

Spontaneous ventral urethral fistula in a young healthy man and a modified surgical technique of urethral fistula repair

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Abstract

Urethral fistula is rare and is usually a complication of penile and urethral surgery. A few congenital cases have been reported. Also, one acquired spontaneous case in a diabetic man has been reported. We present the first case in the literature of a healthy man with a spontaneous ventral urethral fistula, with unknown etiology. We performed a modified technique of urethral fistula repair (four-layer technique).

Introduction

Urethral fistula is rare and usually a result of infectious complications, trauma or surgery.¹ Acquired cases have been reported after blunt penile trauma or straddle injury, but the development of fistulas remains exceptional even under these circumstances. Even after complex hypospadias repair, it is reported in no more than 10% of cases.^{2,3} Isolated congenital anterior urethrocutaneous fistula is extremely rare and few cases have been reported.⁴ Congenital urethral fistulas are seen as rare anomalies, usually in combination with anorectal malformations.⁵ To our knowledge, no case of a spontaneous ventral urethral fistula in a young healthy man has been reported to date. Fistula repair is individualized and includes simple multilayer fistula closure; it may involve the techniques employed in hypospadias surgery or more complex reconstruction of the distal urethra and glans.⁶

Case report

A 21-year-old male was admitted to the urology department because of an additional opening on the ventral side of the penis, which was present for 7 years (he was voiding through both openings). His medical history included a circumcision at age 3; he had no other medical conditions. A small pimple appeared on the ventral penis 2 months before the fistula

occurred. Physical examination revealed bilateral normally positioned testes, a normal glans, no chordee, a normal external urethral meatus and an additional opening on the ventral side of the penis. Distal urethra was patent and surrounded by spongiosum. The fistula was about 1 × 1 cm in diameter (Fig. 1). A 14 Foley urethral catheter was passed through the fistula, which came out of the glandular meatus suggesting an intact distal urethra. His systemic examination was not significant for any specific disorder. Blood urea nitrogen and serum creatinine levels were 11.6 and 0.9 mg/dL, respectively. Serum glucose level was 84.8 mg/dL and his white blood cell count was $6.8 \times 10^9/L$. The urine analysis and abdominal sonography were normal.

Multilayer fistula closure was planned because the fistula tract was large. A circumferential incision was made around the fistula, and the urethral wall was dissected from the surrounding tissue. The dartos flap from the lateral side and the skin flap from the proximal side of the fistula were created (Fig. 2). The fibrous fistula tract was excised and the laceration was closed in two layers (urethra and corpus spongiosum) with 6/0 vicryl sutures, while the catheter was inside (Fig. 3). The first layer was the urethral edge and the second layer was the spongy body. The lateral dartos fleb was sutured with 5/0 vicryl on the closed fistula and the proximal skin fleb was sutured with 4/0 vicryl on the dartos fleb (Fig. 4). The fistula was closed tension-free in four layers. A 14 Foley catheter was left in place in the bladder for drainage. On removal of catheter on postoperative day 20, the fistula healed completely. After the 3-month follow-up, the patient had normal voiding, with no recurrence.

Discussion

Urethral fistulas are rare and their pathogenesis are usually due to infections, injuries or previous surgery (e.g., urethroplasty).¹ To our knowledge, one case of a spontaneous ventral urethral fistula, related to poorly controlled diabetes, has been previously reported.⁷ In our case, the patient was completely healthy, with no other medical conditions.



Fig. 1. The urethrocutaneous fistula on the ventral side of the penis.

Urethral fistula is a rare complication of penile and urethral surgery. A few congenital cases have been reported.⁴ In cases of an isolated fistula with intact spongiosum, repair with local flaps is sufficient. However, if the fistula is associated with deficient distal urethra, spongiosum, associated chordee or hypospadias, then formal hypospadias repair is recommended.⁸ There are different surgical options. Various techniques are proposed to repair these fistulas, including primary closure via Thiersch-Dupley urethroplasty, turned down flap urethroplasty and pedicled island tube, or onlay urethroplasty.⁹

The size and location of the fistula and status of the surrounding skin usually determine the optimum technique.¹⁰ It is believed whenever good penile skin is available, it should be used as the first choice.

Conclusion

We present a spontaneous ventral urethral fistula, with unknown etiology, in a healthy man. We used a modified

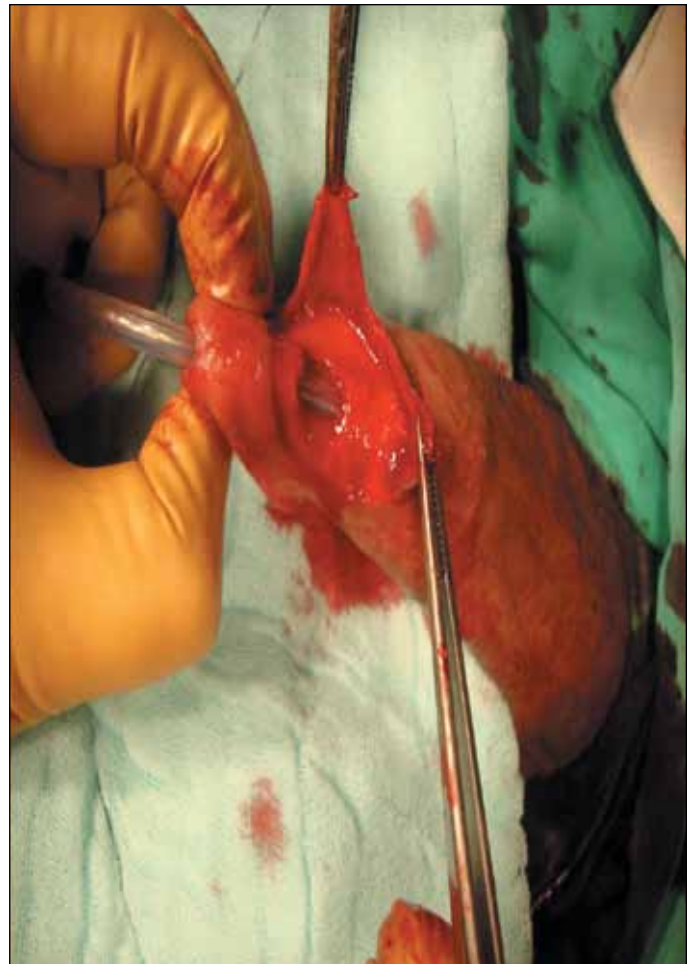


Fig. 2. The dartos flap from the lateral side and the skin flap from the proximal side of the fistula.

surgical technique of urethral fistula repair (the four-layer technique).

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Fig. 3. The fistula closed in two layers (urethra and corpus spongiosum).



Fig. 4. The fistula closed by lateral dartos fleb and proximal skin fleb.

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