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POINT OF VIEW

Perineal reconstruction: The use of a gracilis muscle flap for urethral fistula coverage, our point of view

Reconstruction périnéale : de l'utilité du lambeau de Gracilis dans la couverture d'une fistule urétrale, notre point de vue

Introduction

Reconstruction of extensive defects of the perineoscrotal area remains challenging. The most common cause of such defects is acute spontaneous gangrene with fulminant

progression, first reported by Fournier in 1888 [1]. This condition can induce testis exposure, urinary tract damage or extensive perineal substance loss [2]. Covering a urinary fistula is a complicated task due to the risk of stenosis or the recurrence of fistulas. No cases have thus far described management of urinary fistula associated with large-scale scrotal defects. The purpose of this report is to present the use of a gracilis muscle flap for urethral fistula coverage and improved scrotal contouring.

Case presentation

A 53-year-old man presented in emergency for abdominal pain, fever and extensive inflammatory edema of the scrotum (Fig. 1A) with no apparent cause of infection. Diagnosed with Fournier's gangrene, the patient underwent aggressive

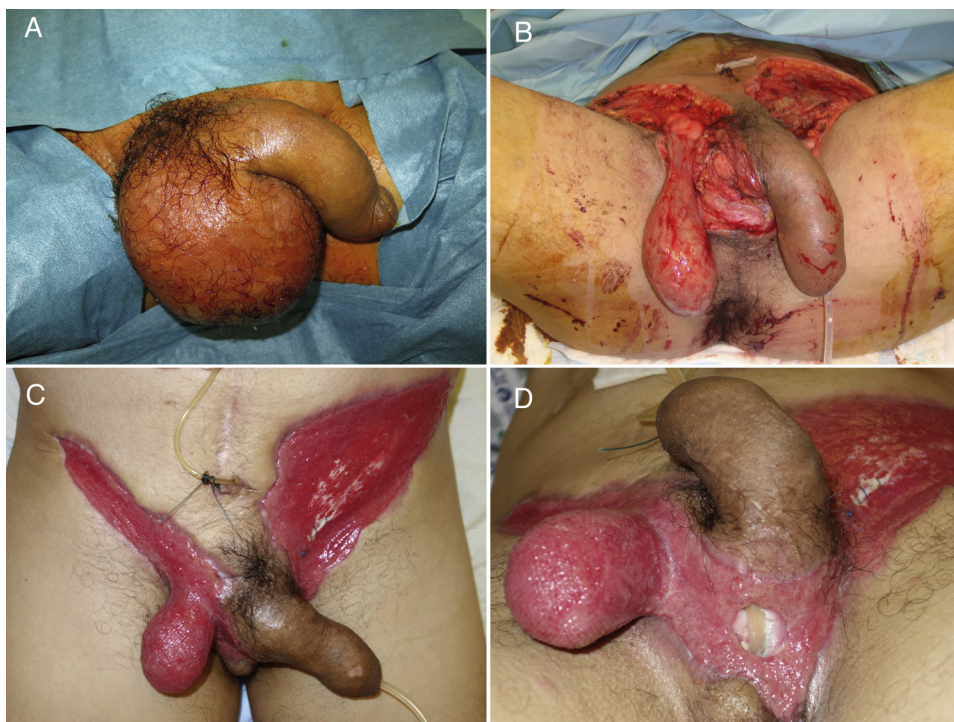


Figure 1 A. Fifty-three-year-old man with extensive Fournier's gangrene. B. An aggressive debridement is performed with a left orchidectomy. C. A suprapubic catheter was placed for urinary derivation, with a second catheter being inserted through the urethra to keep the duct open. D. The urethral fistula measured 2 × 2 cm.

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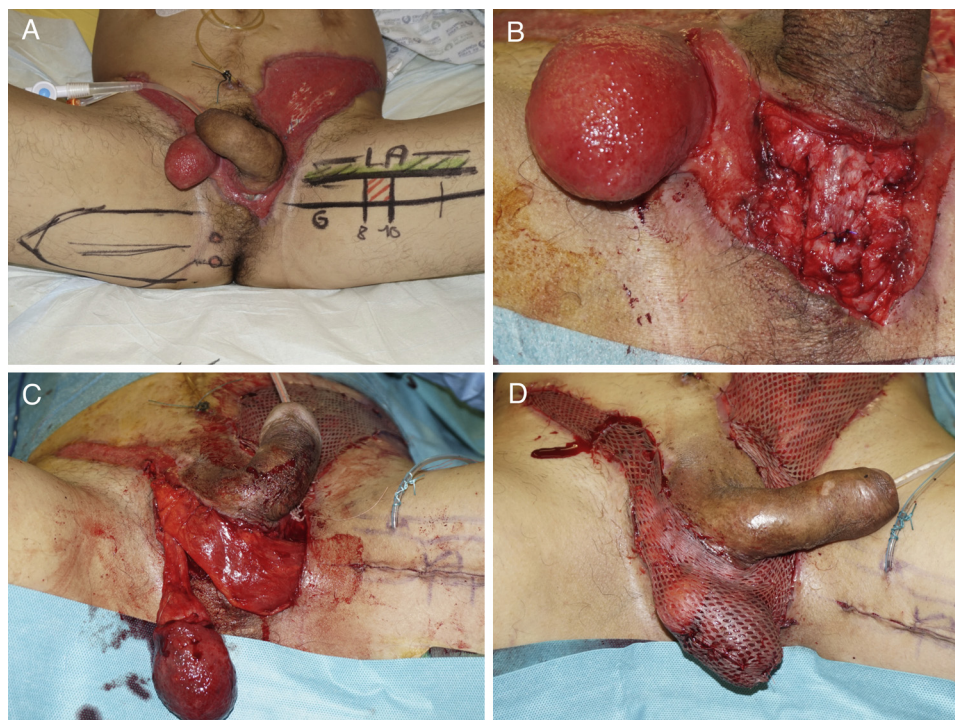


Figure 2 A. The adductor longus muscle tendon is first located and the shape of the gracilis is then designed over the pubic tuberosity to the medial tibial condyle. The proximal pedicle is located between 8 and 10 cm below the pubic spine. A propeller flap centered on pudendal perforators on the right thigh was designed in case an unusually distal pedicle had been found. B. The remaining urethra was dissected above and below the fistula to avoid any tension in performing the end-to-end anastomosis. C. The gracilis flap was raised as far as its main pedicle and tunneled up to the scrotal area. The flap was spread widely to cover the anastomosis and the scrotal area. The right testicle (retracted after secondary healing) was freed and fixed horizontally behind the penile base to recreate a natural scrotal volume. D. A simple meshed split-thickness graft (1.5) was performed.

debridement, causing a urethral fistula of 2×2 cm. To control fasciitis, a left orchidectomy was performed. A suprapubic catheter was placed for urinary derivation and a second catheter was inserted to keep the duct open (Fig. 1B). Following surgery, the patient was admitted to the critical care resuscitation unit with intravenous antibiotics. Healing was managed with simple, daily change of alginate bandages and paraffin gauze surrounding the remaining testicle.

After 3 weeks of healing, perineoscrotal reconstruction was performed (Fig. 1C and D). Urethral fistula coverage was indicated; our choice was a pedicled gracilis flap harvested from the left thigh. With the patient in frog-leg position, the adductor longus muscle tendon was first located; the proximal part of the gracilis was localized just behind the tendon. The shape of the gracilis was then designed over the pubic tuberosity to the medial tibial condyle. The proximal pedicle was located between 8 and 10 cm from the pubic spine. No imaging tools were used to preoperatively control the pedicle but in case the pedicle had been unusually distal, a propeller flap centered on pudendal perforators on the right thigh was outlined (Fig. 2A).

The first part of the surgery focused on urethral reconstruction. The remaining urethra was dissected above and below the fistula to avoid any tension in performing the end-to-end anastomosis (Fig. 2B). The gracilis flap was then raised. To reach the pedicle, dissection was done 8 to 10 cm below the pubic spine between the adductor longus

and the gracilis muscles. The entire muscle was then dissected as far as its distal tendon, which was cut. During this dissection, accessory pedicles were also clipped. The flap was then raised as far as its main pedicle and tunneled up to the scrotal area. The gracilis was spread widely cover the anastomosis and the scrotal area (Fig. 2C).

The right testicle (retracted after secondary healing) was freed and was fixed horizontally behind the penile base to recreate a natural scrotal volume. A simple meshed split-thickness graft (1.5) was performed (Fig. 2D).

Results

Ambulation was allowed on the 7th postoperative day. There was no donor site morbidity. At 3 weeks postoperatively, the wound had healed and since the patient showed no evidence of fistula during urethrocytography, the Foley catheter was removed (Fig. 3A). The patient left hospital 1 month after reconstruction with urinary and sexual functions intact. Scrotal contouring was cosmetically satisfying.

Discussion

Different techniques have been described for reconstruction after perineal gangrene, with varying functional and cosmetic outcomes. Simple skin grafting [3] is a widely used method, but different types of flaps have been described.

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