

HAIR TOURNIQUET SYNDROME LOCALIZED TO THE LABIA MINORA

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Abbreviation **HTS** = Hair tourniquet syndrome.

Case report. A 6-year-old girl with no significant past medical history was evaluated for a two-day history of acute, painful vulvitis.

Clinical examination (Fig. 1) revealed enlarged labia minora with confluent, serous fluid-filled blisters resting on an edematous and partially necrotic base. The lesions were clearly demarcated from the surrounding tissue by a distinct groove.

An initial suspicion of sexual abuse was raised but was rapidly excluded after thorough evaluation. A traumatic origin was subsequently considered, although no direct history of injury was reported. It was also noted that the patient routinely wore very tight underwear with prominent central seams, which could have contributed to mechanical irritation.

Surgical exploration performed by a gynecologist identified vulvar necrosis associated with twisted and entrapped strands of hair, responsible for local strangulation. Histopathologic examination confirmed the diagnosis, revealing ulcerated fibroepithelial polyps with foci of hemorrhagic necrosis and hair embedded within both the ulcerations and the underlying dermis (Fig. 2). After excision of the necrotic tissue and topical wound care, healing was achieved with residual scarring.



Fig. 1

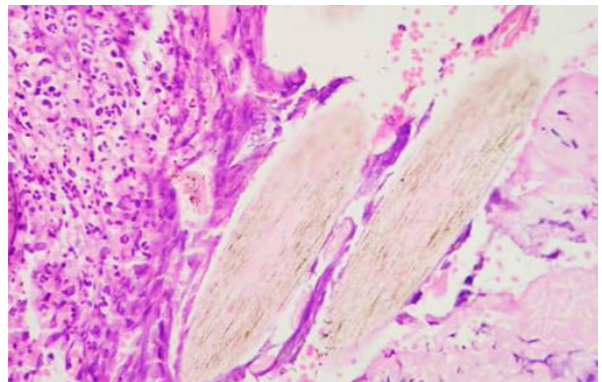


Fig. 2

Fig. 1, 2: Hair tourniquet syndrome localized to the labia minora in a 6-year-old girl. In Fig. 2 (H&E, x40), hair fragments embedded in the inflammatory tissue.

Discussion. Hair Tourniquet Syndrome (HTS) was first described in 1612, and the earliest reported case appeared in *The Lancet* in 1832, marking the beginning of its formal recognition as a clinical entity (1). HTS is a rare condition characterized by the constriction of a body appendage by a strand of hair or other filament, leading to impaired venous and lymphatic drainage, followed by swelling,

pain, and ischemic necrosis, with potential loss of the affected structure (2, 3). The syndrome most commonly affects the digits of infants, particularly the toes, but rare cases involving the external genitalia have also been reported (2, 4). Among genital cases, penile strangulation is more frequently documented than clitoral or labial involvement (5). To date, approximately 30 cases of genital HTS in girls have been described in the literature (6).

The exact etiology of HTS remains uncertain. In a literature review of 33 cases involving the female genitalia, most were attributed to accidental injury, although five cases were associated with potential predisposing factors such as autism, poor hygiene, clitoral hypertrophy, or other anatomical abnormalities. Nevertheless, the possibility of child abuse through deliberate wrapping of hair or thread around the labia minora should always be considered (6). In another review of 57 cases involving toes, penis, and labia majora, only one case was really linked to abuse (7).

In the present case, the causal diagnosis was suggested by the presence of necrotic foci and twisted, entrapped hairs observed during gynecologic exploration and confirmed by histologic examination. Contributing factors may have included repeated microtrauma from tight underwear and an anatomical predisposition—relatively prominent labia minora—which could have triggered a local inflammatory response and ultimately led to ischemic necrosis secondary to constriction. These findings, together with a careful medical history, are essential to avoid unwarranted suspicion of abuse.

Conclusion. This case highlights that hair tourniquet syndrome, although rare, can cause vulvar necrosis in young girls. Awareness of this often accidental condition enables timely diagnosis, prevents serious complications, and helps avoid misinterpretation as sexual abuse.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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