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CASE STUDY

Hair Tourniquet syndrome: A Case Study

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ABSTRACT

Hair tourniquet syndrome (HTS) is a rare yet serious condition that primarily affects infants and young children. Hair tourniquet syndrome (HTS) is a disorder in which a hair strand tightly coils around a bodily component such as a finger, toe, or vaginal area, causing constriction that leads to reduced blood flow and swelling in that specific area. An eight-month-old Caucasian boy was brought to our Dermatology clinic with swelling of his second toe of the right foot. A detailed medical history was taken, including recent trauma, duration, and exposure to hair or threads. A physical examination was conducted to exclude other medical conditions, including HTS. A dermatoscope was used to magnify the affected area and found a thin hair strand coiled on the toe, causing the swelling. The hair was removed without causing more harm, alleviating pressure on the affected toe. The affected area was examined for signs of tissue injury, infection, or compromised circulation which fortunately turn to be negative. The boy was referred and sent to the Pediatric Surgery ward and managed before any further complications occur. After the constriction was removed, a pain medication was prescribed to relieve the pain caused by HTS. The boy was scheduled for follow-up to exclude persistent tissue injuries and prescribe any necessary medication, such as antibiotics, in case of uncomplete healing. An eight-month-old Caucasian boy with swelling in his right foot demonstrates the significance of comprehensive clinical evaluation and inspection in identifying hair tourniquet syndrome (HTS). The boy's fine hair was successfully extracted without causing any additional damage, therefore averting potential issues. Timely identification and early treatment are essential to avoid potential serious complications.

Keywords: *Hair tourniquet syndrome (HTS), constriction, Dermatoscope, Hair strand.*

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INTRODUCTION

Hair tourniquet syndrome (HTS) is an uncommon yet potentially severe disorder that mostly impacts newborns and young children (1). HTS is the condition where a hair strand firmly wraps around a body part like a finger, toe, or vaginal area, producing constriction resulting in ischemia and localized edema (2). This can result in problems such as tissue damage, pain, and in severe cases, loss of the affected body part (3). The movement of the appendage, particularly in the toes, tightens surrounding hair, leading to ischemia, necrosis, and potential loss of the affected appendage if not promptly recognized and treated (4). The etiology is still debated as to whether it is unintentional or a result of child abuse (5). In addition; poor hygiene is considered as a risk factor (6). (figure 1) (7)

Diagnosing HTS is challenging due to the generic nature of its symptoms, which may bear resemblance to those of other conditions such as infections or injuries (8). Therefore, it is very important to stay alert and do a full evaluation so that this illness can be quickly diagnosed and treated.

The goal of this case is to make healthcare workers more aware of how important it is to quickly spot HTS in order to avoid bad outcomes and offer the patients the best possible care.

Figure 1: Photo of the right foot showing erythema and edema distal to hair-toe tourniquet at the middle of the second toe.

CASE PRESENTATION

An eight months old male Caucasian presented to the Dermatology clinic in King Abdulaziz University Hospital for clinical assessment where the boy was suffering from swelling of the second toe of the right foot. The skin looked discolored and the toe was swollen and the baby had sleep disturbance due to the pain he felt.

Detailed medical history was taken including any recent events that may led to the symptoms, its duration and any exposure for hair or threads that may be a cause for the appeared symptoms.

Following medical history, physical examination took place, included the examination of the affected part to exclude other medical conditions that may have common symptoms like HTS. An examination conducted on the affected area to detect any hair strands or threads that are entwined around the affected part, leading to any blood flow restriction. Thorough inspection may be necessary, particularly if the hair is sparse or hard to detect. We couldn't detect the cause of the swelling, therefore we used dermatoscope to magnify the affected area. Finally; we were able to detect very thin hair strand coiled on the toe causing its swelling. With the use of precise equipment to guarantee complete removal of the hair without causing more harm, we were able to relief the pressure on the affected toe.

Thorough inspection of the affected area for signs of tissue injury, infection, or compromised circulation which fortunately turned to be negative. If difficulties arise, suitable treatment measures including wound care or antibiotics can be started. The boy was sent to the Pediatric Surgery ward and management was made before any further complications might take place.

After removing the constriction cause, a pain medication was prescribed to relief the pain caused by HTS. The boy scheduled for follow up after a week to exclude persistent injuries to the tissue and prescribe any necessary medication such as antibiotics in case of uncomplete healing.

DISCUSSION

HTS is a rare yet serious condition that mainly affects infants and young children (9). Therefore; its diagnosis may be somehow challenging because it can mimic other conditions that may be more serious (10). These conditions include Infection(11), Trauma or Injury (12), Fracture (13), Congenital Anomalies (14), Autoimmune Diseases (15), Vascular Disorders (16), or any other Dermatological Conditions.

Stiction in the afflicted area results from the obstruction of lymphatic and venous fluid circulation caused by circumferential digital strangulation (17). Continued blockage could lead to arterial blockage and tissue damage due to lack of blood supply (18).

Extended ischemia damage results in tissue death and eventual self-amputation (19). Prompt treatment involves removing the restricting hair or fibre(20). It can typically be removed through close inspection. If there is uncertainty about the thoroughness of removal, surgical investigation is necessary, particularly when the hair penetrates the skin and is no longer visible (21)

One way to prevent HTS is by laundering socks and mittens and turning them inside out(22). Hormonal changes in the mother can lead to increased hair shedding, known as telogen effluvium, often occurring between 2 weeks and 6 months after childbirth(23). Claudet et al(24). found that 68% of cases of HTS occur in newborns under 5 months of age.

HTS is a condition that can jeopardise the appendage if not treated promptly or diagnosed in a timely manner. Within literature, cases of HTS impacting toes, fingers, penis, clitoris, and uvula have been documented. Previous studies have identified toes and the penis as the appendages most frequently

impacted. The toes, particularly the third toe, were the most impacted, with the right side being more damaged than the left side in our study (25).

Conclusion

An eight-month-old Caucasian boy with swelling in his right foot demonstrates the significance of comprehensive clinical evaluation and inspection in identifying hair tourniquet syndrome (HTS). The boy's fine hair was successfully extracted without causing any additional damage, therefore averting potential issues. Timely identification and prompt treatment are of great importance to avoid potential serious complications of HTS.

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