Degloving and Realignment—Simple Repair of Isolated Penile Torsion

Yuval Bar-Yosef, Joseph Binyamini, Haim Matzkin, and Jacob Ben-Chaim

OBJECTIVES
To present the results of repairing congenital or acquired penile torsion by means of a simple surgical procedure that does not involve resection of corporeal tissue.

METHODS
Forty-six circumcised patients (mean age 27 months, range 6 to 119) presented with isolated penile torsion of a greater than 30° rotation. The surgical technique involved degloving the penile skin to the penoscrotal junction. Residual torsion was corrected using 5-6/0 polyglaclin absorbable suture applied to the desired 12-o’clock position of the penile skin adjacent to the glans and to a location counter to the direction of the torsion in the degloved penile skin sleeve. A wedge of loose ventral penile skin was usually resected. The resultant tightening of the skin allowed for proper alignment of the penis and better cosmesis. The rest of the circumferential incision was closed using the same suture material. The success of the procedure was evaluated according to physician and parental satisfaction with the final outcome.

RESULTS
Thirty-seven patients were available for follow-up (mean 31 months, range 8 to 68). Satisfactory results were achieved in 35 (95%) of the 37 patients; the other 2 had residual torsion. Complications were minor and consisted of postoperative fever and a subcutaneous hematoma in 1 patient that resolved with conservative treatment.

CONCLUSIONS
The degloving and realignment procedure is a simple technique that may be applied safely and successfully in most cases of penile torsion.

Congenital penile torsion is a common anomaly. It may present in combination with hypospadias and penile curvature, and the true incidence of this deformity is unknown. Skin tethering and corporeal disproportion have been suggested as possible etiologies, and abnormal development of the dartos could also be a contributory factor. Scar tissue associated with circumcision may cause skin tethering and lead to acquired penile torsion. The parents of affected children often seek medical attention because of the cosmetic appearance and concerns of future dysfunction. The currently available surgical techniques for correction of this abnormality vary from simple release of skin adhesions and realignment of the skin to resection of Buck’s fascia and the tunica albuginea. Resection of Buck’s fascia or the tunica albuginea may result in damage to the neurovascular bundles (NVBs), which run from the 11-o’clock and 1-o’clock positions around the corporeal bodies to the 7-o’clock and 5-o’clock positions, and thus may jeopardize future sexual function. We report a series of 46 circumcised patients, who presented with isolated penile torsion and underwent surgery for correction of penile torsion using a technique that relies solely on skin release, tightening, and closure, without the resection of corporeal tissue.

MATERIAL AND METHODS

Patients
The study cohort was composed of all 46 children who presented with isolated penile torsion (ie, without hypospadias) of a greater than 30° rotation during a 6-year period. Forty-three of the patients presented with a rotation less than 90° and three presented with a rotation greater than 90°. The mean age was 27 months (range 6 to 119). Each patient had undergone ritual neonatal circumcision. Nine of the patients also presented with penile curvature: three with dorsal curvature, two with ventral curvature, two with lateral curvature, and two with dorsal and lateral curvature.

Methods
The corrective procedures were performed under general anesthesia in a surgical day care facility. After a circumferential subcoronal incision, the penile skin was degloved to the penoscrotal junction, and all adhesions and scar tissues were released. Any residual torsion was corrected using a 5-6/0 polyglaclin absorbable suture applied to the desired 12-o’clock position of the penile skin adjacent to the glans and to a location counter to the direction of the torsion in the degloved penile skin sleeve (Figs. 1 to 5). Any concomitant curvature (9 patients) was corrected using plication sutures in a location contrary to direction of the curvature. A...
wedge of loose ventral penile skin was resected in 36 patients (Fig. 3). A reduction of redundant skin allowed for tightening of the skin, prevented rotation after the application of the suture at the 12-o’clock position, and allowed for proper final alignment of the penis and better cosmesis. The remaining circumferential incision was closed using the same suture material. The success of the procedure was evaluated according to physician and parental satisfaction with the final outcome during the follow-up period.

Figure 1. Penile torsion of a 60° counter-clockwise rotation.

Figure 2. Residual torsion after degloving of penile skin.

Figure 3. Wedge of loose penile skin resected from ventral aspect.

Figure 4. Suture placed at 12-o’clock position countering direction of torsion.

Figure 5. Final appearance after skin closure.
RESULTS

Of the 46 patients with isolated penile torsion who were treated during the study period, 37 (80%) were available for follow-up. The mean follow-up period was 31 months (range 8 to 68). One patient developed minor complications (postoperative fever and subcutaneous hematoma) that resolved with conservative treatment. Satisfactory results were achieved in 35 (95%) of the 37 patients available for follow-up. Of these 37 patients, 2 (5%) with an initial rotation of less than 90° had residual torsion of less than 30°.

COMMENT

Several reports have been published of torsion coexisting with other malformations, including hypospadias and curvature. Redman2 operated on 15 boys with penile torsion and hypospadias or curvature, and reflection of the skin and resection of the lateral and ventral portions of Buck’s fascia resulted in a satisfactory outcome in 10 of them, a partial resolution in 3, and no improvement in 2. Slawin and Nagler3 successfully operated on 2 adult patients with penile curvature and torsion, using a modification of the Nesbit plication procedure, which involved excision of elliptical sections of the tunica albuginea. The reports of isolated penile torsion are sparse and have included a small number of patients. Pomerantz et al.5 reported 6 patients who were examined in a pediatric urologic practice. They underwent simple freeing of the penile shaft of its investing tissue. Azmy and Eckstein1 reported on 3 patients with penile curvature on whom they performed a corrective procedure, which, as with the one we used, relied on the release of adhesions and skin closure. In one of their patients, a skin incision was performed in the penile base, the investing tissue was divided around the penile shaft, and the incision was closed in a slightly overcorrected position. The other 2 patients underwent only release of the adhesions. Hsieh et al.6 successfully used plication sutures for repairing isolated penile torsion in 3 adults. They dissected Buck’s fascia and the NVBs to avoid inadvertent injury by the plication sutures. A concept of applying a rotational force counter to the direction of the torsion, similar to the one we have described, was reported by Fisher and Park7 who operated on 8 pediatric patients, 2 of them with isolated penile torsion. Their technique consisted of dissecting a dorsal subcutaneous dartos tissue flap, wrapping it around the penis, and suturing it to the ventral aspect. Their method has the added benefit of providing well-vascularized coverage of the urethra in the case of combined hypospadias and penile torsion. Dissection of the flap, however, can result in the formation of hematoma and ischemia of penile skin and may not be necessary in patients without hypospadiac penile torsion.

Our results have demonstrated that adequate skin release, tightening, and realignment during skin closure lead to satisfactory results in most patients, with minimal complications. The potential for complications is greater with more aggressive approaches to penile torsion, such as those involving excision of the tunica albuginea or Buck’s fascia and dissection of the NVBs. The potential operative risks include bleeding, NVB injury, and penile shortening. The method we have described bears minimal surgical complications and can be easily applied in cases of penile torsion combined with other penile abnormalities, including hypospadias. Most of our patients presented with lesser degrees of torsion. Our method was only used in 3 patients with severe torsion of greater than 90°. More aggressive techniques can be considered for this specific group of patients.

All our study patients underwent ritual neonatal circumcision (usually on the eighth day of age), and data on whether torsion had been noted previous to that date were not available. The relatively large number of patients with isolated penile torsion in our practice could be a reflection of the very high rate of neonatal circumcision practiced in Israel.

CONCLUSIONS

The simple procedure of degloving and realignment may be successfully used in pediatric patients presenting with isolated penile torsion. The technique is simple to perform and requires minimal operative time. It is a safe method that avoids the potential hazards of tissue dissection or excision.

References