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Tied with Hair Strands- A Case of Hair Tourniquet Syndrome Involving Labia Minora

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ABSTRACT

Hair tourniquet syndrome is the strangulation of body appendages by a thread of hair. If neglected, it results in lymphatic obliteration, venous congestion, and arterial obstruction. A 25 years lady with a history of insect bite presented with intense itching and painful swelling in the left labia minora for three days. She had tied the swollen part with a bunch of hair strands leading to painful swelling. Local inspection revealed a 2x2 cm swelling in the left labia minora. The tourniquet effect was released by cutting the hair. Hair tourniquet syndrome involving female genitalia requires immediate recognition and treatment.

Keywords: Hair tourniquet syndrome; hair-thread tourniquet syndrome; labia minora

INTRODUCTION

The term hair-thread tourniquet syndrome (HTTS), first proposed by Barton and colleagues, describes fibers of hair wrapped around appendages e.g. toes, fingers, genital structures, or tongue eventually causing ischemia and tissue necrosis.¹ The wrapped hair creates a tourniquet-effect resulting in lymphatic obliteration, venous congestion, and arterial obstruction, and if neglected, leading to necrosis and auto-amputation of the end-perfusion appendage.² Commonly reported in children, the constriction usually involves fingers and toes.³ Though sporadic, cases with involvement of female genitalia have been reported.⁴

Here, we present a rare case of self-inflicted hair tourniquet syndrome involving labia minora in an adult woman.

CASE REPORT

A 25 years regularly menstruating primipara lady presented as an out-patient to the department of Gynecology and Obstetrics of a tertiary care center in western Nepal. She complained of painful swelling of her vulva for the last three days. She had to travel for three hours to reach the hospital, amidst scarce transportation facilities during the post-lock-down period. She gave a history of an unidentified insect bite three days back following which she experienced intense itching with some swelling in the left labia minora. In order to get rid of the irritating symptoms, she tied the swollen part with a bunch of her hair strands. In doing so, a substantial part of the normal tissue was also tied.

The subsequently resulted circumferential constriction led to increased swelling and excruciating pain of the part. This finally made her seek medical attention.

The patient had neither difficulty in passing urine, wide-based gait, abnormal vaginal discharge nor bleeding, and fever. Local inspection revealed a 2x2 cm swelling located between the upper and middle thirds of the left labia minora (Figure1).



Figure 1. Strands of hair tied on a part of labia minora.

The base of the swelling had been tied with a bunch of hair strands forming a thread. The bluish-black swelling was firm and tender to touch without any erosion or pus points over the surface.

The deeply embedded hair-tourniquet was carefully cut and removed without any loss of adjacent tissue (Figure

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2).



Figure 2. Cutting the hair strands to release the tourniquet.

The release of strangulation of the labia minora provided immediate relief of the pain. She denied overnight observation in the hospital due to family reasons. She was discharged with strict instruction on proper perineal hygiene.

She was thoroughly counselled on possible complications due to such faulty practice and ensured not to repeat such activity. As she did not turn up on scheduled follow-up after a week, she was contacted by telephone and found symptomatically better.

DISCUSSION

Hair-thread tourniquet syndrome is a condition predominantly diagnosed in the pediatric population. Bean and colleagues reported 81 cases of HTTS over a period of ten years in a major metropolitan children's hospital in Chicago, USA. Though most of the cases involved toes (69, 85%), female genitalia was involved in only three cases (4%).⁵ Barton et al. described 66 cases of hair-thread tourniquets in children aged between 8 and 11 years; 43% occurred in toes, 24% in fingers, and 33% in genitalia.¹

The pathophysiological mechanism involves the obstruction of lymphatic drainage and venous outflow by the wrapped fiber. The increasing edema eventually leads to arterial inflow as well resulting in tissue ischemia and amputation of the appendage may occur as an extreme consequence.¹

Many hypotheses have been postulated for the mechanism of entanglement of hair or thread, from unforeseeable

circumstances to even child abuse.⁶ Self-application of the thread around the penis or clitoris has also been described in the literature.^{6,7} Genital pain is the most common symptom. In the review done by Diaz Morales et al., 93% cases had genital pain, duration ranging from a few hours to several days.⁸ Some had swelling in the vulvar region or clitoris. Other less frequent complaints included dysuria, wide-based gait, bleeding and vaginal discharge. Our case did not have any other symptoms than genital pain and swelling. Differentials like cysts, hematoma, inflammation secondary to infection, allergy, insect bites, idiopathic genital edema or sometimes trauma should also be considered.⁹

In our part of the world, there exists a practice of tying pedunculated lesions like warts with a hair strand so that they fall off. This might have led our patient to tie the swelling. In some cultures, wrapping hair around an appendage has been used as an attempt to ward off evil spirits.⁹

Although removal of the hair tourniquet is usually uncomplicated, the hair often tends to lacerate the skin or the mucosa, and embeds in deeper tissues making the removal attempts difficult and painful.² Swelling of the strangulated appendage and the physical characteristics of hair contribute to the progressive cutting of the soft tissues resulting in excruciating pain.³

The basic management of HTTS involves removal of the hair to prevent compromise of the strangulated site. This can mostly be achieved by mechanical release of the hair with forceps, scissors or scalpel blade with or without sedation/anesthesia.⁵ In case the tourniquet cannot adequately be excised, the incision may be extended into the patient's skin longitudinally i.e. perpendicular to the tourniquet. This can also be achieved with application of chemical depilatory agents over the site for three minutes and washed away. It can be repeated 10 to 15 minutes later, if required. Depilatory agents are not preferred to use on mucous membrane as it can cause irritation.⁵ Instead, mechanical tourniquet release is the best choice for female genitalia.⁸ Lidocaine jelly can be used for local anesthesia. In our case, the hair was cut with scissors in the out-patient department without any anesthesia. However, in painful conditions or unsuccessful attempts of removal at office settings, such procedure should be performed in operation theater under anesthesia.⁵ Surgical management may also be required in conditions where deeper extension to the bone or muscle is involved. Various modalities like simple excision of the lump, dorsal z-plasty or simple perpendicular incision down to the bone have been described.¹⁰

When a single strand of hair is wrapped or in long-standing cases, the hair may be buried deeper resulting in difficult visualization. In such cases, use of magnifying eye loops with proper light can be helpful.²

Though our case presented late to us, we were able to manage without any complications. Delay in seeking health care is mostly due to inaccessibility of roads, lack of transportation facilities, financial constraints and ignorance. Ignorance led her to do so and unavailability of transportation facility in post lock-down period and embarrassment delayed her visit to the hospital.

CONCLUSIONS

Hair-thread tourniquet syndrome needs early recognition to reverse the viability of the involved area. Although children are mostly affected, adults may not be spared in some occasions. Female genitalia is rarely affected site and mechanical release is the preferred option for its management. This is a good example of self-inflicted HTTS due to ignorance and wrong judgement.

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