



Hair tourniquet syndrome of penis: A rare situation in boys with serious complications if not recognized

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ABSTRACT

Penile Hair Tourniquet Syndrome (HTS) is a rare event but a serious syndrome characterized by the presence of a hair coiled around the coronal sulcus of penis which causes a range of pathologies from glandular swelling to necrosis and amputation of penis. If diagnosis is delayed, long-term complications such as urethral fistula, urethral transection, and penile gangrene or amputation develop. Penile HTS is almost exclusively described in circumcised boys. Prevention of such major complications depends on awareness of the etiology and presence of a high index of suspicion. Herein, we aimed to present a boy who was 4 years old with a penile HTS caused by wrapping of his mother's hair coil.

Keywords: Hair; penis; tourniquet.

Introduction

Hair Tourniquet Syndrome (HTS) of penis is a very rare entity and caused by a hair coil wrapped around the sulcus coronarius of penis, causing progressive penile strangulation and compromised blood flow.^[1-3] It is most commonly found in boys between 0 and 6 years of age and almost described in circumcised boys.^[4] It causes a morphological appearance that ranges from simple edema to necrosis.^[1] Awareness of the etiology, presence of a high index of suspicion, careful inspection of the affected area with a magnifying glass are helpful for diagnosis. The patient usually presents with acute symptoms. Treatment consists of removal of the tourniquet which includes unwrapping, cutting or dissolving the offending hair coil and the patients respond well to treatment.^[5] Herein, we aimed to report a 4-year-old boy with a penile HTS who underwent physical examination in the operating room for definitive diagnosis and further treatment.

Case presentation

A 4 year-old circumcised boy applied to the Pediatric Urology Outpatient Clinic with an increasing swelling on his penis. His family reported that his complaints started 2 months ago. They had applied to three urology outpatient clinics of different hospitals with the same complaints. He was prescribed peroral and topical antibiotics, however his complaints and swelling continued to increase. There was no history of fever, but the child was having intermittent voiding problems lately. Physical examination of the penis showed an edematous glans with suspicion of a constructed hair band around the sulcus coronarius of penis causing a tourniquet-like compression, but the hair band was not visible even with magnification due to severe edema (Figure 1).

He was admitted to emergency operation room for definitive diagnosis. Informed consent was obtained prior to treatment. Under general anesthesia, we observed sharp demarcation line

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Figure 1. Glandular swelling at the time of examination



Figure 2. Hair coiled around the penile sulcus coronarius



Figure 3. The hair coil removed from the penis

and a coil of hair which was found to wrap the sulcus coronarius deeply (Figure 2). The patient was catheterized with a 8F urethral catheter and the urethra was intact at inspection. The hair coil was cut dorsally, unwrapped and removed carefully



Figure 4. The appearance of penis at the first postprocedural month

(Figure 3). The procedure was completed by circumferentially and firmly applied wound dressing. After the operation, peroral antibiotics and anti-inflammatory medication were given. The patient was discharged on the first postoperative day. Complete recovery was observed at the end of first postoperative month (Figure 4).

Discussion

The term HTS was first used in 1971 by Quinn, but the very first description of the condition dates back to 1832.^[6] Penile HTS is a rare event but serious syndrome characterized by the presence of a hair coiled around the coronal sulcus of penis. As hair has a very high tensile strength and stretches when wet and contracts while drying, it constricts tightly the structure it is coiled around and may even lead to its amputation. The mechanism of injury in hair thread tourniquet involves ischemia in the distal part to the tourniquet.^[5] Since human hair is very thin, the problem may be easily missed, especially in the presence of severe edema and swelling of the glans penis.^[7,8]

Acute HTS presents usually with erythema, swelling, circumferential constriction and distal edema with little discomfort to the child.^[5,9] During this stage, the hair is embedded in the edematous penile skin and cannot be easily identified. If the tourniquet is not removed in this early stage, it may progress to skin infection and ulceration, but removal of the constriction at this stage prevents long-term complications such as urethral fistula, urethral transection, and penile gangrene or amputation. We reviewed the cases with penile strangulation in babies caused by mother's hair in the literature between the years of 1967 and 2016 with its specific nomenclature telogen effluvium (mother's postpartum excessive hair loss). It was significantly encountered in circumcised boys. The circumcision has been considered to be a major risk factor of strangulation because it bares the coronal sulcus. So the hair coil seems to strangulate a circumcised

penis more easily than a normal prepuce.^[10,11] In our circumcised case, the hair coil caused only glandular swelling with only skin lesion without urethral injury.

Management of HTS requires awareness of the etiology, presence of a high index of suspicion, careful inspection of the affected area with magnification, proper examination recommended under anesthesia and early intervention, that will prevent the occurrence of severe complications. The hair coil should be removed promptly to avoid urethral damage and glandular necrosis.^[12,13] Harouchi et al.^[14] and Bashir et al.^[15] classified the degree of injury from grade I (superficial skin lesion only) to grade IV (the loss of the glans) and grade 0 (constriction of skin without urethral injury) to grade III (gangrene, necrosis and complete amputation of the glans). All of them recommended repair surgery only for the severe cases of penile injury. In our case, we used blunt probe for entering between the hair coil and penis, cut hair coil dorsally, unwrapped and removed hair coil after detailed physical examination under general anesthesia.

In conclusion, penile HTS is a rare entity and may cause severe deformities ranging from simple penile edema and swelling to penile necrosis and amputation. When the tourniquet like compression symptoms exist, such as edema and sharp demarcation line, penile HTS should be thought in the differential diagnosis. Penile HTS must be considered as a surgical emergency that should be intervened immediately. Early diagnosis and rapid treatment can prevent serious complications. The choice of the treatment depends on the severity of the injury.

Informed Consent: Written informed consent was obtained from patient parents who participated in this case.

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References

1. Bean JF, Hebal F, Hunter CJ. A single center retrospective review of hair tourniquet syndrome and a proposed treatment algorithm. *J Pediatr Surg* 2015;50:1583-5. [\[CrossRef\]](#)
2. McClure WJ, Gradinder GP. Hair strangulation of the glans penis. *Plast Reconstr Surg* 1985;76:120-3. [\[CrossRef\]](#)
3. Bacon JL, Burals JT. Hair thread tourniquet syndrome in adolescents: a presentation and review of the literature. *J Pediatr Adolesc Gynecol* 2005;18:155-6. [\[CrossRef\]](#)
4. Badawy H, Soliman A, Ouf A, Hammad A, Orabi S, Hanno A. Progressive hair coil penile tourniquet syndrome: multicenter experience with 25 cases. *J Pediatr Surg* 2010;45:1514-8. [\[CrossRef\]](#)
5. Vaquez Rueda F, Nunez Nunez R, Gomez Meleno P, Blesa Sánchez E. The hair thread tourniquet syndrome of the toes and penis. *An Esp Pediatr* 1996;44:17-20.
6. Singh V, Singh P, Sharma A, Sarkar J. Acquired constriction ring syndrome as a cause of inconsolable cry in a child: a case report. *Cases J* 2008;1:92. [\[CrossRef\]](#)
7. De Silva-Gutiérrez A, Osorio-Campos J, Arcos-Marcín M, Morales-Díaz J, Martínez-Méndez M. Glans autoamputation secondary to penile strangulation causing ischemic necrosis. *Rev Mex Urol* 2008;68:341-3.
8. Jezior JR, Brady JD, Schlossberg SM. Management of penile amputation injuries. *World J Surg* 2001;25:1602-9. [\[CrossRef\]](#)
9. Thomas AJ Jr, Timmons JW, Perlmutter AD. Progressive penile amputation. Tourniquet injury secondary to hair. *Urology* 1977;9:42-4. [\[CrossRef\]](#)
10. Sotolongo Jr JR, Hoffman S, Gribetz ME. Penile denudation injuries after circumcision. *J Urol* 1985;132:102-3. [\[CrossRef\]](#)
11. Haddad FS. Penile strangulation by human hair. Report of three cases and review of the literature. *Urol Int* 1982;37:375-88. [\[CrossRef\]](#)
12. Alpert JJ, Filler R, Glaser HH. Strangulation of an appendage by hair wrapping. *N Engl J Med* 1965;273:866-7. [\[CrossRef\]](#)
13. Dikshit VK, Gupta RK, Kothari PR, Gupta AR, Kamble RS, Kesan LV. Near total penile amputation caused by hair tourniquet, managed with the URAGPI procedure. *Afr J Urol* 2015;21:254-7. [\[CrossRef\]](#)
14. Harouchi A, El-Andaloussi ME, Benhayoun N. Les strangulations du gland par cheveu. *Int Magh Medical* 1980;2:19-26.
15. Bashir AY, El-Barbary M. Hair coil strangulation of the penis. *J R Coll Surg Edinb* 1980;25:47-51.