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Laparoscopic Sacrocolpopexy for Treatment of Vaginal Vault Prolapse in a Patient with Severe Pelvic Adhesions: A Case Report

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Authors' contributions

This work was carried out in collaboration among all authors Author MG was support surgeon, designed the study, coordinated the manuscript writing and literature review and took part in final review and approval of manuscript. Author PC was support surgeon and took part in final review. Author AC was the lead surgeon and took part in patient follow up. Author MZ took part in patient follow up, manuscript writing and literature review. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Aims: Pelvic organ prolapse (POP) regards an increasing number of women. The gold standard procedure for the POP is abdominal sacrocolpopexy. Adhesions often occur after pelvic surgery, with a lower incidence after laparoscopy. We present a laparoscopic sacrocolpopexy in a patient with severe pelvic adhesions.

Presentation of Case: A 52-years-old woman presented to our hospital with fourth degree vaginal vault prolapse after hysterectomy. Laparoscopic bilateral oophorectomy and sacrocolpopexy were proposed to woman. During operation multiple pelvic adhesions were observed; and left ovary, affected by a cyst detected during preoperative assessment, was not visible. The adhesions were removed and bilateral oophorectomy and sacrocolpopexy were performed.

Discussion: POP is often a multicompartmental disorder. Some authors recommended abdominal sacrocolpopexy with mesh as optimal surgical treatment for vaginal vault prolapse. Recent

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literature showed significant improvements about symptoms using minimally invasive techniques and it reported 78.26% of patients with improvement in defecatory function, 55% in urinary symptomatology and 93.75% in symptoms related to the first compartment. The incidence of intraoperative complications is low and the most common complication is bladder injury with an occurrence of 2%. In the literature a preponderance of evidence (7 of 12 studies) sustained benefits of laparoscopy in reducing adhesions.

Conclusion: Laparoscopic surgical procedures for the treatment of POP are effective and safe techniques and prevent the formation of adhesions, but complex adhesions cases can increase the difficult of surgical procedures.

Keywords: POP; sacrocolpopexy; adhesions; laparoscopy.

1. INTRODUCTION

Pelvic Organ Prolapse (POP) is a pathology that regards an increasing number of women. The prevalence of POP increases with age, parity, obesity and previous hysterectomy [1,2]. It is currently estimated to be from 10% to 24% [3]. POP causes serious morbidity, as pelvic pain, chronic constipation, fecal and urinary incontinence and sexual dysfunction [1,4]. Uterovaginal prolapse is the most common indication for hysterectomy in menopause; and approximately 15-18% of hysterectomized women will develop a pelvic prolapse [5]. The gold standard procedure for the surgical treatment of POP is open abdominal sacrocolpopexy, but laparoscopic sacrocolpopexy provides similar outcomes [6]. Recently, robot assisted prolapse surgery has emerged as a possible alternative to a conventional laparoscopic technique [4]. Adhesions are abnormal peritoneal fibrotic bands that connect two surfaces that are normally separated in the peritoneal cavity; and many complications may be associated to adhesions such as chronic pelvic pain, bowel obstruction, dyspareunia and infertility [7]. Adhesions formation occurs in 90% of abdominal and pelvic surgeries, with a lower incidence after laparoscopic surgery, and after adhesiolysis; the adhesions will form again in 85% of cases [8]. Despite the poor formation of adhesions after laparoscopic surgery, we present a rare case of laparoscopic sacrocolpopexy in a patient with multiple severe pelvic adhesions after total laparoscopic hysterectomy.

2. PRESENTATION OF CASE

A 52-years-old Caucasian woman presented to our hospital with a vaginal vault prolapse. She had a Body Mass Index of 23.4 and she had a total laparoscopic hysterectomy with bilateral salpingectomy for uterine fibromatosis at age of 49. The main symptoms were sensation of vaginal pressure, dyspareunia and embarrassment during sexual activity. The patient had not stress or urge incontinence or fecal incontinence or constipation. At gynaecological assessment, she had a defect of anterior, middle and posterior compartment, and according to Pelvic Organ Prolapse Quantification system (POP-Q) a stage IV was diagnosed (Fig. 1). Ultrasound exam showed a 5 cm unilocular anechoic left ovarian cyst. Serous markers for ovarian cancer were negative and the IOTA Adnex Model showed a low risk for malignancy. The surgery proposed to woman was laparoscopic bilateral oophorectomy and sacrocolpopexy. Laparoscopy was performed placing an intraumbilical 12 mm trocar by direct vision and two accessory 5 mm trocars on the right and left lower pelvic quadrant, 3 cm above iliac crest and one accessory trocar on the pelvic suprapubic area, 4 cm above pubic bone. Upon the introduction of the laparoscope multiple adhesions from omentum and bowel to pelvic walls were observed (Fig. 2). The uterus was absent, according to anamnesis, and both ovaries were not visible. Peritoneal washing cytology was performed. Once the adhesions were removed the right ovary, with a normal aspect, was detected and removed. The left ovary was yet not visible because it was entirely covered with the sigmoid colon and stuck to the pelvic sidewall. Lysis of adhesions between the sigmoid colon and the left pelvic sidewall, left retroperitoneal access to the ovary with a longitudinal incision of the peritoneum, retroperitoneal dissection of the ureter and lysis of the upper surface of the ovary from the sigmoid colon were performed. The ovary was finally completely visible and it was greater than other for a 5 cm ovarian cyst with smooth walls (Fig. 3). A totally safe left oophorectomy was executed. Then, the sacrocolpopexy was performed using classical surgical steps: Dissection of the sacral promontory, incision of

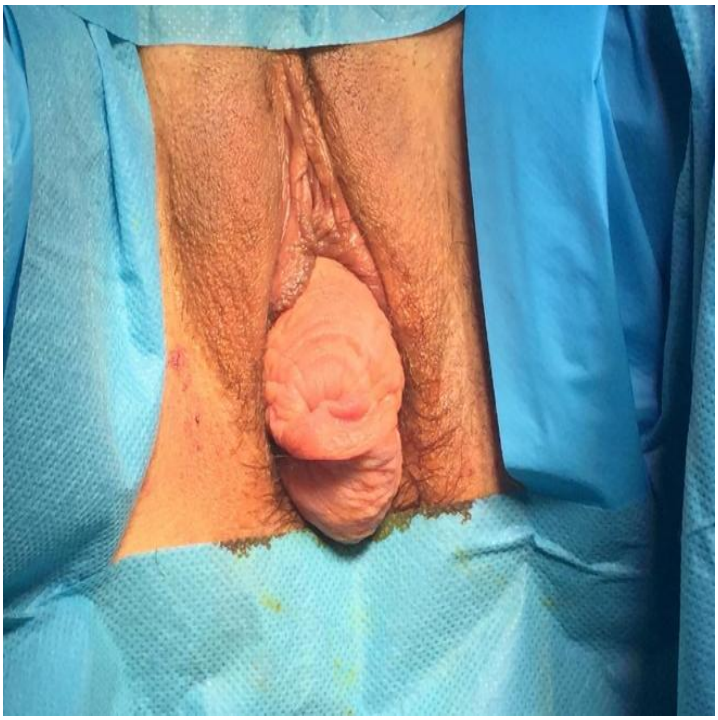

Fig. 1. Vaginal vault prolapse

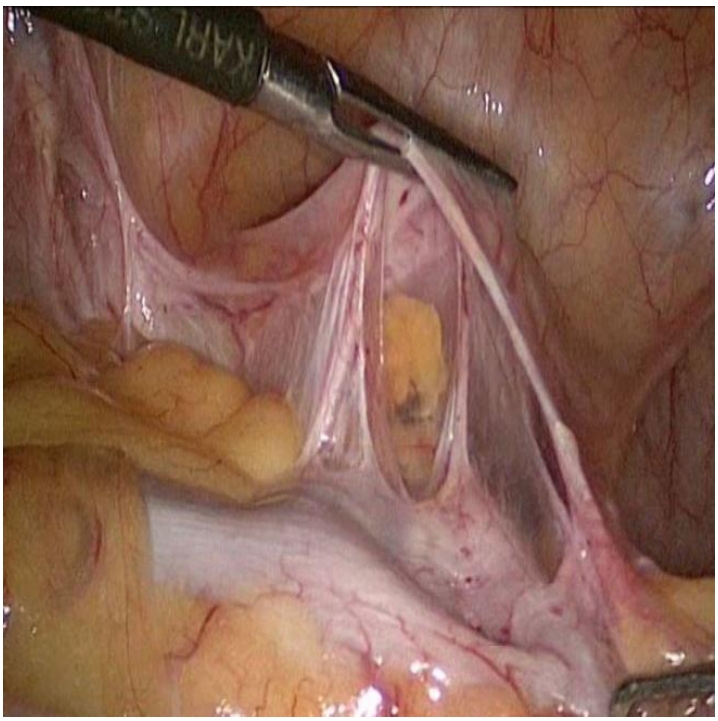

Fig. 2. Pelvic adhesions

the right lateral peritoneum, dissection of the rectovaginal and vesicovaginal space, fixation of the mesh to the anterior and posterior vaginal wall and to the promontory (Fig. 4), pelvic peritonization (Fig. 5). The washing cytology was negative for malignancies

and the histopathological exam of left ovary showed a follicular cyst. At three-months and six-months follow-up visits, the patient had not pelvic organ prolapse and she referred a significant improvement in sexual function.

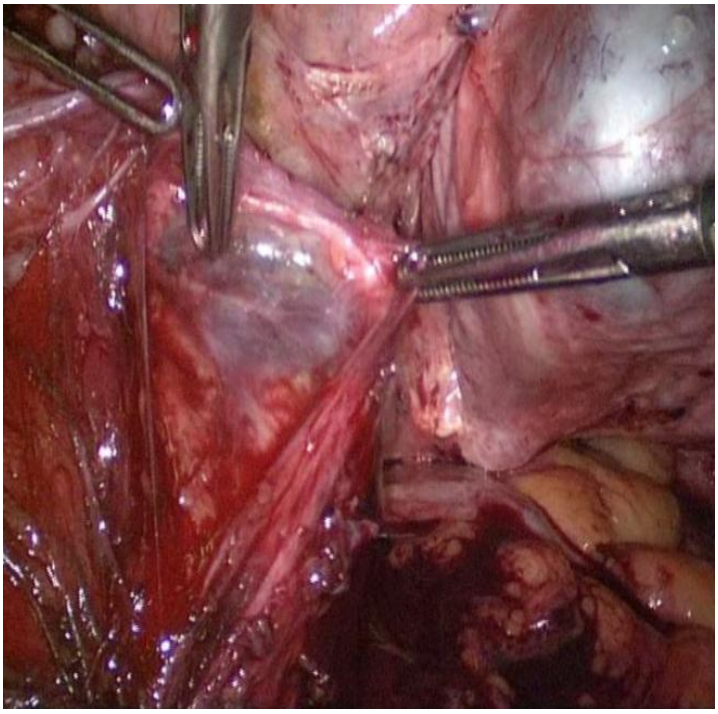

Fig. 3. Left ovarian cyst

Fig. 4. Mesh placement

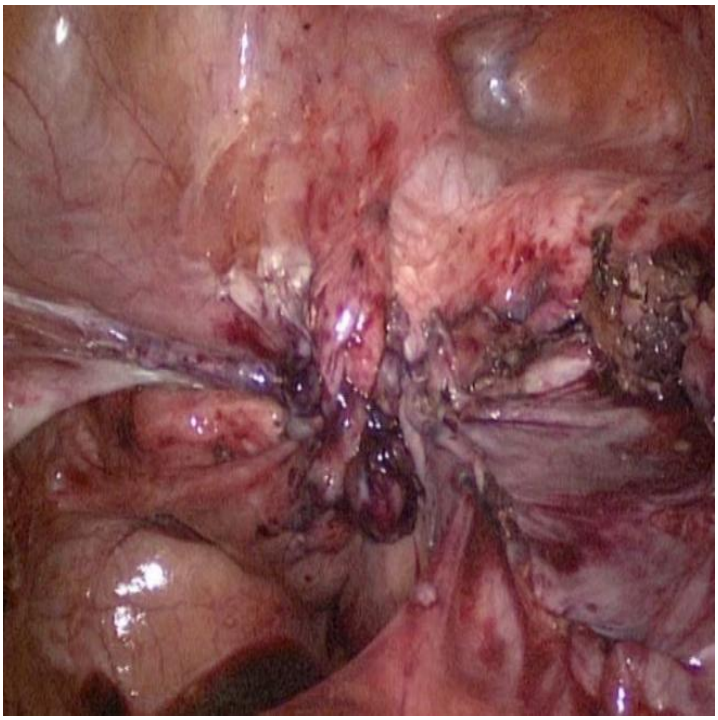

Fig. 5. Final aspect of pelvis

3. DISCUSSION

The treatment of POP is still controversial in same aspects and it is approached by gynecologists, urologists and colorectal surgeons in different ways and rarely by a unique multidisciplinary approach. Single compartment prolapse is rare and for this reason POP is often a multicompartmental disorder [9]. Hysterectomy is a predisposing factor for POP and disorders such as enterocele; and vaginal vault prolapse can be frequent in hysterectomized patients. The frequency is very variable; it is ranges from 7.16% to 50%, depending from some factors and some studies, and it is higher in women hysterectomized for POP compared to women hysterectomized for other benign diseases (e.g. fiborids abnormal uterine bleeding) [3,10]. The surgical approach for POP uses different techniques with the common goal of correction of anatomical defects and resolution of clinical symptoms. The surgical procedures for the correction of vaginal vault prolapse range from vaginal to abdominal approach. The most common vaginal procedures are sacrospinous ligament fixation, uterosacral suspension, vaginal mesh, colpocleisis. The most common abdominal techniques are sacrocolpopexy, uterosacral ligament vault suspension, paravaginal repair [11]. Sacrocolpopexy seems to best achieve these objectives [3]. Both the Cochrane collaboration and the National Institute for Clinical Excellence (NICE) recommended abdominal sacrocolpopexy with mesh as optimal surgical treatment for vaginal vault prolapse and it would appear that this procedure can be performed either open or laparoscopically with similar outcomes [11]. There are a variety of products available for sacrocolpopexy but the most currently used product is polypropylene mesh [9]. Recently, Martín Del Olmo et al. showed significant improvements in multicompartmental symptomatology when skilled surgeons used minimally invasive techniques. In particular they reported 78.26% of patients with improvement in defecatory function, 55% of women with improvements in urinary symptomatology and 93.75% of patients with improvement in symptoms related to the first compartment [3]. Van Zanten et al. showed a significant improvement in sexual function in patient with POP after minimally invasive prolapse surgery, with a 48% of patients' sexual function improvement after surgery [4]. According to the recent literature, the incidence of intraoperative complications is low and it is very important to recognize them during the operation. The most common complication is

bladder injury with an occurrence of 2% [12]. Other complications described in literature are bowel injury (0-3%) and injury of main blood vessels (0-1%) [13]. Since 2005 robot assisted laparoscopic sacrocolpopexy emerged as a possible alternative to classic laparoscopic technique [14]. In a recent review, the clinical outcomes of prolapse surgery were similar between robot assisted laparoscopic sacrocolpopexy and classic laparoscopic sacrocolpopexy, with similar blood loss (114.4 ml vs 160.1 ml, P= 0.36) and similar incidence of intraoperative/postoperative complications (P = 0.85 vs P= 0.92), but robot surgery was less efficient in terms of cost and time [6]. Adhesions commonly result from pelvic surgical procedures and after multiple laparotomies; the incidence of adhesions may be about 93% [15]. Adhesions are often implicated in common complications as pelvic pain, infertility, intestinal obstruction [15]. They can also increase the technical difficulty of surgical procedures, as in the presented case report. Laparoscopic surgery can minimize adhesions formation for the minimal trauma to peritoneum and for reduced intra-abdominal contact with foreign bodies as gauze sponges [16]. Kavic and Kavic reported some direct comparisons of the impact of laparoscopy and laparotomy in adhesions and showed a preponderance of evidence (7 of 12 studies) sustaining benefits of laparoscopy in reducing adhesions [16]. In another survey conducted in German hospitals, adhesions were believed to develop in 15% of cases after laparoscopy [17]. Removal of postsurgical adhesions needs a second surgical operation with a high risk of new adhesion formation. It can be important use preventive measures as adhesion barriers useful to separate the peritoneum from damaged tissue for a minimum of 3-5 days [8,18].

4. CONCLUSION

Abdominal surgical procedures for the treatment of multicompartmental POP are effective and safe techniques and have low rates of morbidity and recurrence. Laparoscopic procedures would appear to have similar outcomes compared to open techniques and laparoscopy itself could reduce the incidence of adhesions respect to laparotomy. However, complex adhesions cases can increase the difficulty of surgical procedures for POP representing a challenge for laparoscopic surgeons. Future researches are still necessaries to prevent formation of surgical adhesions.

CONSENT

All authors declare that written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

As per international standard written ethical permission has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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