Tube-Flap for Management of Complex Recto-Urinary Fistula with York Mason Technique : A Case Report

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Abstract

Recto-urinary fistula results as a complication following trauma to the perinium and pelvis. These fistulas are difficult to treat and have a high recurrence rate due to the difficult surgical approach in repairing them. Both the transabdominal or transperineal approaches used in repairing these fistulas are difficult and provide only limited exposure to the fistula being repaired. In the case report, we present a patient with complex recto-urinary fistula due to trauma to the pelvis 20 years previously. In this patient we used the transphincteric York Mason approach to directly approach the fistula, followed by construction of a tube flap connecting the bladder and the urethra. The technique is simple, easy and the outcome has been excellent after 4 years of follow-up.

Key word : Recto-Urinary Fistula, Recto-Vesical Fistula, Recto-Urethral Fistula, Transphincteric Approach, York Mason Technique

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York Mason approach is a transphincteric approach to rectal lesions which provides excellent exposure and ease in repairing recto-urethral and recto-vesical fistulas. We report a complex (recto-vesical and recto-urethral) fistula that was successfully managed by this technique.

A complex fistula of this nature is difficult to repair because of its location deep in the pelvis. The transabdominal approach is technically difficult and demanding, leading to a low success rate. The perineal approach is likewise difficult and leaves the repaired areas of rectum and prostatic

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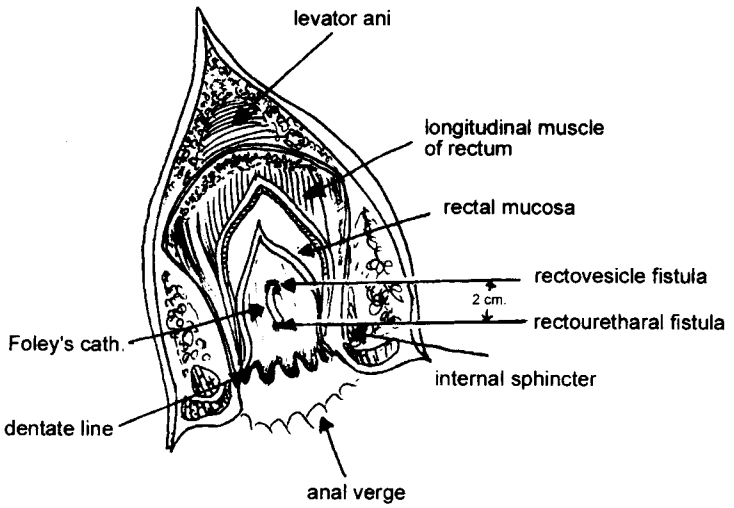

Fig. 1. Rectovesicle and recto-urethal fistula were demonstrated from posterior view.

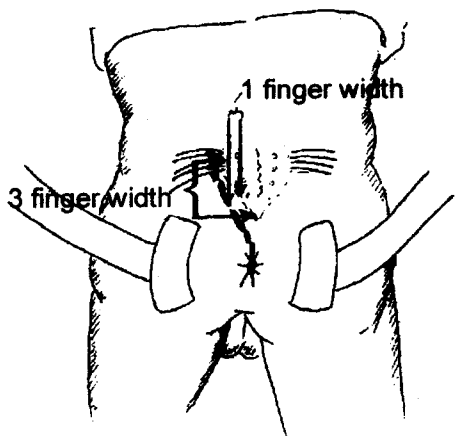

Fig. 2. Position and landmark.

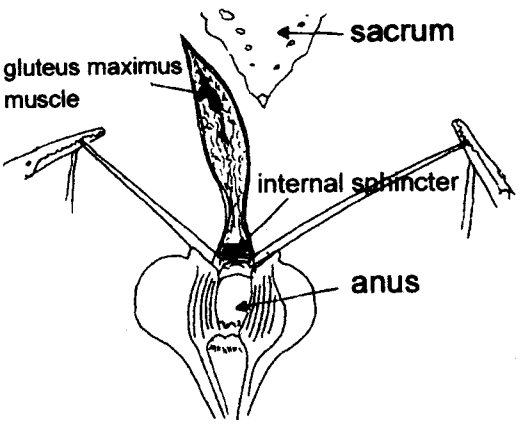

Fig. 3. Incision.

urethra overlying each other without intervening healthy tissue, which produces a high incidence of recurrence. The transphincteric York Mason technique is simple and avoids the surgical difficulties faced in the transabdominal and transperineal approaches(1-4,6,7,10,11).

History

Present History

A 32 year old Thai male, was referred to us due to vesical stone detected on plain KUB film 1 week prior to his referral. The patient gave a history of dysuria of 3 months and was medically treated with subsequent resolution. One week before, the patient had complained of recurrence of dysuria. A plain KUB film was performed and showed a vesical stone.

Past History

Twenty years previously, the patient was involved in an accident and suffered a blunt rupture of the urinary bladder. The patient underwent

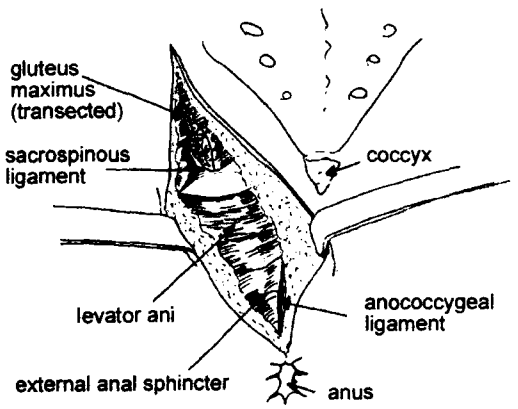

Fig. 4. Layer by layer dissection.

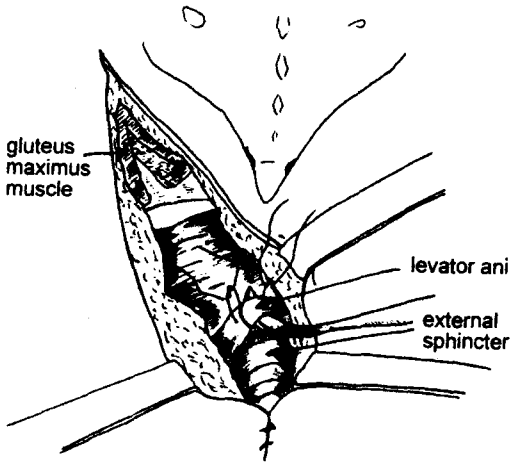

Fig. 5. Individually incised and tagged.

abdominal exploration for bladder repair at a provincial hospital. Since then, the patient has complained of concomitant passage of stools mixed with urine on defecation.

Physical findings

The physical examamination on general was within normal limits, except for a midline scar at the lower abdomen and scarring at anterior rectal wall approximately 4-6 centimeters from the anal verge on rectal examination. On rectal examination, feces mixed with urine were also present.

Investigations

Urine analysis showed 20-30 WBC/HPF, 5-10 RBC/HPF and many bacteria. A large opaque vesical stone was seen on plain KUB film, a vesico-rectal fistula and grade 4 vesico-ureteral reflux was demonstrated on pyelogram. This recto-vesical fistula was also demontrated on barium enema. Aside from the recto-vesical fistula, an urethro-rectal fistula with urethral stricture was also visualized on retrograde urethrogram film.

Treatment

The patient was managed initially (August 1992) by transabdominal vesicolithotomy with sigmoid loop colostomy. Visual internal urethrotomy and bladder catherterization were then performed followed by repair of the fistula *via* the peranal approach.

Postoperatively, the patient had an uneventful recovery and remained catheterized for 3 weeks. Upon removal of Foleys' catheter, the passage of urine per rectum recurred.

In November 1992, the patient underwent a second attempt to repair his complex fistula using the York-Mason technique. An internal urethrotomy was performed, a Foleys' catheter was manipulated through the urethro-rectal fistula and recto-vesical fistula into the bladder (Fig. 1).

Surgical technique

The patient was placed in the jack-knife position and the buttocks were strapped apart with adhesive tapes (Fig. 2). The incision was made from the anal margin in the posterior midline and passed to the left of midline, extending upward for 3 finger widths above the tip of the sacrum and 1 finger width parallel from the sacrum (Fig. 3).

The anocutaneous junction at the tip of the incision was marked with stay sutures and the subcutaneous fat was then incised with cautery. The gluteus maximus muscle, sacrospinous ligament, levator ani muscle, and external anal sphincters then came into view (Fig. 4). These structures were then individually incised and tagged with color-coded sutures (Fig. 5).

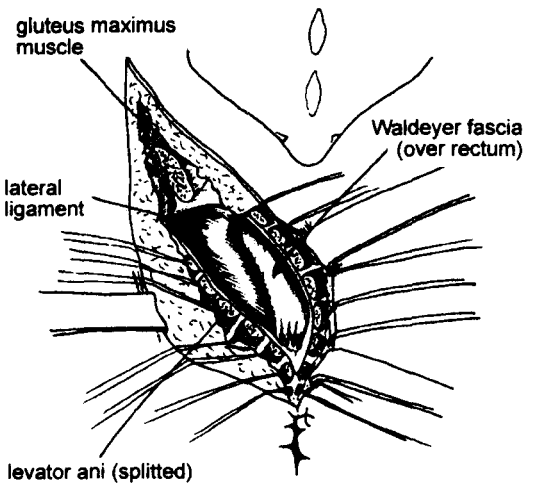

Fig. 6. Waldeyer fascia and lateral ligament.

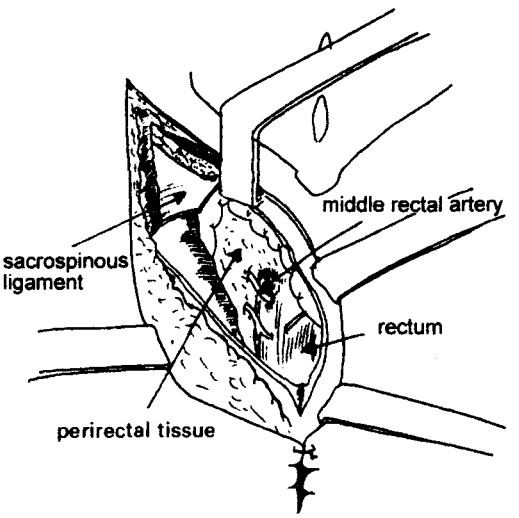

Fig. 7. Perirectal tissue.

The division of external sphincter and levator ani muscles was kept as close as possible to the midline in order to spare the nerve and blood supply to the external sphincters and the levator ani muscle. Once these muscles were divided, the Waldeyer's fascia and the lateral fascial wings came into view (Fig. 6). The Waldeyer's fascia was then incised in the midline and retracted laterally. With the Waldeyer's fascia retracted laterally, the underlying rectum was seen covered with hemorroidal vessels (Fig. 7). The posterior rectal wall was then opened and the two fistular openings identified (Fig. 8). A full-thickness of the anterior rectal wall was then incised in a flap like manner and a tube flap was constructed from this incised rectal flap. This tube flap effectively connected the openings between the bladder and the prostatic urethra thus converting the complex recto-urinary fistula into a vesico-urethral fistula (Fig. 9-13)[5-7,12].

The defect in the anterior rectal wall was then repaired and was followed by the closure of the previously opened posterior rectal wall. The previously divided Waldeyer's fascia was reapproximated, followed by accurate reapproximation of the divided muscle groups. A low-pressure drain (Jackson Pratt) was placed above the repaired muscles. Subcutaneous fat and the skin were then closed.

Postoperative care

The patient wasn't allowed anything per oral and maintained on broad-spectrum intravenous antibiotics for the next 5 days. Foley's catheter was removed after 3 weeks and the rectum remained dry without further leakage of urine into the rectum. The patient's colostomy was closed 6 months later. After four years of follow-up, the patient has been doing fine with no further passage of urine per rectum. Intravenous pyelogram and cystourethrogram four years after the repair showed good excretory function of both kidneys with no fistula or extravasations seen on the cystourethrogram.

DISCUSSION

Recto-urinary fistulas are uncommon. The complex recto-urinary fistula presented here is even more uncommon. Recto-urinary fistulas usually occur due to trauma, malignancy, inflammatory rectal conditions, and more commonly due to iatrogenic injury during prostate surgery.

Traditionally, these fistulas are repaired *via* the transabdominal and the transperineal approach. Both these techniques are difficult and produce not so encouraging results. In repairing these fistulas, the surgeon also faces a high chance of having a recurrence if the technique of repair is limited due

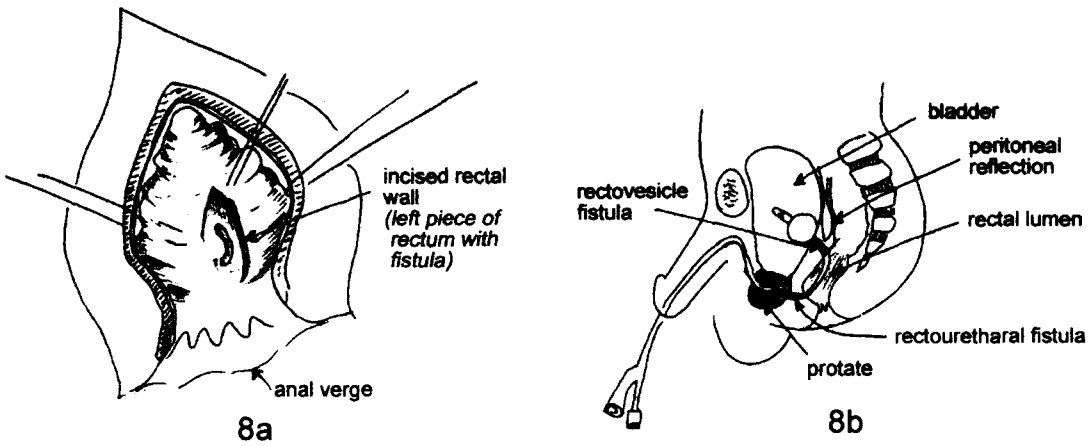

Fig. 8A, B. The 2-fistula were identifed.

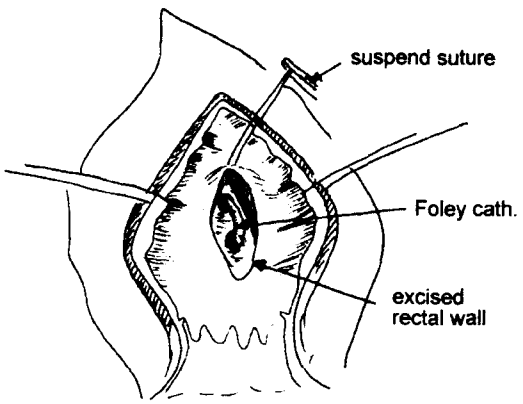

Fig. 9. Rectal wall was excised all layer in elliptical shape.

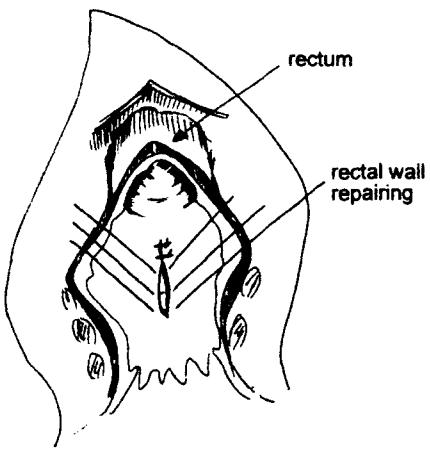

Fig. 10. Posterior rectal wall was repaired.

to poor exposure. The fistula in this case report had been repaired previously by the perianal technique and had recurred. The patient had also undergone previous multiple lower abdominal surgical procedures making the transabdominal technique of repair difficult and less attractive[1-4].

The York-Mason transphincteric approach as presented in this paper is simple and easy to perform. It avoids entering the abdominal cavity but rather provides an alternate and excellent exposure to the fistulas by opening the posterior rectal wall. The York-Mason approach requires the division of the sphincter mechanism of the rectum but it has been shown that accurate reapproximation of the sphincters prevents incontinence and preserves anal control[2-6,8-10]. The complex fistula in this case

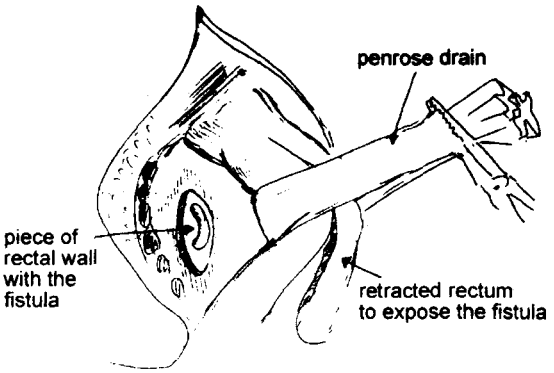

Fig. 11. Isolated piece of rectal wall with the fistula.

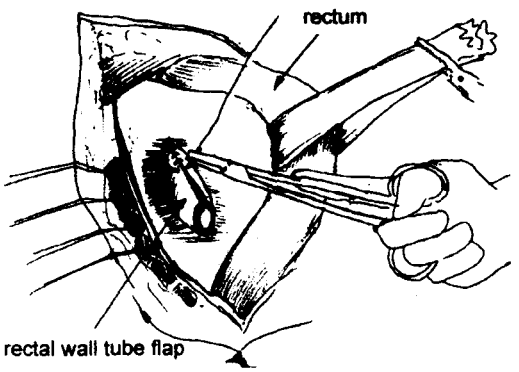

Fig. 12. Piece of rectal wall with the fistula, making to a tube flap.

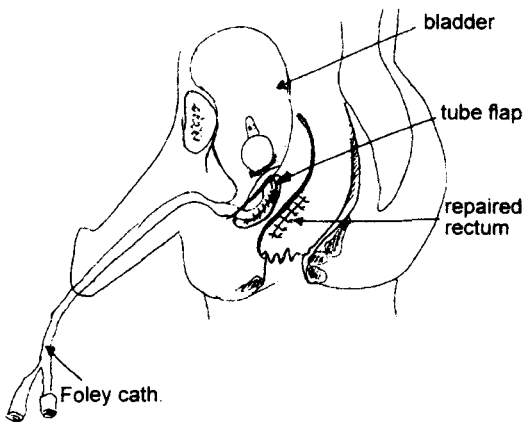

Fig. 13. Tube flap cover the fistula with Foley stent.

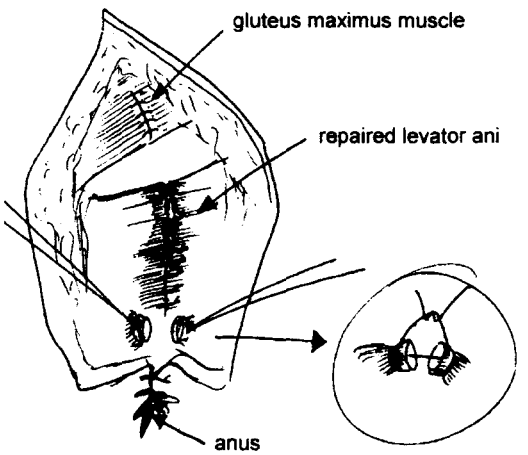

Fig. 14. Accurate reapproximation of the devided muscle.

was repaired with a tube flap constructed from the rectal wall. This effectively created a bypass means of urine drainage from the bladder to the prostatic urethra. The fistula openings were not excised because this would have created a big defect in the prostatic urethra and would have increased the likelihood of leakage, recurrence, and stricture following the repair. To our knowledge, there are no other reports of a similar approach taken to repair this type of complex fistula. Our patient has been doing fine after four years of follow-up[11,12].

In conclusion, the York-Mason technique is a simple and easy way to manage recto-urethral and recto-vesicular fistulas. Careful closure of the sphincter mechanisms and rectal wall ensure the success of the operation.

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การผ่าตัดรักษาผู้ป่วยที่มี complex recto-urinary fistula โดยการทำ tube flap ด้วยวิธี York Mason technique : รายงานผู้ป่วยหนึ่งราย

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Recto-urinary fistula เป็นภาวะแทรกซ้อนที่เกิดหลังอุบัติเหตุบริเวณหัวเหน่าและอุ้งเชิงกราน ภาวะแทรกซ้อนนี้เป็นภาวะที่ให้การรักษาให้หายขาดได้ยากและมีโอกาสเป็นซ้ำใหม่ได้ เนื่องจากเป็นตำแหน่งที่ผ่าตัดเข้าไปซ่อมแซมได้ยาก ลำบากไม่ว่าจะเป็นการผ่าตัดเข้าทางช่องท้องหรือการผ่าตัดเข้าทาง perinium ซึ่งเป็นเทคนิคที่ใช้กันโดยทั่วไป รายงานผู้ป่วยรายนี้ เป็นรายงานความสำเร็จของการแก้ไขภาวะแทรกซ้อนดังกล่าว ในผู้ป่วยที่มี complex recto-urinary fistula ประกอบด้วย recto-vesical และ recto-urethral fistula ที่เกิดหลังอุบัติเหตุประมาณ 20 ปี โดยใช้เทคนิคการผ่าตัดแบบ trans-phincteric approach (York Mason technique) ร่วมกับการทำ tube flap ของส่วนที่เกิด fistula พบว่าเป็นเทคนิคที่ทำได้ไม่ยากและให้ผลการรักษาที่น่าพอใจหลังติดตามการรักษาเป็นเวลา 4 ปี

คำสำคัญ : การผ่าตัดรักษาทางติดต่อระหว่างลำไส้ใหญ่กับทางเดินปัสสาวะ, การผ่าตัดรักษาทางติดต่อระหว่างลำไส้ใหญ่กับกระเพาะปัสสาวะ, การผ่าตัดรักษาทางติดต่อระหว่างลำไส้ใหญ่กับท่อปัสสาวะ, การผ่าตัดด้วยวิธียอร์ค-เมสัน, การผ่าตัดลำไส้ใหญ่ส่วนปลายผ่านกล้ามเนื้อหูรูด

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