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CASE REPORT

PROGRESSIVE HAIR COIL STRANGULATION OF PENIS

Shahzad MS and Mohammed Shamim*

ABSTRACT

Strangulation of penis by hair strands is a well-known, but uncommon clinical entity. We report two cases occurring in circumcised boys causing progressive painless disfigurement of penis with strands of hair coiled around the penile shafts, strangulating the penis. Primary repair was done in one case and delayed primary repair was done in the other, both with satisfactory results.

KEY WORDS: Penis. Amputation. Strangulation. Hair coils.

INTRODUCTION

Strangulation of penis, due to foreign objects, is not an uncommon injury. It has been described in all age groups, and various foreign objects, as the cause of strangulation, have been reported. In children, application of various objects for the control of enuresis and as a form of child abuse has also been reported.¹ Hair remains an uncommon object, as a cause of progressive constriction of shaft of penis leading to strangulation. Extent of injury depends upon the duration of insult and can result in several possible complications including urethrocutaneous fistula, necrosis and even auto amputation.^{2,3} Treatment needs to be individualized according to the situation at hand. Two cases of such injuries are reported.

CASE REPORT

CASE 1: A 5-year-old circumcised boy was brought by his father for progressive deformation of his penis. On physical examination, 75% of the penis was found amputated all around the urethra (Figure 1). Only about two millimeters



Figure 1: 75% of the penis was amputated all around the urethra.

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of corpus spongiosum tissue was present circumferentially around the urethra, maintaining blood flow and sensations to the glans. Apparently both the corpora cavernosa were completely divided. A strand of hair was seen encircling twice around the narrow connection. On carefully unwrapping the hair, the glans was found hanging with an intact urethral connection (Figure 2).

Under general anesthesia the thin skin, which had covered the amputated surfaces, was excised with utmost care to preserve blood supply to the glans. The shaft was sutured to the glans with interrupted 000 chromic catgut. On the third postoperative day the glans penis was found to have a satisfactory blood supply (Figure 3).

Healing was satisfactory, and no complication was observed at three months follow-up (Figure 4). Satisfactory urinary stream and presence of nocturnal erection, without cordae, was reported at one year after operation.

CASE 2: The parents of an otherwise healthy 3-year-old circumcised boy were



Figure 2: The glans penis is hanging with the intact urethral connection.

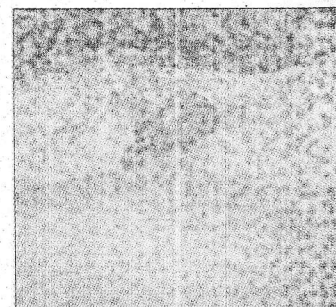


Figure 3: On the third postoperative day the glans penis has good blood supply.



Figure 4: Healing was satisfactory and no complications were observed at three months' follow-up.

worried for the increasing depth of his coronal sulcus, brought the boy to the surgical outpatient. On physical examination an encircling strand of hair was found adherent to the sulcus and was unwrapped immediately. The hair had damaged 30% of the shaft of penis but the urethra was intact. There was minor inflammation in the floor of the sulcus, which was cleansed with povidone iodine solution. Patient was managed conservatively as an outpatient with frequent local cleansing, antibiotics and regular follow-ups. The ulcer healed in a week. After three weeks the surgical repair was done as mentioned above for case 1. The recovery was uneventful, and subsequent follow-ups were satisfactory.

DISCUSSION

Penile tourniquet or constrictive band injury caused by an encircling object is a well-known entity and has been reported in all ages.⁴ Human hair, as a cause of penile strangulation, was first reported by Morgenstern in 1888.⁵ Since then, a number of cases have been reported from all over the world, interestingly, all in circumcised children.^{1,6}

The inner layer of the skin of prepuce attaches itself to the shaft of the penis immediately distal to the corona, the raised distal edge of the glans penis. If a thread or hair encircles the shaft at this site, it stays there because the raised edge of the glans stops it from sliding forwards, and the attachments of the skin of prepuce prevents it from proximal movement. Human hairs have been found to stretch when wet, and contract and tighten on drying. Furthermore, it being extremely thin, and perhaps due to foreign body reaction and local swelling, human hair may stay unnoticed as the culprit.⁷ The hair forms a ring, which gradually tightens and cuts the shaft all around. The raw surface is covered by growth of adjacent skin. This process may continue unnoticed and lead to necrosis, gangrene and complete amputation of the glans. As the hair cuts through the ventral aspect of the penis, the urethra may be transected, producing an urethrocutaneous fistula. The neurovascular bundle may also be injured, affecting sensation to the glans.²

Such penile injuries have been categorized according to the criteria⁸ in Table I.

Table I: Grades of injury as described by Bashir and El-Barbary.⁸

| | |
|---------|-------------------------------------------------------------------------------|
| Grade 0 | Constriction of skin without urethral injury. |
| Grade 1 | Partial division of corpus spongiosum with urethrocutaneous fistula. |
| Grade 2 | Complete division of corpus spongiosum and constriction of corpus cavernosum. |
| Grade 3 | Gangrene, necrosis and complete amputation of the glans. |

Patients with injuries due to coils of hair usually present with swelling and inflammation and these signs being non-specific,

the differential diagnosis would usually include infection, trauma, contact dermatitis, insect bites and foreign bodies. Pain is an uncommon symptom.⁷ Both the boys in our report presented with progressive, painless penile deformation due to chronic insidious strangulations. Painless unexplained edema of the glans with or without erosion of the coronal sulcus in a circumcised child should always include an underlying circular constricting object amongst the differential diagnosis. Diagnosis can usually be made on clinical examination; however, the child may need to be sedated or anesthetized.

In cases of early detection, simple removal of hair and conservative management is all that is required. Otherwise, the treatment needs to be individualized according to the situation at hand. The corpus spongiosum and penile urethra are covered by only a thin layer of fibrous tissue and, therefore, are more susceptible to injury than the corpus cavernosum, which is enveloped by the dense tunica albuginea.⁴ Urinary diversion and surgical exploration and repair of damaged corporae, tunica albuginea and/or urethra may be required depending upon the severity. Single-stage reconstruction has also been tried successfully in cases of delayed presentation.⁹ Reconstructive operation may be postponed until the tissues have healed completely. Urethrocutaneous fistulae, urethral strictures, chordae and erectile dysfunction should be borne in mind on subsequent follow-ups after treatment.

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