscle should be performed transvaginally or transabdominally. In all of our 3 patients, we detected a paravaginal defect and performed the appropriate repair.

We think that the repair of paravaginal defects will improve the symptoms of uterovaginal prolapse and sustain a longer duration of success. Yet, our follow-up period was short; no recurrence was detected in our cases and also in similar operations performed by other authors [5, 11, 12] the recurrence rate was reported to be low. Recent data [5, 11, 12] are insufficient to determine the safeness

of vaginal delivery and the outcome of the surgery after pregnancy because of the limited number of pregnant cases reported in the literature.

Conclusion

In conclusion, treatment with sacrocervicopexy using Prolene mesh seems to be an effective modality for treatment of uterovaginal prolapse in women with a desire to preserve the uterus and with child-bearing potential. Moreover, the repair of all sites of defect, in addition to sacrocervicopexy, may sustain a better outcome.

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