



Priority #1 Safety



Assessment, Treatment, and Prevention Strategies for Hair-Thread Tourniquet Syndrome in Infants

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Hair-thread tourniquet syndrome (HTTS) is a rare and often overlooked, underreported, and preventable condition that can occur in newborns and young infants. Most commonly occurring from the wrapping of a hair or thread of cloth around the digits or genitalia, this condition can result in minor swelling and soft-tissue injury or, in extreme cases, ischemia of the affected appendage resulting in the need for amputation. Education of nurses and other health care providers, as well as parents, regarding some simple prevention techniques (see

Box 1) and warning signs can lead to prompt treatment and prevention of serious damage.

Background

Identified as far back as 1612, with a case first published in 1832, HTTS is an established, although rare, problem not often considered in the differential diagnosis of a fussy infant (Sivathanan & Vijayarajan, 2012). HTTS occurs when hair encircles a child's body part, leading

Abstract Hair-thread tourniquets are a rare occurrence but result in significant injury as a hair or thread wraps around a digit, resulting in tissue swelling, pain, or possible tissue ischemia. This condition is often overlooked in the differential diagnosis for a fussy infant. Awareness of this condition will help nurses and other clinicians identify and treat the condition. Some simple prevention strategies can help parents and other caregivers mitigate risk. <http://dx.doi.org/10.1016/j.nwh.2016.06.005>

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Box 1.

Prevention Strategies

1. A woman can manage postpartum hair loss by keeping her hair tied back and brushed frequently and by collecting and disposing of any shed hair (Sivarthasan & Vijayrajan, 2012; Strahlman, 2003).
2. The mother's and infant's clothes should be washed separately, and the infant's clothes should be washed inside out (Sivarthasan & Vijayrajan, 2012).
3. To evaluate for swelling or erythema, caregivers should remove an infant's socks and mittens every 2 to 4 hours while the infant is awake or with diaper changes (Moore, Strout, & Saucier, 2012; Strahlman, 2003).
4. Caregivers should inspect the infant's fingers and toes at bath time to ensure that no encircling strands are present (Moore, Strout, & Saucier, 2012; Shankar et al., 2012).
5. Loose hair strands should be promptly removed from clothing and the infant's diaper (Barton, Sloan, Nichter, & Reinisch, 1988; Hoppa, 2015).

to lymphatic and venous congestion. The infant becomes irritable as pain and skin irritation ensue and progress. This irritability is often manifested by continued wriggling of the affected part, causing swelling to increase. The cycle of irritation–movement–swelling, which may take hours to days to manifest, then causes the constriction to become tighter. As the constricting

Stray strands of hair falling into and being enclosed in the diaper and rushed cleansing during diaper changes may play a role in the development of genital HTTS

thread tightens, tissue injury results as the hair embeds into the skin. Further constriction and edema persist and worsen, leading to arterial insufficiency and tissue ischemia (Alvarez-Pérez, Mateo, Fernández-Redondo, & Toribio, 2013). Case reports speak to the detriment caused by untreated HTTS, noting necrosis that results from the tissue ischemia, requiring amputation of the affected part (Hussain, 2008). Although the most commonly affected part is the toe (see Figures 1 and 2), other areas include the fingers, penis, and labia (Alvarez-Pérez et al., 2013).

Etiology and Risk Factors

Although HTTS can occur at any age, the most common ages are between 2 and 6 months of

life. It has been suggested that most of these cases are due to coinciding maternal hair loss, a condition known as maternal telogen effluvium, which is experienced by more than 90% of women in the postpartum period. Although most humans shed approximately 50 to 100 hairs per day, during the late postpartum period, when maternal telogen effluvium is most common, a woman can shed more than 100 hairs per day (Strahlman, 2003).

HTTS commonly starts during bath time, when a mother's hair may fall into the infant's bath water and wrap itself around wriggling toes or fingers while the infant splashes and plays. The infant is then dressed, usually with socks and mittens in place for warmth and protection of the extremities. The trapped hair often remains unnoticed as it continues to dry and constrict around the digit (Hoppa, 2015). Another risk comes with washing an infant's and mother's clothing together, when the mother's hair becomes entwined in the socks and leggings of the infant's clothing.

Signs and Symptoms

A range of symptoms can be indicative of HTTS, with some mimicking other conditions, such as colic, corneal abrasion, or infection. The infant is often presented for evaluation with a complaint of unexplained fussiness and inconsolable crying. Swelling, erythema, tenderness to the touch, and annular constrictions on the affected body part are the hallmark signs of this

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