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CASE REPORT

Surgical treatment of uterine prolapse in women with bladder exstrophy: report of two cases with modified Prolift™ procedure

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Abstract The incidence of pelvic organ prolapse is 18% in women with bladder exstrophy. A vaginal technique to correct the prolapse may be preferable in these women with multiple abdominal operations in their histories. We have performed a modified Prolift™ procedure for the repair of severe uterine prolapse in two young women. A review of the literature is presented.

Keywords Bladder exstrophy · Fertility · Surgical mesh · Uterine prolapse

Introduction

Bladder exstrophy is a congenital urinary tract, pelvis, and pelvic floor anomaly which is thought to be due to a premature rupture of the cloacal membrane during fetal development. In females, this disorder is characterized by an open bladder, abdominal wall defect, separation of the pubic bones, bifid clitoris and an abnormal pelvic diaphragm musculature. The vagina is shortened and placed anteriorly. The cervix enters the anterior vaginal wall more caudally and is therefore positioned closer to the often narrow introitus.

Due to the altered anatomy, severe genital prolapse may be present in these women. Pessary treatment may be first choice treatment, but it is not always possible because of the short vagina and lack of support from the pelvic floor. We present two cases with surgical treatment of severe uterine prolapse in young women with bladder exstrophy.

Patients

Patient A, a 14-year-old female with congenital bladder exstrophy was referred to our department because of pelvic organ prolapse. She had a history of multiple surgeries, including bladder closure, bladder neck reconstruction, ileovesicostomy (Monti catheterizable stoma), introitoplasty and abdominal wall reconstruction.

Physical examination revealed an isolated stage-2 uterine prolapse with the cervix at the hymen. She had a shortened vagina of 5–6 cm and no additional anterior or posterior compartment prolapse.

A modified Prolift™ posterior procedure was used (Fig. 1). The posterior vaginal wall was opened in the midline after hydrodissection with normal saline. The rectum was separated from the vaginal wall. The sacrospinal ligaments were freed. An incision was made 3 cm lateral and inferior from the anus on both sides, through which the trocars were inserted. The trocars were fixed through the sacrospinal ligaments at 2–3 cm from the ischial spines. The posterior mesh was modified in such a way that the central portion, usually covering the rectocele, was removed and a broad loop with a 2-cm central part was left (Fig. 1). This modified mesh was implied and fixed

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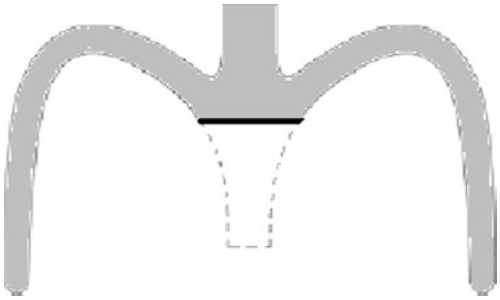

Fig. 1 A modified Prolift™ procedure was used. The *grey portion* of the Prolift Posterior™ has been used in this study

with three polypropylene 2-0 sutures through the posterior side of the cervix. With gentle traction on the modified mesh, the cervix was elevated for 2 cm. Further elevation was restricted by the short vagina. The patient was discharged 2 days after surgery. Six weeks following surgery, the patient was free of prolapse symptoms. At physical examination, the cervix was located 3 cm above the hymen. No erosion of the mesh was detected.

Patient B was a 22-year-old nulliparous female with symptoms of uterine prolapse and dyspareunia. She had previously undergone multiple operations due to bladder exstrophy, which included vaginoplasty and Mitrofanoff urinary stoma. Physical examination showed a prolapse of the cervix till 3 cm beyond the hymenal remnants with no additional anterior or posterior compartment prolapse. The length of the vagina was 5 cm (POP-Q Aa −3, Ba −3, C 3; HG 4, PB 3, TVL 5; Ap −3, Bp −3, D −1).

The same procedure as described above was performed. During surgery, the cervix was elevated till 1 cm above the hymenal remnants. The patient was discharged 2 days after surgery.

Sixteen months following surgery, dyspareunia was still present, but the patient was free of prolapse symptoms. The cervix was located at the hymenal remnants (POP-Q Aa −3, Ba −3, C 0; HG 4, PB 3, TVL 4–5; Ap −3, Bp −3, D −4). No erosion of the mesh was detected.

Discussion

Pelvic organ prolapse can be a difficult and bothersome problem in women with bladder exstrophy. Mathews et al. have described a prevalence of 18% with a mean age at onset of 16 years [1].

Different surgical techniques have been proposed for the correction of uterine prolapse in these women [2–5]. Hysterectomy is no option in women desiring future fertility. Moreover, removing the uterus without providing support to the vaginal vault will not solve the problem.

Fixation of the uterus to the anterior abdominal wall is a possibility [2]. Especially in women with bladder augmentation, this operation can be technically difficult, however.

Muir et al. have presented a case of recurrent pelvic organ prolapse successfully managed with a sacral colpopexy [3]. Sixteen months following surgery, there was no recurrence of the prolapse.

Boemers et al. have described the rotundum psoas hitch procedure in females with bladder exstrophy [4]. The round ligaments have been detached from the inner inguinal ring and fixed to the psoas muscle on both sides, thereby fixing the uterus in a more cranial and dorsal position. This technique was performed prophylactically in six cases and therapeutically in three cases. The mean follow-up was 2 years. The authors conclude that this method was an effective prevention or correction of procidentia in patients with bladder exstrophy and should be combined with other abdominal surgeries.

The techniques described above are abdominal procedures. We preferred a vaginal approach for surgical management of prolapse in these patients with bladder exstrophy, to avoid further abdominal operations and adhesions. Recently, Palma et al. have performed a vaginal sacrospinous hysteropexy using a mesh in a patient who desired uterine preservation for future pregnancies [5]. The technique they have described was quite similar to the one we have used.

Our procedure was minimally invasive with a low risk of morbidity, such as adhesion formation and organic lesions due to altered anatomy. Mesh-related problems such as erosion, pain and dyspareunia, however, may be difficult to manage and need to be considered. Although the short-term functional results were acceptable in these two cases, the anatomical results with the cervix at the level of the introitus were less optimal than aimed for.

The vagina may be shortened in women with bladder exstrophy. This seemed to limit our ability to provide apical suspension. We have not considered this beforehand, but it might have been an option to use vaginal dilators preoperatively to increase vaginal length.

From literature, we know that the use of synthetic mesh placed through an abdominal approach provides solid and durable support to the uterus [6]. Unfortunately, no data is available yet on long-term follow-up of vaginal meshes, which would be especially informative in these young women. Furthermore, data on mesh material in relation to pregnancy and delivery are absent as well. Primary caesarean section in a multidisciplinary session in order to preserve the previous reconstructions may be recommended in these women. Future hysterectomy after mesh surgery may also lead to complications. Again, no literature is available on this subject.

Conclusion

In conclusion, this report is on a vaginal surgical technique with use of mesh material in two women with bladder exstrophy and uterine prolapse. The modified Prolift™ procedure is a minimally invasive technique with low risk of morbidity, which preserves fertility. The vaginal approach in these women with a history of multiple abdominal operations may be safer and therefore preferable. The functional and anatomical results were acceptable, but longer-term results are required to evaluate this technique.

Conflicts of interest M. W. and M. V. received an educational grant and are occasionally involved in educational activities for Gynecare Benelux. This study, however, was entirely instigated by the responsible researchers and funded by university-administered research funds. Gynecare was not involved in the study setup, study design, data collection, or whatsoever.

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