

Case Report

Transperineal Repair of Rectourethral Fistula: Surgical Technique and a Case Report

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A 60-year old Thai male diagnosed as iatrogenic rectourethral fistula. Preoperative investigation with intravenous pyelogram revealed connection between urethra and rectum. Colonoscopy also revealed fistula opening at mid-rectum. He underwent surgery via transperineal approach. Intraoperative fistula localization was performed using Methylene blue injection via foley catheter. The fistula tract was identified and divided exposing blue-staining tract. Rectal opening and urethral opening were repaired. Fecal and urthral diversion were performed. Postoperative period was uneventful. The final pathologic report of fistula tract was fibrosis. The perineal and rectal wounds were healed without complication. The suprapubic cystostomy catheter was removed at the end of the second month together with the colostomy closure.

Keywords: Rectourethral Fistula, Transperineal repair, Levator ani muscle

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Various surgical procedures have been described for treatment of rectourethral fistula⁽¹⁾. However, no single procedure has been accepted as the treatment of choice for this condition. The authors herein described their technique of transperineal approach to identify and repair the fistula tract.

Case Report

A 60-year old, Thai man with diagnosis of iatrogenic rectourethral fistula for 2 years was operated on. Pre-operative intravenous pyelography demonstrated the connection between urethra to rectum and two vesical calculi. Colonoscopy did reveal the 1 cm fistula opening on rectal site without mass. The patient was placed in the lithotomy position. Foley catheter was inserted and retained in place to assist localization of fistula tract. The incision was made in inverted v-shape fashion starting from the most inferior part of bulbocavernosus muscle and extending to both ischial tuberosities (Fig. 1). The

dissection was carried downward and the flap was raised. The perineal muscle landmarks including superficial transverse perineii, the perineal body, and bulbocavernosus muscle were all identified. Further access was provided by gentle dissection in the plane just below the perineal body until the anterior rectal



Fig. 1 Perineal incision

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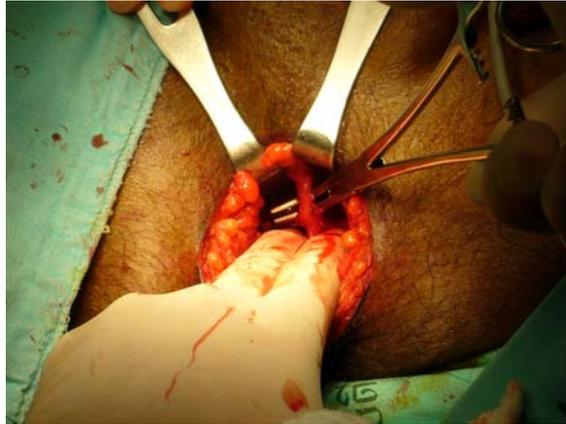


Fig. 2 Identification of fistula tract

wall was clearly visualized. Intraoperative localization using methylene blue injection via urethra while the tampon was inserted in the rectum clearly demonstrated the existence of fistula tract. In this patient, the authors firstly used bidigital palpation by the surgeon's right index finger performing the rectal examination to locate the rectal opening as well as the right thumb to locate the tract in the operative field (Fig. 2). Due to its height from anal verge, it was difficult to palpate along the entire fistula tract with this technique. Therefore, the authors performed bimanual palpation using the finger of the left hand instead of the right thumb. The fistula tract was identified and the tract was divided which

revealed the staining of methylene blue. The rectum was mobilized away from the urethra and the remaining tract at the rectum was debrided and repaired in two layers using Vicryl 3-0. The parts of levator ani muscle were used to interpose between the rectum and urethra to prevent the recurrence (Fig. 3). Urethral defect was repaired over the Foley catheter using chromic catgut 3-0. The perineal wound was then closed in layers with drainage (Fig. 4). Right-sided transverse colostomy was performed as fecal diversion. Both vesical calculi were removed and suprapubic cystostomy was performed as urinary diversion. The total operative time was 6 hours and 40 minutes. The final pathologic report of fistula tract was fibrosis. The patient came for the follow up one month later. The perineal wound and rectal wound had healed nicely (Fig. 5, 6) and the Foley catheter was removed at this time. Suprapubic cystostomy catheter was removed at the end of the second month together with the colostomy closure.

Discussion

Rectourethral fistula is a challenging problem due to its difficult accessibility in a previously operated and sometimes irradiated field. The main determinant of the surgical approach for rectourethral fistula is the height of rectal opening, which is usually located in the mid-rectum. Several surgical approaches and procedures have been described in the literature including transanal, transphincteric, transperineal, posterior and abdominal approach⁽²⁾. In addition,

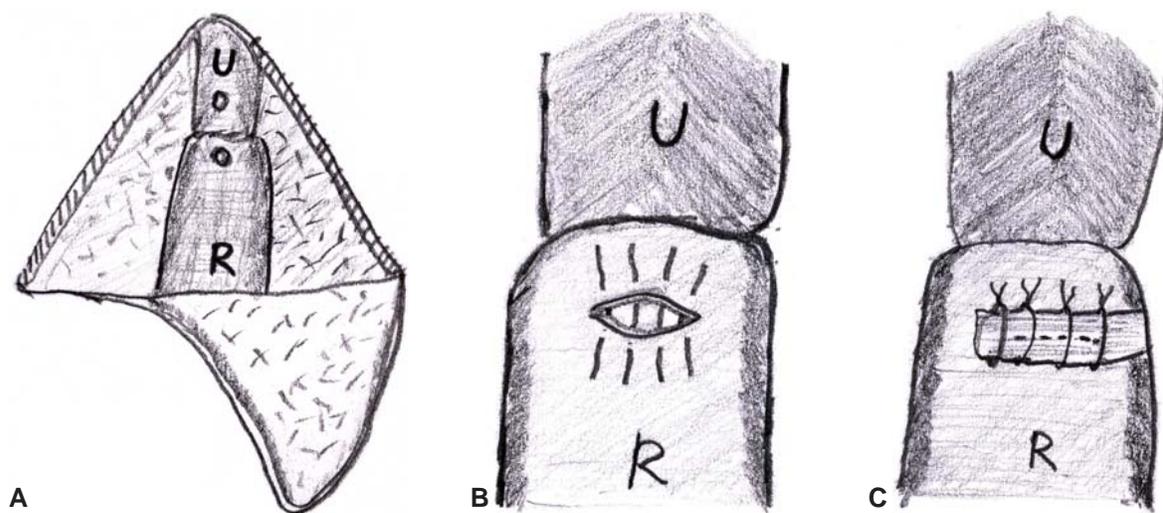


Fig. 3 (A) Urethral and rectal defect after excision of fistula tract, (B) Transverse closure of rectal defect, (C) levator ani muscle interposition



Fig. 4 Perineal incision was closed with drainage



Fig. 5 Healed perineal wound after 8 weeks

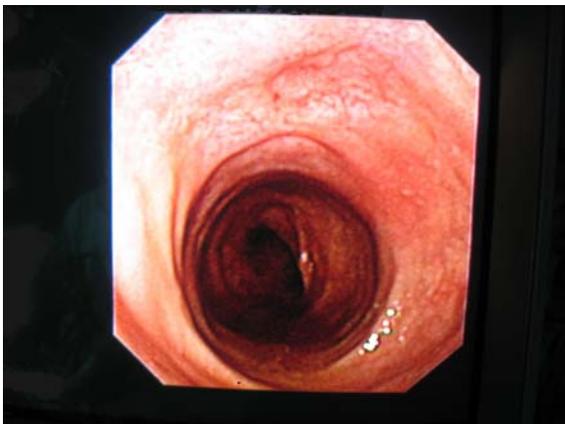


Fig. 6 Rectal wound completely healed from colonoscopy

various procedures have been used for treatment including rectal advancement flap, direct repair with tissue reinforcement, and direct repair with tissue interposition⁽³⁻⁶⁾.

The perineal approach was first described by Young & Stone in 1917⁽²⁾. The procedure consists of dissection of rectum away from the sphincters, dividing the fistula tract, closure of the urethral opening and mobilization of the rectum further cephalad in such a way as to pull the rectum caudad out of the anus where it was then transected and discarded, suturing the proximal rectum to the anal skin. Lewis in 1947 modified this operation by interposing part of levator ani muscle between the repairs⁽⁷⁾. The largest series of this approach was reported in 1958 by Goodwin et al. A series of 22 cases of rectourethral fistula was repaired transperineally using levator ani muscle interposition⁽⁸⁾.

The authors approach provides optimum exposure to the anterior rectal wall and allows for complete separation of urinary and fecal stream. Intraoperative localization with methylene blue injected via urethra assists in identification of fistula tract. If methylene blue stains with tampon in the rectum, the fistula tract is still intact. The blue color staining in the tissue will confirm that the surgeon has already entered into the correct fistula tract. However, a few aspects of principle of this technique should be emphasized. These include precise anatomic location of fistula, careful hemostasis, and debridement of fistula tract followed by layer closure without tension. A diverting transverse colostomy with insertion of a suprapubic and indwelling Foley catheter for three months will allow for a decrease in the inflammatory response surrounding the involved area and result in good healing. Timing of colostomy closure is crucial and should be individualized according to the post-operative course.

Conclusion

Surgery of rectourethral fistula is technically demanding. Transperineal approach provides excellent exposure for dissection. Intraoperative methylene blue injection via urethra allows correct identification of fistula tract. This technique is useful and effective and can be offered as an alternative option to other surgical approaches.

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การผ่าตัดซ่อมแซมรูติดต่อระหว่างไส้ตรงและหลอดปัสสาวะผ่านทางฝีเย็บ: วิธีการผ่าตัดและรายงานผู้ป่วย 1 ราย

วิวัฒน์ สุวรรณธรรมา, วิทย์ วิเศษสินธุ์, จักรพันธ์ เอื้อนรเศรษฐ์, ไชยรัตน์ ทรัพย์สมุทรชัย, ชลิลลา พรหมทอง

ผู้ป่วยชายไทย อายุ 60 ปี ได้รับการวินิจฉัยว่ามีรูติดต่อระหว่างไส้ตรงและหลอดปัสสาวะ การตรวจฉีดสีไตก่อนผ่าตัดพบว่ารูติดต่อระหว่างไส้ตรงและหลอดปัสสาวะ การส่องกล้องลำไส้ใหญ่พบว่ารูเปิดของรูติดต่อนี้ที่บริเวณส่วนกลางของไส้ตรง ผู้ป่วยได้รับการผ่าตัดโดยผ่านทางฝีเย็บ การตรวจหารูติดต่อนี้ในขณะที่ผ่าตัด ทำโดยการฉีดสีเมธิลีนบลูเข้าไปผ่านทางสายสวนปัสสาวะ เมื่อหารูติดต่อนี้พบจะพบสีน้ำเงินอยู่ภายในขนาดแผลทางด้านหลอดปัสสาวะ และทางไส้ตรงได้รับการเย็บซ่อมแซม หลังจากนั้นได้ทำการเบี่ยงเบนทางเดินอุจจาระ และปัสสาวะหลังผ่าตัดผู้ป่วยสบายดีไม่มีปัญหาอะไร ผลการตรวจชิ้นเนื้อของรูติดต่อนี้พบว่าเป็นพังผืดขนาดแผลที่ฝีเย็บและที่ไส้ตรงหายเป็นปกติ ท่อสวนปัสสาวะทางหน้าท้องได้รับการถอดออกในปลายเดือนที่สองหลังผ่าตัด และทำการปิดรูเปิดลำไส้หน้าท้องไปด้วยกัน