

Successful Transvaginal Primary Closure of Rectovaginal Fistula After a Low Anterior Resection for Rectal Cancer: Report of a Case

Osamu WATANABE, Hajime YOKOMIZO, Minoru MURAYAMA, Kazuhiko YOSHIMATSU,
Keiichiro ISHIBASHI, Tadahiko HIROTANI* and Kenji OGAWA

Department of Surgery (Director: Prof. Kenji OGAWA),

Tokyo Women's Medical University Daini Hospital

*Shin-Yahashiradai Hospital

(Accepted Apr. 28, 2004)

Rectovaginal fistula (RVF) is a rare disease that may occur as a stapler-related complication after a double-stapled anastomosis in a low anterior resection. We report a successfully treated case of RVF by transvaginal primary closure without fecal diversion. A 51-year-old woman developed RVF 6 months after a low anterior resection because of rectal cancer. The walls of the vagina and the rectum were separated by injecting 1% xylocaine with epinephrine into the vaginal submucosa and the fistula was excised. The rectal wall and the vaginal wall was each closed separately by interrupted sutures, which cured the disease without fecal diversion.

Key words: rectovaginal fistula, rectal cancer, transvaginal closure

Introduction

Rectovaginal fistula (RVF) is a rare disease that may occur as a stapler-related complication after a double-stapled anastomosis in a low anterior resection performed due to rectal cancer¹⁾²⁾. RVF leads to extremely distressing symptoms such as vaginal flatus, fecal leakage, vaginal discharge resulting in difficult management. Most cases are treated surgically, which usually involves a fecal diversion followed by a second operation to close the fistula²⁾.

We used transvaginal primary closure and successfully repair a RVF. We describe here the technique and the usefulness of the method used.

Case Report

A 51-year-old woman underwent both a low anterior resection of the rectum and a total hysterectomy because cancer found in the lower part of the rectum invaded the uterus. The resection of the rectum was performed by a double-stapling technique³⁾. The cut end of the vagina was closed using two layers of uninterrupted absorbable sutures. Ap-

proximately 2 months after surgery, the patient began to experience occasional leakage of feces from the vagina. Colonoscopy revealed a RVF. The patient was admitted for surgery 6 months later because the fistula failed to improve.

Barium enema showed a RVF of approximately 3 mm in diameter at the anastomosis site (Fig. 1a). Colonoscopy revealed a fistula opening in the anterior rectal wall of approximately 5 cm from the anal verge (Fig. 1b).

Surgical procedure (Fig. 2)

Under spinal anesthesia, the patient was placed in the lithotomy position. Using the method described by Kojima et al⁴⁾, the vaginal lumen was stretched by passing silk thread through the left and the right labia majora and minora, with one end of each thread passing through the skin of the thigh approximately 5 cm from the labia majora, and then tied. A fistula opening of approximately 1 mm in diameter was seen in the vaginal lumen. The walls of the vagina and the rectum were separated by in-

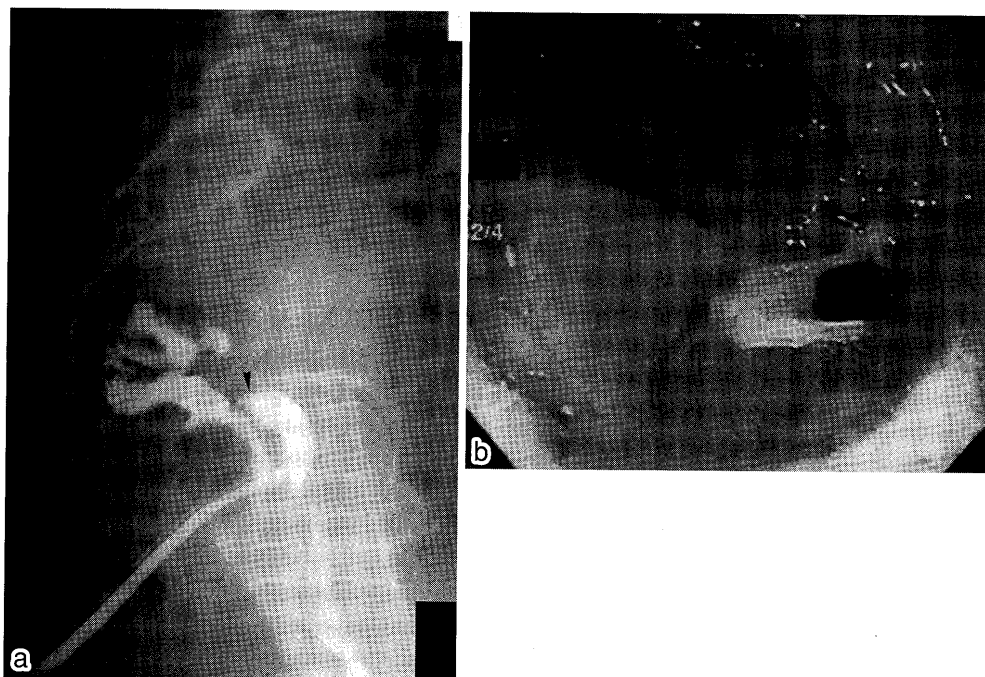


Fig. 1 a: Barium enema revealed a rectovaginal fistula 3 mm in diameter at the anastomotic site (arrow head). b: Colonoscopy showed a fistula opening in the anterior rectal wall 5 cm from the anal verge.

jecting 1% xylocaine with epinephrine into the vaginal submucosa. The vaginal wall was resected in a spindle shape and the fistula was excised. No staples existed at the fistula site. The rectal wall was closed with 7 4-0 absorbable sutures using the Gambee suture technique, and finally, the vaginal wall was closed with 8 interrupted 4-0 absorbable sutures.

All procedures were done by transvaginal approach. No residual cancer was seen in the resected fistula. The patient resumed eating by mouth from day 5 after surgery and made satisfactory progress. Colonoscopy approximately 2 months after surgery showed only a scar at the fistula site (Fig. 3). There has been no recurrence of the fistula at 12 months after surgery.

Discussion

Rectovaginal fistulas are often associated with obstetric injury or Crohn's disease^{5,6} but have also been variously reported to occur as a complication of low anterior resection using double-stapling in 2.2%⁷ to 2.9%⁸ of the cases. The possible mechanism of RVF formation from using double-stapling was proposed by Arbman⁹. As the stapler is closed

and fired, the anterior wall of the rectum is pulled backward and together with it, the posterior wall of the vagina is pulled. The posterior vagina wall may thus very easily be included in the circular staple line, even if the rod of the circular stapler is introduced behind the horizontal staple line. Most RVFs are treated surgically, which involves creating a diverting colostomy followed by a second operation to close the fistula.

Various surgical procedures have been employed to repair RVFs after low anterior resections². Simple diverting colostomy resulted in a relatively low successful spontaneous healing rate of 35.3%. Endoanal repair also demonstrated a low successful healing rate of 62.5% in staged repair with stomal diversion and of 66.7% in repair without diversion². Nakagoe et al⁸ obtained good results using a modified transvaginal approach to repair a fistula due to double-stapling with a vaginal mucosal advancement flap, as reported by Bauer et al¹⁰. However, these authors also state that a diverting stoma is essential. Kojima et al⁴ used transvaginal primary closure to successfully repair rectovaginal fistulas caused by double-stapling, after the initial failure of

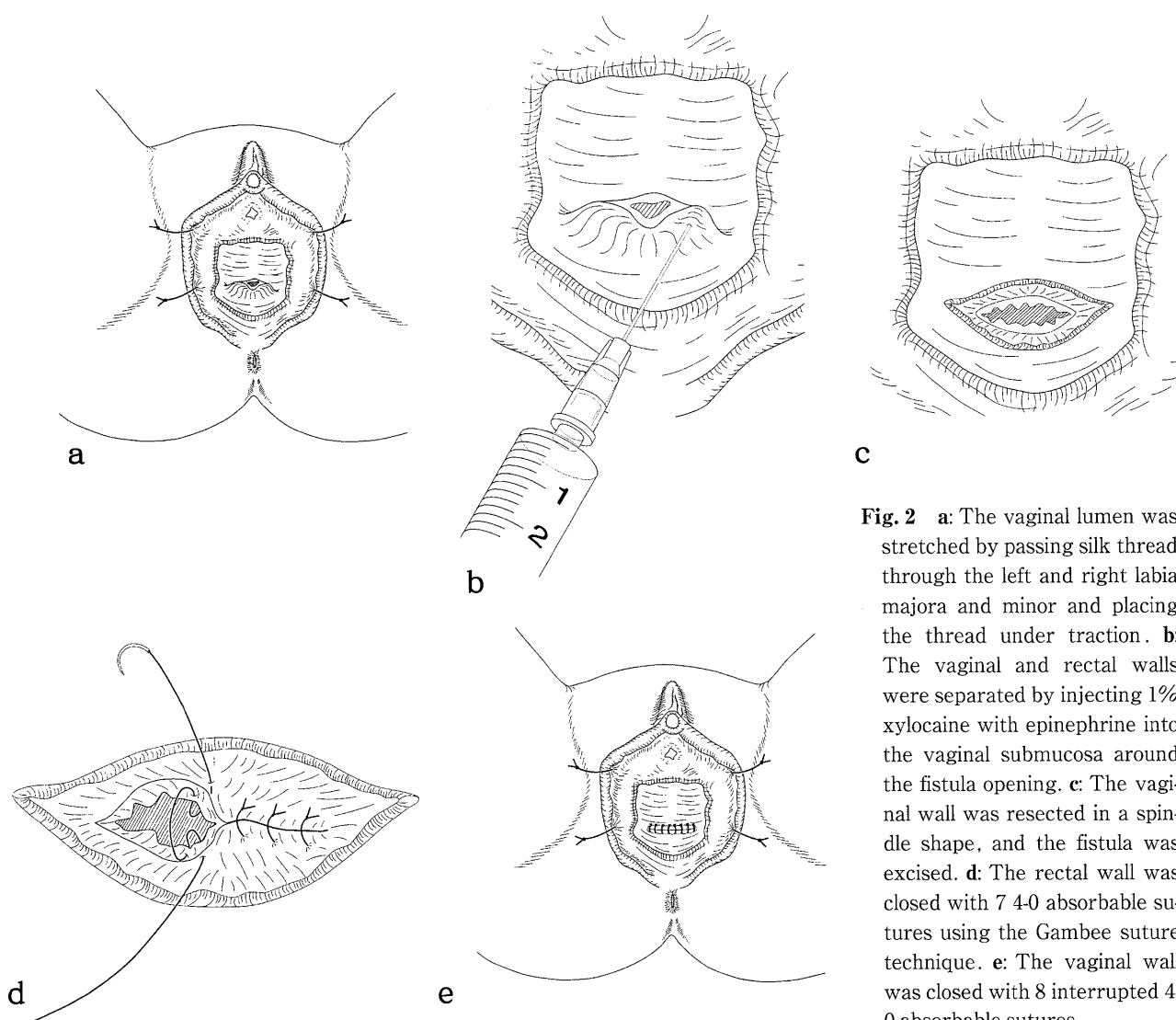


Fig. 2 **a:** The vaginal lumen was stretched by passing silk thread through the left and right labia majora and minor and placing the thread under traction. **b:** The vaginal and rectal walls were separated by injecting 1% xylocaine with epinephrine into the vaginal submucosa around the fistula opening. **c:** The vaginal wall was resected in a spindle shape, and the fistula was excised. **d:** The rectal wall was closed with 7 4-0 absorbable sutures using the Gambee suture technique. **e:** The vaginal wall was closed with 8 interrupted 4-0 absorbable sutures.

transanal simple closure followed by intravenous hyperalimentation.

In the present case, we basically followed the technique reported by Kojima et al⁴⁾ and successfully repaired a RVF using transvaginal primary closure without a fecal diversion. Transvaginal primary repair is an excellent technique that has several major advantages. First, the opening of a rectovaginal fistula caused by double-stapling can be directly visualized transvaginally. The fistula can be completely resected by separating the rectal and vaginal walls, and the defects in the rectal and vaginal walls left after resection of the fistula can each be closed with layer-to-layer sutures. In addition, the procedure is simple and does not require fecal



Fig. 3 Colonoscopy approximately 2 months after surgery showed only a scar at the fistula site.

diversion. We therefore recommend this surgical procedure for the repair of RVFs caused by double-stapling.

References

- 1) Redmond HP, Austin OMB, Clery AP et al: Safety of double stapled anastomosis in low anterior resection. Br J Surg **80**: 924-927, 1993
- 2) Rex JC Jr, Khubchandani IT: Rectovaginal fistula: complication of low anterior resection. Dis Colon Rectum **35**: 354-356, 1992
- 3) Cohen Z, Myers E, Langer B et al: Double stapling technique for low anterior resection. Dis Colon Rectum **26**: 231-235, 1983
- 4) Kojima T, Miyashita A, Kanemitsu T et al: A case of rectovaginal fistula occurring after double stapling technique and healing with transvaginal approach for surgical repair (In Japanese with English abstract). Nippon Daicho-komon-byo Gakkai Zasshi (J Jpn Soc Coloproctol) **52**: 31-35, 1999
- 5) Halverson AL, Hull TL, Fazio VW et al: Repair of recurrent rectovaginal fistulas. Surgery **130**: 753-758, 2001
- 6) Soriano D, Lemoine A, Laplace C et al: Results of recto-vaginal fistula repair: retrospective analysis of 48 cases. Eur J Obstet Gynecol Reprod Biol **96** (1): 75-79, 2001
- 7) Antonsen HK, Kronborg O: Early complication after low anterior resection for rectal cancer using the EEA™ stapling device. Dis Colon Rectum **30**: 579-583, 1987
- 8) Nakagoe T, Sawai T, Tuji T et al: Successful transvaginal repair of a rectovaginal fistula developing after double-stapled anastomosis in low anterior resection: report of four cases. Surg Today **29**: 443-445, 1999
- 9) Arbman G: Rectovaginal fistulas and the double-stapling technique. Dis Colon Rectum **36**: 310, 1993
- 10) Bauer JJ, Sher ME, Jaffin H et al: Transvaginal approach for repair of rectovaginal fistulae complicating Crohn's disease. Ann Surg **213** (2): 151-158, 1991

直腸癌前方切除後の直腸腔瘻に対して一期的閉鎖術を成し得た 1 例

東京女子医科大学 附属第二病院 外科 (指導: 小川健治教授)

*新八柱台病院

渡辺 修・横溝 肇・村山 実・吉松 和彦
石橋敬一郎・広谷 忠彦*・小川 健治

直腸癌に対する double stapling technique (DST) を用いた低位前方切除術の合併症としての直腸腔瘻は比較的稀である。しかし直腸腔瘻を合併した場合、その治療に苦慮することも多い。今回、直腸腔瘻に対し経腔的閉鎖術で治療した症例を経験したので報告する。症例は 51 歳、女性。子宮への直接浸潤が疑われた直腸癌に対し、DST による低位前方切除術、子宮全摘術を施行した。術後約 2 ヶ月よりときどき腔より糞便の漏出を認めるようになったため、大腸内視鏡検査を施行したところ、直腸腔瘻を認めた。瘻孔発症後 6 ヶ月を過ぎても軽快しないため手術目的に入院した。注腸造影検査で吻合部に一致して径約 3mm の直腸腔瘻を認めた。大腸内視鏡検査では肛門縁より約 5cm の直腸前壁に瘻孔開口部を認めた。手術は腰椎麻酔、載石位で施行した。左右の大陰唇、小陰唇に 2-0 絹糸を等間隔にかけ、その各糸の一端を大陰唇より約 5cm 離れた大腿皮膚にかけ、それぞれを結紮し、腔内腔を伸展した。腔内腔に径約 1mm の瘻孔開口部を認めた。粘膜下にエピネフリン入り 1% キシロカインを注入し、腔壁と直腸壁を解離し、腔壁を紡錘形に切除し、それに続けて瘻管を切除した。直腸壁は 4-0 吸収糸で Gambee 縫合を 7 針施行した。腔壁は 4-0 吸収糸で全層結節縫合を 8 針施行し、手術を終了した。摘出した瘻孔に癌の遺残は認めなかった。術後 5 日目より経口摂取を開始し、経過良好であった。術後約 2 ヶ月の大腸内視鏡検査では瘻孔部は癒痕として認められるのみであった。術後 12 ヶ月後の現在も直腸腔瘻の再発は認めていない。直腸癌に対する DST を用いた低位前方切除術の合併症としての直腸腔瘻に対し、経腔的閉鎖術を行った。本例のような小瘻孔に対してはこのような方法も有効であると考えられる。