Acute Foreskin Strangulation Injury due to Bathing Suit Mesh Entrapment

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A R T I C L E   I N F O
Article history:
Received 11 May 2016
Accepted 13 May 2016

Keywords:
Foreskin
Injury
Entrapment
Trauma

A B S T R A C T
Genital injury can occur at any age of life but is most common in the pediatric population. Hair-tourniquets and circumcision procedures are the most common causes of penile injury in children. Foreskin trauma, aside from zipper related injuries, is sparsely reported. We describe the case of an 8-year-old male who presented with foreskin entrapment caused by bathing suit mesh. Management and literature review are discussed.

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Introduction

Penile injury in the pediatric population is a common occurrence worldwide. Hair-tourniquets, blunt trauma, and iatrogenic causes are among the most common etiologies in children. While foreskin injuries from zippers are relatively common, practitioners should be aware of less common etiologies as well. While very uncommon, foreskin entrapment due to clothing can present emergently.

Case presentation

An 8-year-old male who was brought to the emergency department by his parents. The family spent an uneventful day at the beach. At home, he attempted to urinate, but found that he could not remove his bathing suit due to entrapment of the foreskin. Evaluation and attempt at removal was unsuccessful and urology consultation was obtained.

On physical exam, he was in no acute distress and the physical exam was otherwise unremarkable except for the genitourinary findings. The penis was uncircumcised. The dorsal foreskin was entrapped within four holes of the bathing suit mesh. The bathing suit was cut away to allow better visualization of the penis and mesh. There was significant, painful edema of the entrapped foreskin (Fig. 1). No injury to the penile shaft was identified. The patient had no previous history of voiding dysfunction but he refused to urinate. This was presumed to be due to discomfort and anxiety as there was no evidence of phimotic constriction or urethral occlusion.

Topical 1% lidocaine gel was applied to the skin. This provided enough local anesthesia to allow the constricting mesh bands to be cut with fine scissors. The mesh was removed and the edema quickly resolved. Examination of the glans and urethral meatus did not reveal additional injury. The patient voided without difficulty or pain. He was discharged and remains well.

Discussion

Penile injury in children can cause significant long-term consequences. Iatrogenic injury occurring during circumcision procedures remains among the most common etiology worldwide. Other causes of penile injury include hair-tourniquets, blunt trauma (toilet seat and straddle injuries), or zipper injuries. According to the National Electronic Injury Surveillance System (NEISS), genital injuries represented 0.6% of all pediatric injuries.

Acute foreskin injury is less widely described in the literature and information regarding its incidence is not known. Zipper injuries are the only consistently reported etiology. This usually results in edema of the foreskin tissue along with severe pain. In rare cases of prolonged entrapment skin necrosis can occur. Several methods to disengage the zipper have been described, including...
the use of lubricants, flat-head screwdrivers, and emergency circumcision. There is one existing report of a hair tourniquet causing prepuce injury, but the majority of hair tourniquet injuries involve the penile shaft.

Polyester mesh is commonly used in swimwear and running shorts. It is designed to provide a lightweight layer between the skin and fabric. It serves to provide scrotal support and eliminates the need for underwear. To our knowledge, bathing suit mesh entrapment of the foreskin has only been reported in the literature once before by Hoppa and Wiley in 2006. They described three young males that presented with genital pain. Two of these cases involved genital trauma while wearing a bathing suit. They used a surgical blade to remove the bathing suit mesh without sequelae.

In our case, no traumatic event preceded the foreskin entrapment and the patient was by all accounts asymptomatic until he attempted to void. The actual time of entrapment was not known but our patient had worn the bathing suit for the entire day. We believe that the bathing suit was tight fitting and the foreskin was compressed against the mesh. Once the foreskin went through the mesh progressive edema occurred. Our case illustrates the importance of rapid removal of the mesh.

**Conclusion**

Foreskin entrapment is an uncommon event in the pediatric population, and bathing suit mesh as the cause is exceedingly rare. Clinicians should be aware of bathing suit mesh as a cause of acute genital injury in young males, with or without preceding genital trauma. Application of local anesthesia facilitates bedside mesh removal with fine scissors. If the entrapment is alleviated quickly, edema and pain are expected to resolve rapidly.

**Disclosure**

The authors declare that there is no conflict of interest regarding the publication of this article.

**References**

1. El-Bahnasy MS, El-Sherbiny MT. Paediatric penile trauma. BJU Int. Jul 2002;90(1):92–96.
2. Casey JT, Bjurlin MA, Cheng EY. Pediatric genital injury: an analysis of the national electronic injury surveillance system. Urology. Nov 2013;82(5):1125–1130.
3. Raveenthiran V. Releasing of zipper-entrapped foreskin: a novel nonsurgical technique. Pediatr Emerg Care. Jul 2007;23(7):463–464.
4. Halis F, Inci M, Freier MT, Gokce A. Self-inflicted strangulation of prepuce in a child. APS J Case Rep. Jan 2013;4(1):4.
5. Hoppa EC, Wiley 2nd JF. Bathing suit mesh entrapment: an unusual case of penile injury. Pediatr Emerg Care. Dec 2006;22(12):813–814.