

## Penile Hair Tourniquet Syndrome: A Rare Case Report

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### Abstract:

*PENILE HAIR TOURNIQUET SYNDROME is a rare but potentially devastating clinical entity characterized by circumferential strangulation of coronal sulcus of penis resulting in various serious complications. If not diagnosed early, it can lead to urethral fistula, urethral transection, penile gangrene and even amputation of penis. It is mostly seen in circumscribed children. Herein we are reporting a case of Penile hair tourniquet syndrome (PHTS) and successful management of urethrocutaneous fistula (coronal) developed due to PHTS in a 5 year old male child.*

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### I. Introduction :

The term Hair Tourniquet Syndrome was first coined in 1988 and the 1<sup>st</sup> reported case was a case of Toe Tourniquet Syndrome in 1970[1]. PHTS is most commonly found in circumscribed male children between 3 to 9 years of age[2]. The circumcision bares the coronal sulcus and therefore the hair coil strangulates a circumscribed penis more easily than a normal penis. So if a male child between this age group presents with a penile or glanular or a gangrenous glans, he should be evaluated for this condition. Human hair has a property of high tensile strength and its ability to stretch when wet and contract and tighten when dry makes it an ideal tourniquet[3]. The etiology of this condition is mostly accidental. A high incidence has been linked to maternal telogen effluvium and as a part of cultural belief to tie hair around the penis to prevent nocturnal enuresis[3,4]. The condition may be easily missed due to the presence of severe edema and swelling of glans penis which may make the thin human hair invisible[5]. PHTS may present as penile swelling, urethral fistula, wasp-waist deformity, complete or partial necrosis or a combination of the above[6].

### II. Case Presentation :

A 5 year old circumscribed boy presented with chief complaints of swelling in his penile shaft and glans penis and passage of urine through an opening on the ventral aspect of the shaft. Physical examination of the penis revealed an edematous glans with a constriction band at the corona where a line of demarcation had formed. During examination under anesthesia, a coil of hair almost invisible was found embedded deeply in the necrotic tissue encircling the shaft of the penis.

Hair coil was cut over a needle inserted underneath the hair coil gently. Initially patient was given antibiotic and anti-inflammatory agents and posted for closure of fistula after 3 months. Catheterization using infant feeding tube 7 Fr. revealed the fistula defect with posterior wall intact and anterior wall deficient(fig.1).



Fig.1 Urethrocutaneous fistula due to PHTS

Mobilization of urethra was done proximally and distally. End to end anastomosis of proximal and distal urethra using polygalactin (Vicryl 5-0) was done. Infant feeding tube was removed after 10 days. The patient tolerated the procedure well and on removal of the infant feeding tube on 10<sup>th</sup> post operative day, he passed urine in a single stream from the tip of the penis.

### **III. Discussion :**

The etiopathogenesis of PHTS is that first there is lymphatic obstruction due to tourniquet effect of the hair that leads to tissue edema on either side of constricting band. This leads to secondary venous congestion as a result of which arterial perfusion is impaired causing necrosis and penile gangrene. Acute PHTS presents with erythematous penile skin, swelling, circumferential constriction and distal edema [7,8]. During this stage, the hair is embedded in the edematous penile skin and cannot be identified easily. If the tourniquet is not removed at this early stage, it may progress to skin infection and ulceration, and removal of constriction at this stage may prevent long term complications such as urethral fistula, urethral transection, penile gangrene or amputation. The first affected part is skin which is devoid of any subcutaneous tissue. Corpora spongiosum and urethra are more prone to injury than corpora cavernosa because they are covered by only a thin layer of fibrous tissue whereas the latter is protected by a dense layer of tunica albuginea. Management of PHTS requires exploration of etiology, presence of high index of suspicion, careful inspection of the affected area with magnification, proper examination under anesthesia and early intervention to prevent the occurrence of complications. The hair coil should be removed as soon as possible to avoid complications like urethral fistula, urethral transection, penile gangrene and even amputation of penis[9,10]. The causative agent (hair) should be promptly removed to avoid further damage. The various techniques used are unwrapping technique, the blunt probe cutting technique and the incisional approach. Depilatory creams may also be used if the access to hair is limited due to edema. Once the constricting band is removed, attention must be directed towards the urethra and depending on the severity of injury End- to-End urethroplasty or URAGPI may be used. In URAGPI, urethra may be mobilized upto 3 times the length of the distance between neomeatus and corona. Advantages of URAGPI include lesser incidence of fistula and diverticula formation and good cosmetic results. Disadvantages of the technique include development of chordee, glanular disruption, meatal retraction or stenosis.

### **IV. Conclusion :**

PHTS is a rare entity and must be considered as a surgical emergency that should be intervened immediately. Early diagnosis and treatment can prevent serious complications. The choice of the treatment depends on the severity of injury and varies in each individual case.

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