Traumatic catheterization as a precipitating factor for urethral prolapse in 4 years old child

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ABSTRACT

Urethral prolapse is a circumferential protrusion of the distal urethra through the external urethral meatus. The incidence of Urethral prolapse was reported to be one in 3000, and it occurs most often in prepubertal Black females and postmenopausal White women. Instrumentation of the urethra was reported to be a rare precipitating factor for UP. We report a case of Urethral prolapse in a child which was precipitated by traumatic accidental removal of the transurethral catheter.

Introduction

Urethral prolapse (UP) is a circumferential protrusion of the distal urethra through the external urethral meatus. The exact incidence of UP is not well known, with a suggested incidence of one in 3000, and it occurs most often in prepubertal Black females and postmenopausal White women. Instrumentation of the urethra was reported to be a rare precipitating factor for UP.

We reported a case of UP as the result of traumatic accidental removal of the urethral catheter in a 4 years old child.

Case presentation

A 4-year old African female was referred to St. Aidans hospital urology clinic, in Durban, South Africa, from a secondary level hospital in Northern Kwa-Zulu Natal with a urethral mass. Prior history of hot water burns into which a transurethral catheter was inserted, child accidentally stepped on catheter and it caused urethra to prolapse. Failed reduction attempt at referring hospital, patient was thereby observed at her region whilst she waits for her appointment date at St. Aidans hospital.

Patient reports having urinary urgency but does not report any dysuria, haematuria. On examination, a well-nourished child looked well and comfortable. Physical examination revealed old healed burns on arms and torso and legs. Abdomen was soft and non-tender and a mass protruding from the urethra seen, non-ulcerating, non-tender. Fig. 1.

Assessed as a urethra prolapse, manual reduction was attempted but not achieved in the outpatient setting, perhaps due to the fact that it has now been 4 weeks since the prolapse. Medical therapy was not attempted as the prolapse had worsen in terms of outward length from the initial referral image seen in Fig. 1, a close follow up would not be feasible due to the distance between patients home and St. Aidans hospital, and also due to the fact that the last two urethral prolapse seen, although spontaneous had been referred with haematuria and they had good surgical outcome after resection. Surgical intervention was dimmed as suffice in this case. And the fact that it was a traumatic cause.

Patient was admitted and planned for examination under anaesthesia, cystoscopy and/or excision of urethral mass. Intraoperative finding of an exophytic urethral mass visible. No lesions or abnormalities in distal urethra and bladder found upon cystoscope. A cold knife was used to excise the mass which had minor bleed that was controlled with compression, diathermy was not used so as to avoid the risk of stenosis.

The modified Kelly-Burnham technique involves excising the prolapsed mucosa over an indwelling Foley’s catheter and closing the incision by approximating the normal mucosa to the introitus mucosa with interrupted absorbable sutures was done.

Histology of the mass excised shows a markedly oedematous polyoidal urethral mucosal tissue focally overlain by stratified squamous

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Discussion

Urethral mucosa prolapse is a rare condition. It is seen more in prepubertal girls and postmenopausal white women.\(^1,2\)

This is to our knowledge the first reported case in a child post traumatic removal of a urethral catheter.

In our case accidental forceful removal of catheter whilst the balloon still inflated was the major precipitating factor. Exact cause of urethral mucosal prolapse remains unknown, theories postulated include congenital and acquired factors. A weakened pelvis allows for urethral hypermobility, and other factors suggested include intrinsic abnormalities of the urethra. The major anatomical defect of urethral mucosal prolapse is the division of the longitudinal and circular-oblique smooth muscle layers.

The prepubertal UP is usually asymptomatic. The most common presentation is palpable mass and bleeding secondary to erosion and infection.\(^1\) Children may present with voiding disturbances such as dysuria, frequency, introital pain, or haematuria. A doughnut-shaped mass protruding from the anterior vaginal wall with central urethral opening is diagnostic.

Treatment can be medical or surgical.\(^2,3\) Medical treatment is the first line if the UP is not infected, gangrenous or ulcerated. The current recommendation for medical treatment for UP includes estrogen cream, antibiotics and sitz bath.

Surgical treatment includes; modified Kelly-Burnam operation in which the prolapsed mucosa is excised, and the mucocutaneous junction is re approximated with absorbable sutures. Other surgical methods include Keefe vagina/urethra plication, surgical reduction maintained with mattress sutures, manual reduction, and cautery excision.

Complications of Surgical treatment includes urethral stenosis and urinary incontinence.\(^4\) Complications should be discussed with the patient before selecting the surgical modality of treatment. The incidence of such complications is not well known due to the rarity of cases.

Urethral prolapse is a rare condition, our case is the first reported case of UP secondary to incidental traumatic removal of urethral catheter. More studies are needed to identify the underlying cause of such condition.

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Fig. 1. Urethral prolapse of a 4-year-old girl on initial assessment.

Fig. 2. Urethra 4 weeks post excision of the prolapse.

Fig. 3. Histology of the excised urethra protrusion 4 weeks after the prolapse.

epithelium and partially by transitional epithelium with foci of superficial ulceration and non-specific patchy infiltration. Fig. 3.
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