CLINICAL CASE

Management of recurrent stricture of the perineal meatus with the Blandy technique after penectomy secondary to corpora cavernosa abscess


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Abstract Perineal urethrostomy stricture is a frequent complication and its management is difficult to treat. The aim of this article was to describe the specific aspects related to the Blandy technique. A 62-year-old man had a past medical history of drainage of an idiopathic abscess of the corpora cavernosa. One year later he presented with necrosis of the glans penis and the corpora cavernosa and underwent partial penectomy. He then presented with complex stricture of the urethra that was resolved with first-stage Johanson repair. The patient was seen at the Plastic and Reconstructive Surgery Service and underwent resection of the penile remnant and the formation of a neophallus with a radial forearm free flap. He presented with necrosis and flap loss. Total penectomy and perineal urethrostomy were performed. One year later the patient presented with a decrease in urinary stream caliber and acute urinary retention that was resolved through cystostomy and perineal urethrostomy reconstruction. He presented with re-stricture that was treated with urethral dilations. The gradual diminishing of the urinary stream caliber persisted and so a perineal meatoplasty with the Blandy technique was performed. The surgical correction of perineal urethrostomy stricture with the Blandy technique is a valid and effective option in the treatment of this complication.

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Introduction

Perineal urethroplasty is a widely accepted option for the management of complex stricture of the anterior urethra and is most often used as the first stage in the reconstruction by stages or when total urethral restoration is not feasible. Stricture at the site of the perineal urethrostomy presents with a certain frequency in patients requiring this type of urethral reconstruction and its management is often a problem that is difficult to treat. Published information on the surgical correction of this complication is limited. Barbagli et al. recently published their 30-year experience with the posterior flap technique in perineal urethroplasty, which can also be used for the correction of perineal meatus stricture. This technique, originally described by Blandy as the hybridization of the principles established by Turner-Warwick, requires that the surgeon first determine the necessary length of the flap before making the incision in the skin. This procedure is especially difficult in obese patients or in those patients that present with abnormal perineal anatomy.

The Turner-Warwick technique was modified by Blandy because he found this procedure to be extremely difficult, with problems of stricture recurrence of the flap’s vertex near the verumontanum. In 1968, Blandy described the inverted U-shaped scrotal flap urethroplasty, which was much easier to perform and did not appear to result in recurrent stricture. Some time later, Blandy again described how he had developed this surgical technique, believing it to be an original one, but then he realized that it had already been described by Leadbetter, Gil-Vernet, Wells, and Williams.

Over the years, the two-stage procedures have been widely modified. In 1984 Schreiter described a new technique in stages using a skin graft and Venn and Mundy introduced the buccal mucosa graft in procedures by stages for patients with lichen sclerosis. In the era of single-stage procedure repair, there were still indications for urethroplasty in stages. The strictures associated with adverse local conditions such as fistula, false pathway, abscess, cancer, or a previous urethroplasty due to complex stricture, are better treated with procedures in stages. Perineal urethroplasty can be a temporary or a permanent solution to a complex penile, bulbar, or posterior urethral stricture. Some patients choose not to undergo any type of second or third-stage reconstruction and prefer to continue carrying out micturition through the perineal urethroplasty, and thus turning the first-stage procedure into the only one that is performed.

The aim of this article was to demonstrate the technical aspects of the surgical management of perineal urethroplasty stricture following penectomy.

Case presentation

A 62-year-old Catholic man born and living in Mexico City, divorced, and retired had a past medical history of abscess of the corpora cavernosa that spontaneously originated in July 2006. He underwent exploratory surgery, abscess drainage, and partial penectomy. He later presented with complex urethral stricture that was resolved with first-stage Johanson repair. He spontaneously sought medical attention at the Plastic and Reconstrcutive Surgery Department with the intention of having penile reconstruction. He underwent stump resection and the formation of a neophallus with radial forearm flap. He presented with necrosis of the radial forearm flap and therefore underwent flap resection, total penectomy, and perineal urethroplasty formation. One year later he presented with a weakening of the urinary stream caliber through the perineal urethroplasty and so had urethral dilations with a urethral dilating balloon. He presented with acute urinary retention that was resolved through percutaneous cystostomy and later perineal urethroplasty reconstruction in December of 2009. One year after the perineal urethroplasty reconstruction he presented with recurrent stricture for which urethral dilations were begun, but there was a gradual decrease in the caliber...
of the urinary stream despite the dilations. Due to the failure of the perineal urethrostomy with balloon dilations, a new urethral meatoplasty was performed. On this occasion it was carried out with the Blandy technique, sparing the posterior urethral plate in order to reduce the risk for devascularization of the urethral remnant and in turn, providing a lower possibility of recurrent stricture.

Description of the surgical technique

Under peridural block, the patient was placed in the lithotomy position and antisepsis of the perineal region was done. The perineal meatus was cannulated with a 6Fr ureteral stent and instilled with gentian violet dye to pigment the urethral mucosa (fig. 1). A perineal incision in the shape of an inverted U was made (fig. 2). A posterior flap was formed with sufficient fatty tissue to preserve adequate tissue irrigation and the urethra was completely dissected keeping the posterior urethral plate intact. An automatic Scott separator was placed for adequate exposure of the anatomy of the region to be operated on. The urethra was spatulated with a 6 o’clock cut and the urethral lumen was inspected with a rhinoscope for verumontanum visualization (fig. 3). Absorbable 4-0 suture with a modified needle was used to move the skin of the flap up to the spongy tissue found immediately in front of the verumontanum. Three sutures were placed in this position; they were adjusted and in this way moved the edge of the inverted U-shaped perineal skin flap toward the edge of the urethral mucosa (fig. 4). The margins of the perineal skin were sutured to the margin of the bulbous urethral plate and a 20Fr silicon transurethral catheter was placed. A capillary drain was placed, which is normally removed on the third to fifth postoperative day, prior to the patient’s release. The procedure was performed with no complications. The patient was released on the second postoperative day and the transurethral catheter was removed on postoperative day 21. He currently presents with adequate urine flow and no signs of stricture (fig. 5).

Postoperative surveillance is carried out at 3, 6, and 9 months and then yearly. All patients undergo uroflowmetry and a physical examination with rhinoscope through the perineal meatus in order to evaluate adequate stoma permeability. The primary results analyzed are treatment success or failure, which are defined as no evidence of stricture recurrence and evidence of stricture recurrence, respectively.4

Figure 1 Identification of the perineal meatus and marking of the surgical site.

Figure 2 A) Incision over the previously marked lines and B) perineal incision outline.

Figure 3 Dissection of the urethra and identification of the posterior urethra with the rhinoscope.

Figure 4 Perineal cutaneous flap plication.
Discussion

The success rate of perineal urethrostomy success rate according to the etiology of the stricture has been shown to be high in patients with failed hypospadias repair (87.5%), compared with patients with stricture secondary to infectious processes (33.3%). It is likely that any type of stricture loses its identity with time and all the strictures, regardless of their etiology, become an identical pathologic process due to the repeated treatments (dilations, urethrotomy, urethroplasty), making it appear that the original etiology of the stricture does not influence the final result.8

The lack of a tool for evaluating the result of urethral reconstructive surgery should motivate us to elaborate questionnaires that can measure the most important aspects of the health status of a patient that has undergone perineal urethrostomy. In the future, it will be obligatory to develop questionnaires that specifically deal with urethral pathology based on a clearly defined conceptual framework indicating the importance of the patient’s perspective and expectations.3

Conclusions

Perineal urethrostomy stricture is a frequent complication whose treatment is complex due to the high rate of stricture recurrence that presents when the adequate technique is not performed. Surgical correction of a urethrostomy stricture with the Blandy technique is a valid and effective option in the treatment of this complication.

Conflict of interest

The authors declare that there is no conflict of interest.

Financial disclosure

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References