Laparoscopic management of iatrogenic high rectovaginal fistulas (Type VI)

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ABSTRACT

Most rectovaginal fistulas are acquired. Obstetrical trauma and types of surgery such as laparoscopic-assisted vaginal hysterectomy may cause high rectovaginal fistulas. The high fistulas are repaired by abdominal approach, while middle or low fistulas are best approached perineally. There are not many reports of totally-laparoscopic repair available in the literature. We present two patients who had a (Type VI) high rectovaginal fistula following laparoscopic-assisted vaginal hysterectomy. Laparoscopic repair was successfully performed by suturing the defects and fixing an omental patch between the rectum and vagina. The postoperative period was uneventful. Diagnosis and exact location of the fistula is critical in the management. Laparoscopic repair of high rectovaginal fistulas is feasible in most patients. Proper identification of tissue planes and good laparoscopic suturing technique is crucial for success. The issue of rectovaginal fistulas needs to be addressed in this era of laparoscopy, with particular reference to laparoscopy-assisted vaginal hysterectomy.

Keywords: iatrogenic Type VI rectovaginal fistula, laparoscopic-assisted vaginal hysterectomy, laparoscopic repair, rectovaginal fistula

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INTRODUCTION

Rectovaginal fistula (RVF) is defined as an epithelium-lined communication between the rectum and vagina. Most RVFs are located at or just above the dentate line. They are mostly acquired (obstetric), although congenital abnormalities do exist. Abdominal surgeries such as hysterectomies, low anterior resections and ileo-anal anastomosis also carry the risk of developing an RVF.[1] The fistula may result from a direct injury during the surgery, from infection or anastomotic leak postoperatively. RVFs can be classified into two types: low and high varieties. Low RVF is located between the lower third of the rectum and the lower half of the vagina. A high fistula is located between the middle third of the rectum and the posterior vaginal fornix. Small-sized fistulas are less than 0.5 cm in diameter, medium-sized fistulas are 0.5–2.5 cm and large-sized fistulas exceed 2.5 cm.

A more detailed classification is as follows: Type I: intact perineum with defect in the external sphincter; Type II: loss of perineal body (obstructed labour); Type III: loss of perineal body with low RVF; Type IV: intact perineum with low RVF; Type V: RVF involving the middle third of the rectovaginal wall; and Type VI: RVF involving the upper third of the rectovaginal wall, typically following hysterectomy. Although the perineal approach is preferred for the low variety, high fistulas are best approached transabdominally. There are very few reports in the literature mentioning laparoscopic primary closure of RVF following laparoscopy-assisted vaginal hysterectomy (LAVH). We present laparoscopic repair of Type VI RVF in two patients.

CASE REPORTS

Case 1

The patient was a 56-year-old obese (BMI, 32) woman who developed RVF following LAVH. She was admitted with complaints of passing flatus and faeces per vagina for 11 months. LAVH with bilateral salphingo-oopherectomy was done 18 months back for leiomyoma uterus. She started passing flatus and faeces per vagina four weeks after the surgery. A Type VI fistula was confirmed by vaginography. Colostomy was not performed. She was referred to us for the possibility of a laparoscopic repair.

Case 2

This patient was a 48-year-old woman who underwent LAVH for fibroid of the uterus. Five days later, she developed peritonitis. Laparotomy revealed an ileal perforation, possibly due to unrecognised trocar injury. Perforation closure and peritoneal toilet was done. After a month, the patient developed discharge of faecal matter and flatus through the vagina. She was also passing stools via naturalis. A proximal diversion

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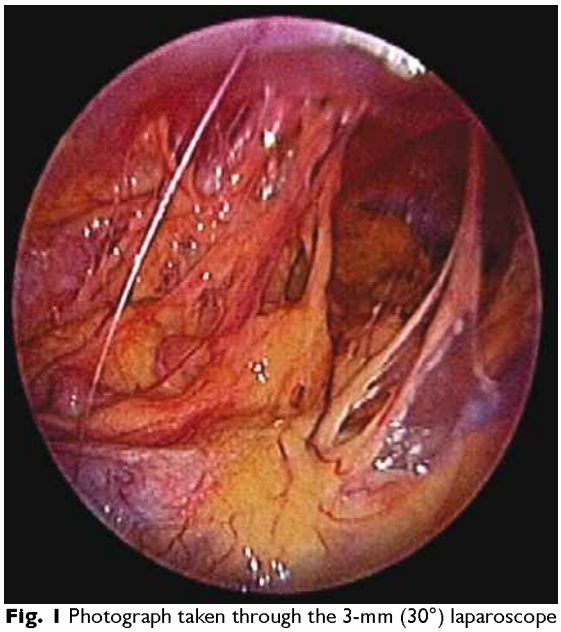

Fig. 1 Photograph taken through the 3-mm (30°) laparoscope shows the adhesions.

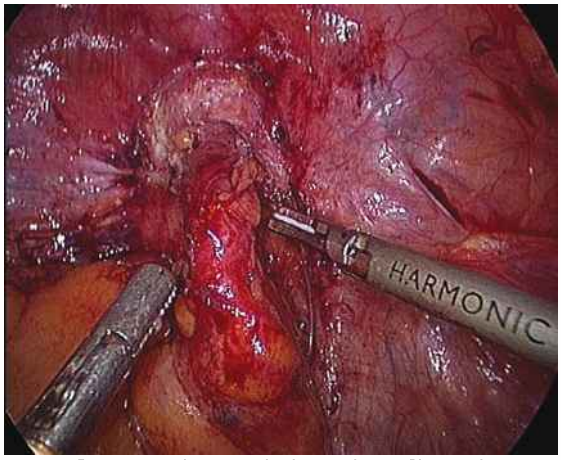

Fig. 2 Operative photograph shows dense fibrosis between the rectum and the vaginal vault.

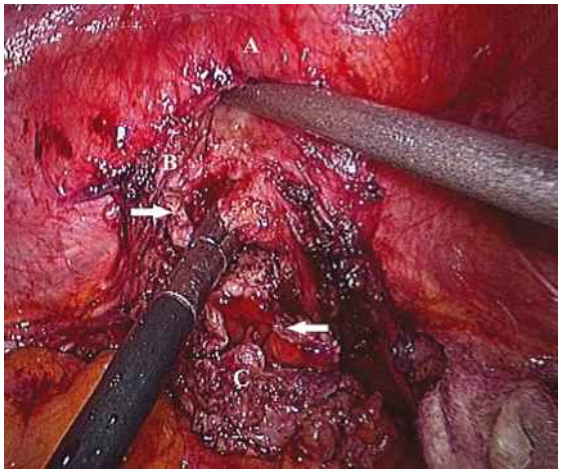

Fig. 3 Operative photograph shows the (A) urinary bladder; (B) vaginal vault opening (arrows); and (C) rectal opening.

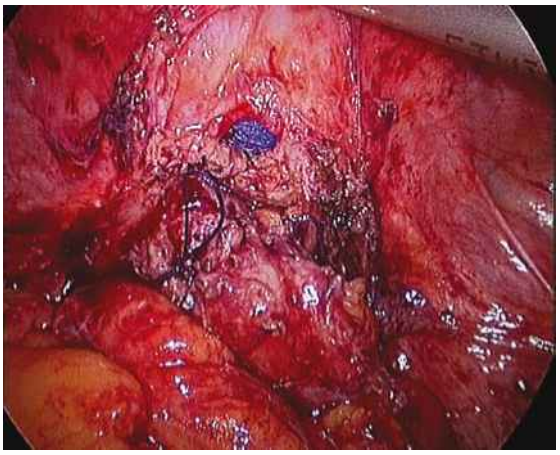

Fig. 4 Operative photograph shows the transversely-closed rectum.

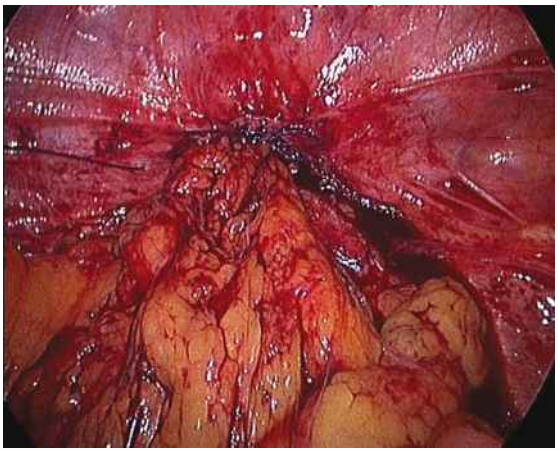

Fig. 5 Operative photograph shows the closed vaginal vault and rectum at completion of the procedure.

colostomy was done and she was referred to our institute after one month for definitive correction. Vaginal examination revealed a small area of induration high in the vault. Instillation of methylene blue into the rectum with a vaginal tampon confirmed a Type VI fistula.

Surgical procedures

The surgical procedure was exactly the same for both patients. After thorough bowel preparation and prophylactic antibiotics, the patients were placed in the modified lithotomy position. Continuous urinary bladder drainage was achieved using a Foley's catheter. The operating and camera surgeon stood on the patient's right, and the assistant stood on the left. Pneumoperitoneum was established through a Veress needle introduced in the epigastrium. First, a 3-mm trocar was inserted in the epigastric incision. A 3-mm (30°) laparoscope was used to view the peritoneal cavity, which revealed extensive adhesions (Fig. 1) that

were separated. A 10-mm supra-umbilical port for 30° laparoscope; a 5-mm trocar (left hand working) in the left lumbar area, along the left anterior axillary line; a 5-mm trocar (right working port) in the right lumbar area, along the right anterior axillary line; and a 5-mm trocar (colon retraction) in the left upper midclavicular line were inserted.

There was dense fibrosis between the rectum and the vaginal vault that was dissected using a 5-mm Harmonic Ace scalpel (Ethicon, Cincinnati, USA) (Fig. 2). On retraction of the rectum, a 1-cm fistula between the vault of the vagina and the middle third rectum was seen. With the urinary bladder pushed away using a suction nozzle, the tract was opened and both the vaginal and rectal openings were clearly visualised (Fig. 3). Resection of the fibrous fistulous tract was done with the 5-mm Harmonic Ace scalpel. The rectum was then mobilised about 3-cm distally to facilitate closure. The rent on the rectal side was closed transversely in a single layer (interrupted) with 2 0 Vicryl by intracorporeal sutures (Fig. 4). The vaginal side of the rent was also approximated with 2 0 Vicryl in a single, continuous layer (Fig. 5).

An omental patch was fixed in-situ between the repaired rectum and vagina. A thorough wash was done and a tube drain was placed in the pelvis through the left side port site. The proximal colostomy was preserved for six weeks and was closed thereafter. The postoperative period was uneventful. The patient was started on oral fluids on the third postoperative day (POD). The drain was removed on fifth POD and the patient was discharged the next day. On follow up after nine months, the patient had no specific complaints. There was no recurrence, confirmed by vaginography.

DISCUSSION

Obstetrical trauma is the most common cause of RVFs, with an incidence of 88%.[2] Acquired fistulas can occur due to surgery, obstetrical causes, trauma, infection, inflammatory bowel disease, rectovaginal endometriosis, carcinoma and radiation. Indeed, RVF is an important complication that is to be considered in the era of laparoscopy. With the use of laparoscopic techniques in hysterectomies, the incidence of RVF could increase. Inexperience is probably the most likely cause. Significant psychosocial and sexual dysfunction are also an issue. The fistulous opening may be seen as a small dimple or pit, and occasionally can be gently probed for confirmation. Evaluation of established RVFs with endorectal ultrasonography and transvaginal ultrasonographical examination is important if the patient complains of incontinence or if the underlying cause is obstetric trauma. High fistulas may not be readily apparent on physical examination or vaginal inspection and may even be missed by endoscopy. Methylene blue enema with a vaginal tampon in place is used to confirm the diagnosis. Vaginography with a water-soluble contrast medium has a reported sensitivity of 79%–100%.[3] The management depends on size, location, cause, anal sphincter function and overall health status of the patient. Treatment of established RVFs should always be surgical. Abdominal approach (for high RVFs) includes fistula division and closure with or without bowel resection and use of local flaps, such as the bulbocavernosus flap and a variety of muscle and musculo-cutaneous flaps for the repair of large defects.[4]

Laparoscopic management of the RVFs is still in its infancy. Laparoscopic resection of the sigmoid colon, along with the fistulous tract and intracorporeal colorectal anastomosis, has been reported.[5] Some surgeons like Pelosi and Pelosi have performed laparoscopic upper rectovaginal mobilisation to facilitate the transvaginal repair of a recurrent RVF.[6] Total laparoscopic repair is still rare, because of the complexity of the procedure. Nezhat et al reported the correction of two cases of RVF by laparoscopy.[7] Our cases are probably the first few reported cases of RVF following LAVH that has been repaired successfully by a total laparoscopic technique. Laparoscopic repair of RVF has all the advantages of minimal access surgery like minimal wound complications, less postoperative pain and early recovery. We conclude that laparoscopic resection of simple high RVFs with primary intracorporeal closure is feasible, with or without protective colostomy.

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