

Hair-thread tourniquet syndrome in a child penis: Case report and review of literature

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Citation

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Abstract

Hair-thread tourniquet syndrome is a general term that refers to a constriction injury resulting from a strand of hair or a thread wrapped tightly around an appendage. The condition usually occurs in very young patients in the first few months of life. [1] We present a unique case of a 4 year and 6 month old baby boy with hair-thread tourniquet syndrome penis that can present a diagnostic dilemma to someone who is unaware of the condition, because the constricting agents are frequently difficult to see. Early recognition and a definitive treatment are of paramount importance in order to avoid irreversible ischemia and possible urethral transection and even auto-amputation. Although most cases reviewed are mostly accidental, Nonaccidental injury must consider in a minority of cases.

INTRODUCTION

Hair-thread tourniquet syndrome is a rare condition that occurs mostly in babies. It occurs when a strand of hair or occasionally a piece of thread or fiber encircles an appendage, causing partial or total obstruction to circulation.

CASE REPORT

4 years and 6 months old boy who is previously healthy with no previous surgery except circumcision under local anesthesia at age of 7 days, presented to emergency department with irritability during voiding urine for the last two weeks and mild penile swelling and coronal sulcus ulcer with crustation in the last 2 days. He has a history of nocturnal enuresis but No history of trauma, foreign body, and allergy. On examination, the patient was irritable, in pain, there is mild distal penile swelling, and erythematic and tender circumferential constriction linear fissure at coronal sulcus and foreign body cannot see. {Fig 1 }

Figure 1

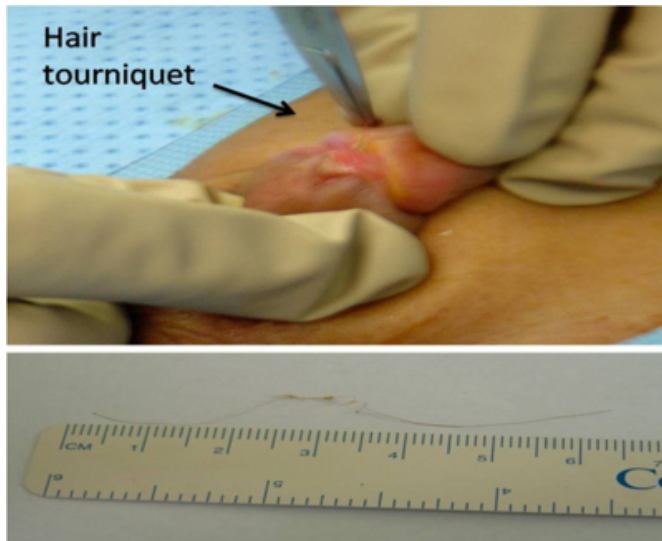
Figure 1: Shows circumferential ulcer at coronal sulcus and no foreign body can be seen



Our impression at that time was foreign body; a burred hair-thread strangulating the glans, putting in our mind possibility of child abuse. Child was urgently taken to theatre; Examination Under general anesthesia shows a Constriction ring of hair-thread like fibers at the glans penis sulcus and was removed with a pair of fine scissors {Fig 2 }

Figure 2

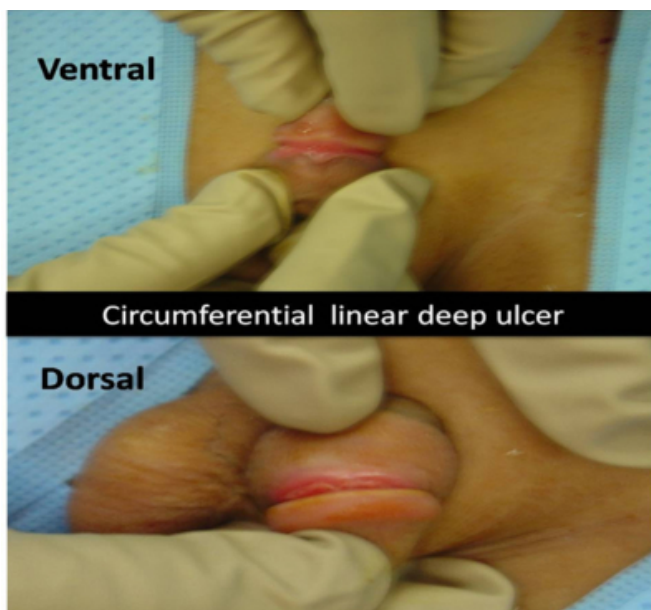
Figure 2: Intraoperative finding of hair Constriction ring: Upper picture is the before and lower picture after hair removal it is 6 cm long, faint yellow in color



The urethra examined and was not injured {Fig 3}.

Figure 3

Figure 3: post-removal of hair tourniquet, shows no urethral injury



Postoperative patient was doing well voiding urine without difficulty. The Social worker was involved to rule out child abuse but no definite data collected from the family pointing any social problem. The patient was discharge home first postoperative day and Follow up appointment after two weeks given to the patient but the patient didn't show at follow up.

DISCUSSION

Hair tourniquet syndrome is characterized by circumferential strangulation of an appendages or genitalia by human hairs or fibers. The condition first described in 1832 and Quinn is the first coined the term hair tourniquet syndrome in 1971. [2]

According to Saad et al; there were reviewed a total of 210 reported cases and they found that penile involvement occurred in 44.2%, toes in 40.4%, fingers in 8.57%, and other sites (female external genitalia, uvula, and neck) in 6.83% of cases. Penile tourniquet is more common in patients around 2 years old. [3]

Hair remains the most common causative agent with a reported incidence of 79% in one study. Hair has unique physical characteristics that make it an ideal tourniquet. It is thin, elastic and expansible when wet while constricts as it dries off without losing its tensile strength. [2]

Delayed diagnosis may result in loss of appendages in some cases. [3] In our case, the patient presented late because he treated for 2 weeks as a case of acute balanitis. Early recognition of this condition is important and requires a high index of suspicion when no other causes found in an irritable infant.

Haddad, in his detailed review of penile strangulation, has divided the etiology into 4 groups. They are accidental, incidental, intentional, and undetermined cause. He also mentions circumcision as a predisposing factor as a hair is more easily entangled around a circumcised penis than around a glans covered by an intact prepuce. [3]

Our patient has nocturnal enuresis and he is 4 year and 6 month old; some instances of penile wrapping for control of nocturnal enuresis have reported. [4]

Hair- thread tourniquet syndrome usually occurs in infants and is presume to be accidental. However, Barton et al., in 1988, reported a case of hair- thread tourniquet syndrome due to child abuse [5]. In our case, the patient presented with his mother only and not came back for follow up but our social worker involved and excluded child abuse. Nonaccidental cause should consider carefully in certain cases as mistake and misjudgment have recorded in the past. There are several reports in the literature where the diagnosis of child abuse has been overturned. [3]

CONCLUSIONS

Hair-thread tourniquet syndrome especially in the penis is an uncommon but serious entity that need high index of suspicious. Early diagnosis and prompt treatment can save the patient from unwanted complications. Nonaccidental cause should considered carefully in certain cases

References

1. Ram RM, William EB, Gary HB. Hair-thread tourniquet syndrome in a cognitively impaired nursing home resident. *Advances in Skin & Wound Care* Sep 2004.
2. Singh V et al. Acquired constriction ring syndrome as a cause of inconsolable cry in a child: a case report. *Cases Journal* 2008, 1:92
3. Saad AZ, Purcell EM, McCann JJ. Hair-Thread Tourniquet Syndrome in an Infant with Bony Erosion- a Case Report, Literature Review, and Meta-analysis. *Ann Plast Surg* 2006; 57: 447–452.
4. Bacon JL and Burgis JT. Hair Thread Tourniquet Syndrome in Adolescents: A presentation and review of the literature. *J Pediatr Adolescent Gynecology* (2005) 18:155–156
5. Okeke LI. Thread embedded into penile tissue over time as an unusual hair thread tourniquet injury to the penis: a case report. *Journal of Medical Case Reports* 2008, 2:230

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