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Penile hair coil strangulation of the child

A. Ksia*, M. Ben Saad, A. Zrig, K. Maazoun, L. Sahnoun, R. Laamir, J. Chahed, I. Krichene, M. Mekki, M. Belguith, A. Nouri

Department of Pediatric Surgery, Fattouma Bourguiba Hospital, Medical School of Monastir, University of Monastir, Tunisia

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Abstract
We report the case of a child with a delayed presentation of penile strangulation with a coil of hair that resulted in a complete transection of the urethra. Hair coil strangulation of the penis is uncommon. It is also known as penile Tourniquet syndrome. It has been reported with circumcised and uncircumcised penises and it can lead to serious complications like the amputation of the penis. Prompt diagnosis and treatment are necessary to prevent complications.

Case report

An eight year-old-circumcised boy was referred to our department because of a progressive onset of a penile pain and swelling. Physical examination revealed a hair coiled tightly around the coronal sulcus causing a complete section of the urethra (Figs. 1 and 2). The patient was otherwise well. All routine biological investigations were within normal limits.

The coil of hair was removed surgically under general anesthesia. We started by the dissection of both openings of the urethra. Then we performed urethroplasty over a feeding tube (10 Fr) using interrupted PDS 6/0 sutures. After that, a tension free anastomosis between the glans and the cavernosal bodies was realized using PDS 5/0 interrupted sutures. Finally, we brought the skin closer to the glans by PDS 6/0 interrupted sutures. The child had local antiseptic treatment until the inflammation disappeared and the skin completely healed.

Six months later the patient presented with a urethrocutaneous fistula that was repaired surgically and the child was able to pass urine normally. After 4 years, the follow-up was uneventful and the cosmetic result was good (Fig. 3).

Discussion

Hair thread Tourniquet syndrome is rare. It was first time reported in literature in 1755 [1]. Predisposing factors include circumcision, mental retardation, enuresis and low socio-economic status. Although it is reported almost exclusively in circumcised boys, Imran et al. reported a single case of penile strangulation with complete urethral transection and corporal injury in an uncircumcised boy inflicted by ligation of thread at the base of the penis. The repair to the urethra and corpora cavernosa was performed

* Tel.: +21 697523763.
E-mail address: amineks@yahoo.fr (A. Ksia).

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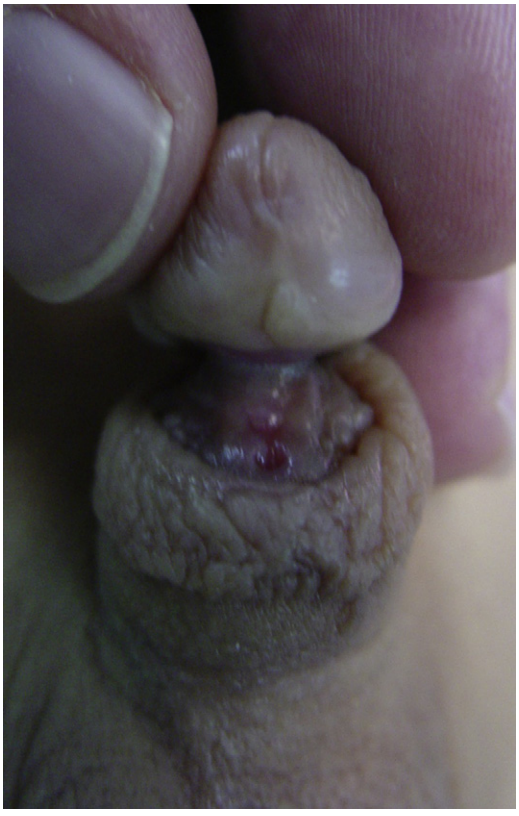

Figure 1 Subtotal amputation of the corpus spongiosum.

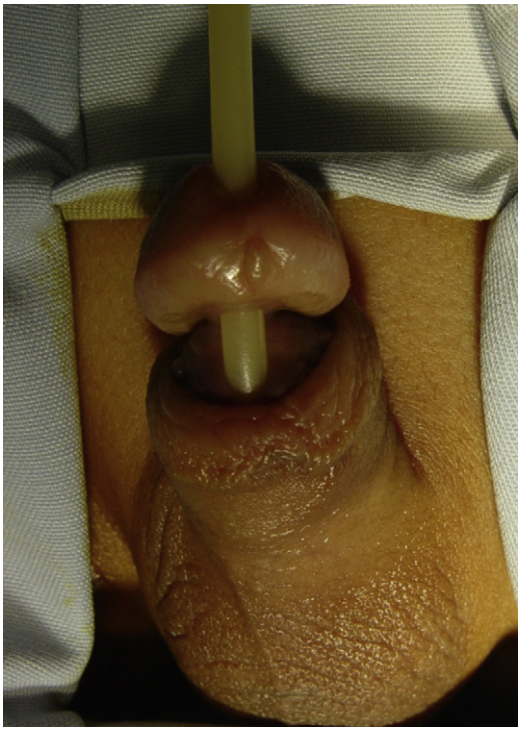

Figure 2 Subtotal amputation of the corpus spongiosum.

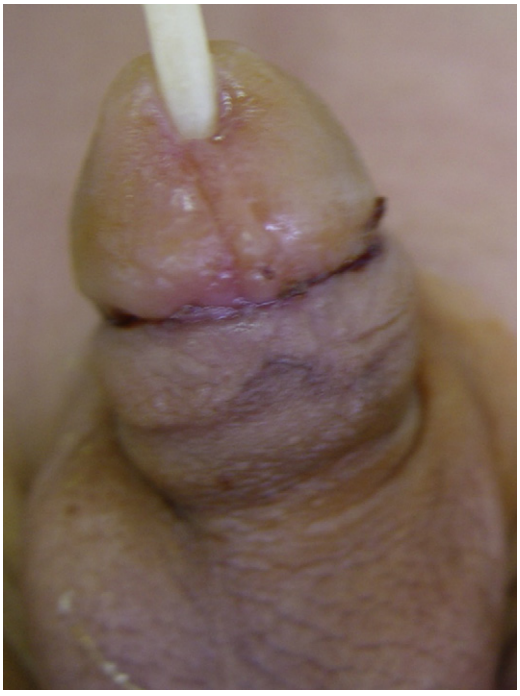

Figure 3 Surgical correction of subtotal amputation of the corpus spongiosum.

successfully with no complications in a 6-month follow-up period [2].

The syndrome is quiet rare in the occidental world, with scarce reports in the literature; however, the penile tourniquet injuries among adolescents and adults are described frequently in the literature of the occidental world. Jennifer and Jean [3] reported a coronal urethrocutaneous fistula in a 30-year-old man with neglected retained ring of condom at the coronal sulcus causing the fistula; unawareness of the possibility of this syndrome led to a delay in the diagnosis and definitive management. Frank et al. [4] reported penile strangulation by different metallic and nonmetallic objects among adolescents and adults with the concept of helping improve erection in some of them and with autoerotic intentions in others.

The clinical signs are penile acute pain and edema. Delayed presentation is associated with skin degloving, disruption of corporeal bodies and the transection of the urethra. We may even find a total amputation of the penis [5,6].

Because hair is extremely thin and lies in a groove of edematous and swollen tissues, the diagnosis can be easily missed for balanitis [7].

Bashir and El-Barbary have classified the injuries into 4 grades. In Grade I, only the superficial skin is injured. Grade II corresponds to the presence of an urethal fistula. In Grade III we find a subtotal amputation of the corpus spongiosum. Grade IV corresponds to the section of the glans [8].

In the majority of the reported cases, the constrictive injury is located in the coronal sulcus. The coil of hair can be so deeply embedded in the skin that the physical examination shows no foreign body coiled around the penis. Consequently, this diagnosis should be suspected whenever there is unexplained pain and swelling of the penis.

The treatment consists in removing the coil of hair and repairing the urethral damages [9]. In children presenting with urethral fistula, either direct closure of the urethral fistula or closure by a well vascularized penile dartos-based flap was done [10]. Kirtane and Samuel adopted the Koff technique of urethral mobilization, where they discarded the glanular urethra and use the fistula as the final meatus [11].

For the severe cases of penile injury with a glans hanging to the penis by a very slim pedicle, El Bahnasawy and Harouchi recommended staged repair with glans anastomosis to the corpus first, and urethroplasty at a later stage [12,13]. Badawy et al repaired the damages in a single stage, even for the sever form. However, he started by dorsal dissection of the sulcus created by the hair coil, and he fixed the raw surface of the glans to the corpus cavernosum to support the glans before doing the ventral dissection of the urethra and glanular wings [10].

Postoperative complications include urethro-cutaneous fistula, chordee, urethral stricture, skin necrosis and gangrene of the shaft and glans.

Conclusion

Hair coil strangulation of the penis is rare and its consequences can be serious. Early recognition and prompt removal of the coil of hair along with an appropriate pre and post operative care are necessary to minimize morbidity.

Conflict of interest

None.

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