Rectovaginal Fistula with Anastomotic Stricture Post Anterior Resection – Sphincter Preservation, a Viable Option

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Abstract Rectovaginal fistula [RVF] is a devastating complication of anterior resection whose incidence worldwide is on a rise with widespread use of staplers for the rectal anastomosis. It is a special surgical challenge for the treating surgeon with limited suitable options available to treat this difficult situation. As there is no consensus on its management, most often patient ends up with permanent stoma and overall inferior quality of life. We are presenting a case of post anterior resection RVF which was treated with intersphincteric resection followed by hand sewn coloanal anastomosis. An intersphincteric resection avoids dissection in a previously violated rectovaginal plane and improves chances of sphincter preservation. A well vascularized colonic graft with hand sewn coloanal anastomoses well below the site of fistula and omental interposition further avoids the chances of recurrence of fistula.

Keywords Recto vaginal fistula · Intersphincteric resection · Post anterior resection stricture

Introduction

Rectovaginal fistula [RVF] is defined as an abnormal, epithelium lined communication between rectum and vagina.

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Obstetric trauma is the most common cause of RVF worldwide. With widespread use of staplers, incidence of RVF as a complication of rectal resection is on rise [1]. RVF is devastating for the patient and challenging for the surgeon. Though multiple surgical options have been described in the literature for the treatment of this debilitating illness, there is no consensus on its management yet. We report a case of RVF after anterior resection in which successful repair was performed using intersphincteric resection followed by hand sewn coloanal anastomosis.

Case Report

Forty seven year old lady, a case of upper third rectal cancer underwent anterior resection with transverse colostomy after neoadjuvant chemo radiotherapy. Post operatively she received adjuvant chemotherapy. At 6 weeks after completing the chemotherapy she was planned for transverse stoma closure. Barium enema revealed stricture at the anastomotic site (Fig. 1a). Sigmoidoscopy revealed only a stricture and no fistula. Biopsy from the stricture site ruled out local recurrence. Hence stricture was dilated followed by closure of transverse colostomy. Post operatively, patient complained of passing feces per vagina. Gastrograffin enema revealed a rectovaginal fistula at 7 cm from anal verge with stricture present just distal to the fistulous tract which was consistent with the findings on digital rectal examination (Fig. 1b). In view of above she was planned for re anterior resection.

In view of the previous surgery and presence of the RVF, there were adhesions in the pelvis on exploratory laparotomy. Hence, a dissection from an abdominal approach to resect the lower rectum and the fistula was deemed hazardous. In order to avoid a Hartmann's procedure which would mean a permanent colostomy, it was decided to proceed with resection via an intersphincteric

Fig. 1 **a** Barium enema showing stricture at the anastomotic site [Red arrow]. **b** Gastrograffin enema showing stricture [Red arrow] with the contrast extravasation in vagina [Black arrow]. **c** Intersphincteric

resection with hand sewn colo anal anastomosis. **d** Pre ileostomy closure barium enema showing descending colon anastomotic site and rectum

approach in a virgin plane. Lone star retractor was applied for the exposure after draping the perineum. Saline adrenaline solution was injected sub mucosally just distal to the dentate line to reduce bleeding. Then an incision was made through the infiltrated area and deepened dividing the internal sphincter. Dissection was then carried out between internal and external sphincter till the level of pelvic floor. Above this, anterior dissection was carried out between the rectum and vagina along the rectovaginal septum. Once the fistulous tract was encountered, involved part of the posterior wall of vagina was excised. The rest of the rectal dissection was performed in the TME plane. Once the remnant rectum was dissected off on all the sides, descending colon was delivered through the anus. Remnant rectum just proximal to the fistula was divided. Defect in the posterior wall of the vagina was closed primarily. Hand sewn colo anal anastomosis was performed between the descending colon and anal canal with Vicryl 3/0 (Fig. 1c).

Intra and post-operative course was uneventful and she was advised pelvic floor exercises. Three months post resection, anal manometry revealed normal basal and squeeze pressure. X ray loopogram showed normal passage of contrast with complete healing (Fig. 1d) and hence ileostomy was closed. At 3 months follow up patient is asymptomatic with acceptable continence.

Discussion

Reported incidence of RVF after anterior resection is 0.9–10 % [2, 3]. RVF is often caused by error in surgical technique with the incidence of this complication being inversely proportional to the experience and skill of the operating surgeon. Posterior vaginal wall getting caught in the circular stapler is the single most important causative factor. Incomplete separation of the rectal stump from the posterior vaginal wall as well as excess anterior angulation of the stapler gun may lead to posterior vaginal wall being compressed by the anvil and partially resected by the circular knife [1]. Direct trauma, suture insufficiency, secondary infection of a hematoma and pre or post-operative chemo radiotherapy are the other contributing factors [4]. Patients with RVF typically present with flatus / feces discharging through vagina. Bidigital examination often demonstrates the site of fistulous opening in case of low RVF and aids in assessing the sphincter function. Colonoscopy with biopsy from the site of fistula may be required to rule out recurrence of cancer. MRI demonstrates the fistulous tract and is key in planning surgical treatment [5].

Treatment of RVF is a special surgical challenge. No randomized trials or guidelines are available on the surgical management of RVF. Hence there are multiple options available and most often the treatment has to be individualized. Various options available are diversion colostomy alone, local

repair with interposition of healthy tissues and resection with re anastomosis. Proximal colostomy diverts fecal stream from the fistula, decreases local inflammation and hence should promote healing though successful healing is reported in only 35.3 % cases [6]. Direct local repair involves resection of the fistulous tract, repair of the defect and interposition of well vascularized tissue. Approach for local repair may be endorectal, trans vaginal or trans perineal. Various tissue options available for interposition include omental flap, gracilis flap, adipose tissue from labia majora [7], bulbocavernosus [8], pubococcygeus [9] and gracilis muscle [10]. Direct local repair though attractive because of its minimally invasive nature is often unsuccessful since anovaginal septum is a thin, poorly vascularized structure with successful healing reported in 66.7 % cases [6].

Resection with re anastomosis removes all the poorly vascularized tissue and results in prompt healing. Rex and Khubchandani compared the various treatment options for the repair of the RVF and found that re anastomosis was most successful in healing of the RVF [6]. In the current case, re anastomosis was attempted via trans abdominal approach. But extensive adhesions in the pelvis rendered dissection through the rectovaginal septum difficult and unsafe with the possibility of devitalized posterior vaginal wall. Dissection through the intersphincteric plane with resection of the fistula preserved greater part of posterior vaginal wall. A well vascularized colonic graft with hand sewn coloanal anastomoses well below the site of fistula and omental interposition avoided the possibility of recurrence of fistula. Thus sphincter was preserved and a likely Hartmann procedure was avoided. Though this approach seems attractive, it needs experience to dissect through the right plane.

Conclusion

Rectovaginal fistula with stricture post anterior resection is a surgical challenge in terms of sphincter preservation. An

intersphincteric resection avoids dissection in a previously violated rectovaginal plane and improves chances of sphincter preservation with low risk of recurrence of rectovaginal fistula.

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