



# Finger tourniquet syndrome in a 7-day-old neonate: A stitch in time saves nine

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## Introduction

Finger-tourniquet syndrome, also called hair-thread tourniquet syndrome (HTTS), is a rare condition caused by hair or fibre wrapped around digits (fingers and toes), penis, or even clitoris[1]. It usually affects infants and children. This results in pain and swelling of the affected part. Complications can include tissue death due to lack of blood flow. It occurs most commonly among children around 4 months of age, though cases have been described in older children and adults. We describe a case of a 7-day-old neonate who had finger-tourniquet syndrome and was managed conservatively.

## Case report

A 7-day-old baby boy presented with crying excessively for no apparent reason. On examination, a deep circumferential groove was noted over the middle finger of the right hand. The affected finger was red and swollen with a thread just visible in the groove. There was no recent infection, no known congenital malformation, fever, or trauma. Neither the history of the newborn nor of the parents was significant; there was no history of peripheral gangrene in the family. The case was initially seen by a paediatrician followed by a surgical referral. After counselling the family, the patient was shifted to the emergency room, and the thread was safely removed. Post-procedure, the capillary refill was noted to be normal indicating adequate perfusion.

The finger was monitored every 3 hours for capillary refill and for saturation. The decision to amputate was withheld until the need came. Fortunately, the finger colour improved over the ensuing days and the child was discharged after 10 days (Figure 1).



**Figure 1: Progression from 08/01/2023 to 16/01/2023**

### Discussion

Toe tourniquet syndrome is a rare condition that can happen when a strand of hair or a thread of cloth wraps tightly around a toe, finger, or another appendage[1]. Diagnosis is clinical but can be misinterpreted as infection, trauma, insect bite, allergic or contact dermatitis[2]. Hence the need for the clinician to be familiar with the condition.

It was Quinn who first described the term 'Toe-tourniquet syndrome' in 1971[3]. Symptoms include redness, swelling, and inconsolable crying. Wrapping of fibre produces tourniquet syndrome like situation which causes a reduction in venous and lymphatic drainage causing swelling, oedema, and congestion of the affected part of the body[1]. This ultimately results in pressure on arteries (end arteries in case of toes and fingers) producing ischaemia and gangrene with the end result of amputation if not addressed in sufficient time.

There are many risk factors associated with this condition. Being a rare entity, it is very difficult to comment on whether it is neglect or abuse. Neglect while giving a bath and wrapping the child without checking appendages carefully should also be considered. Woolen gloves with loose threads are a risk factor. In a report by Barton DJ, *et al* in 6 children, the offending fibres were hair in 3 of the 4 patients with toe injuries and synthetic fibers from mittens in the finger cases[4].

The goal of treatment is to remove the constricting fibre. Prompt removal of constriction even in an emergency room is important. Serour and Gorenstein [5] described a surgical technique in which a peritendinous incision is given, over the area of strangulation on dorsal aspect of toe as far as proximal phalanx bone. Complete transection and release of constricting fiber is recommended. In our case, we removed woollen fibre with a surgical blade under direct vision.

### Conclusion

Toe-tourniquet syndrome is a rare entity and the diagnosis is clinical. It should be one of the differential diagnoses of acute swollen toes in young children. Careful examination of digits for strangulation in an irritable child with digit swelling is a crucial step. Adequate and prompt treatment gives good outcomes without the need for amputation.

### References

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