

Case Report

Hair Tourniquet Syndrome: An Unusual Surgical Condition

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Abstract

Hair tourniquet syndrome is a rare condition occurring in children particularly young infants. It is a surgical emergency and is characterized by circumferential tourniquet of hair or any fibre of one or more appendages. It causes oedema, ischemia, necrosis and even amputation of digits of any structure strangulated by it.

We hereby present a case study of hair tourniquet syndrome affecting right thumb of an infant 5 months of age. The aim of this study is to increase awareness amongst medical personnel to diagnose and treat this condition at the earliest to prevent untoward complications.

Keywords

- Hair tourniquet
- Infants
- Diagnostic dilemma

INTRODUCTION

Hair tourniquet syndrome is a surgical emergency where a hair strand or any fiber strangulates around anybody appendage like digits, toe, penis, clitoris or vulva which simulates compartment syndrome leading to ischemic gangrene if left untreated.

This is a rare condition with unknown incidence. It occurs accidentally [1] but child abuse may be suspected unless proven otherwise [2]. It should be distinguished from amniotic congenital band syndrome, ainhum (dactylosis spontanea) or any other cause of pseudoainhum [2].

CASE PRESENTATION

A five month old infant was brought to the emergency department with complaints of excessive crying and not accepting proper feeds. Parents also noticed swelling and blood oozing along with redness of the right thumb.

On examination, right thumb showed reddish discoloration and marked oedema. Capillary filling was significantly delayed and a constriction band could be seen at the base of the thumb. The need of the hour was to prevent oedema leading to ischemia and any vascular compromise that would ultimately lead to amputation of the thumb (Figure 1).

The infant was immediately moved to the emergency procedure room. On careful examination, hair strands constricting at middle of the thumb at inter phalangeal joint was found and it had penetrated through the skin into the subcutaneous tissue. The hair strand removed with all care and sterile dressing applied. The wound healed well with no residual deformity of the thumb (Figure 2).

DISCUSSION

The term hair thread tourniquet syndrome was coined by



Figure 1 Edematous and bleeding wound.



Figure 2 Showing removed hair strands.

Barton et al in 1908 [3]. It is the circumferential strangulation of one or more appendages by human hair or fibers, it is a surgical emergency and the parts involved commonly are toes, fingers, penis, clitoris and vulva [4,5]. It is more commonly seen in paediatric population particularly infants but mentally challenged adults are also affected [6]. The etiology is accidental but child abuse may also be suspected [7].

One possible risk factor is telogen effluvium which is an excessive hair shedding condition in post partum period reaching peak around the fourth month [8]. Other associated conditions include chemotherapy [3] or fibres from old frequently washed clothes [4]. Other differential diagnosis congenital amniotic band syndrome, ainhum and pseudoainhum. Ainhum is also a rare condition in which there is circumferential progressive constricting fibrotic band usually involving fifth toe rarely fingers due to trauma (usually in people walking bare foot). Similarly pseudoainhum is a condition in which constricting band is of collagen which can be congenital or acquired. Both these conditions can be progressive and ultimately may lead to auto amputation of the involved digit.

The mechanism of injury is due to tourniquet effect of hair or fibre which causes oedema due to lymphatic obstruction. This causes venous congestion leading to impaired arterial perfusion. Presenting complaint is mostly a crying or irritable child. Parents may notice swelling and discoloration of the involved appendage.

Prompt recognition and early management is very crucial. It should be urgently explored in the operating room with complete release of the constricting hair or fibres to prevent any tissue damage or amputation [9]. A simple longitudinal incision along the appendage (either mid dorsal or lateral) is safe and sufficient for complete removal of the constricting hair or fibre (Figure 3).

Conservative methods like removing the hair or fibre with scissors or applying depilatory preparations to weaken the fibres [3] are all inappropriate and ineffective as these fibres are deeply embedded in the subcutaneous tissue and aren't easily accessible and later may require surgical exploration to release the constriction.

In conclusion, hair tourniquet syndrome is an unusual surgical emergency which warrants early diagnosis and prompt treatment to prevent loss of involved appendages. This study must increase awareness amongst emergency physicians, surgeons and orthopaedicians regarding hair tourniquet syndrome [10,11]



Figure 3 Normal thumb after full recovery.

REFERENCES

1. Sudhan ST, Gupta S, Plutar.o C. Toe tourniquet syndrome-accidental or intentional? *Eur J Paediatrics*. 2000; 159: 866-887.
2. Klusman A, Leenard HG. Tourniquet syndrome-accident or abuse? *Eur J Paediatrics*. 2004; 163: 495-498.
3. Barton DT, Sloan GM, Nichter LS, Reinisch TF. Hair thread tourniquet syndrome. *Paediatrics*. 1988; 83: 925-928.
4. Alverson A. A genital hair tourniquet in a 9 year old girl. *Pediatr Emerg Care*. 2007; 23:169-170.
5. Rich M, Keating N. Hair tourniquet syndrome of the clitoris. *J Urol*. 1999; 162: 190-191.
6. Miller RR, Baker WE, Brandeis GH. Hair threads tourniquet syndrome in a cognitively impaired nursing home resident. *Adv skin care*. 2004; 17: 351-352.
7. Wang M, Scott J, Tunnessen WW. Picture of the month. *Arch paediatric Adolescent med*. 2001; 155:515-516.
8. Strahlman RS. Toe tourniquet syndrome in association with maternal hair loss. *Paediatrics*. 2003; 111: 685-687.
9. Seroor F, Gorenstein A. Treatment of toe tourniquet syndrome in infants. *Paediatric Surgery Int*. 2003; 598-600.
10. Sunil TM. The hair thread tourniquet syndrome; report of this unusual presentation of this rare condition. *Hand surgery*. 2001; 6: 231-233.
11. Smith AM, Peckelt W, Davies M. Acquired constriction ring syndrome. *Foot Ankle Int*. 2003; 24: 640-641.

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