Original Research Article

A 5-YEAR REVIEW OF URETHRAL MUCOSA PROLAPSE AND MANAGEMENT AT THE FEDERAL MEDICAL CENTRE, YENAGOA, SOUTH-SOUTH NIGERIA

ABSTRACT

Background: Urethral mucosa prolapse is a condition in which there is a circular complete eversion of the distal urethral mucosa through the external urethral meatus.

Objective: To determine the prevalence of urethral mucosa prolapse and its management plans at the Federal Medical Centre, Yenagoa, South-South, Nigeria.

Materials and Methods: This retrospective study was conducted between 1st January, 2016 and 31st December, 2020. Data from the patients' case records were entered into a pre-designed proforma, and were analysed using statistical software (Statistical Product and Service Solutions for windows® version 25, SPSS Inc.; Chicago, USA). Results were presented in frequencies and percentages for categorical variables, and mean and standard deviation for continuous variable.

Results: Three patients were managed for childhood urethral mucosa prolapse in the 5-year period under review. The age range in this study was 5 – 7 years, with a mean of 6.67 years. They were all pre-menarcheal. They all had excision of the prolapsed urethral mucosa using the modified Kelly-Burnham (four-quadrant excisional) technique, following failed medical management.

Conclusion: Our study revealed that the prevalence of urethral mucosa prolapse in our environment is low, and the girls were all premenarcheal. The commonest presenting features were genital bleeding and genital swelling.

Keywords: Urethral mucosa prolapse, Childhood, Pre-menarcheal, Kelly-Burnham.

INTRODUCTION

Urethral mucosa prolapse is a benign condition which was first described in 1732 by Solingen.[1] It is a condition in which there is a circular complete eversion of the distal urethral mucosa through the external meatus.[2] The protruding mass is tubular and covered by easily bleeding mucous membranes.[3] It is a rare, often misdiagnosed benign condition with an incidence of 1:3,000 mostly among pre-pubertal black girls,[2] between the ages of 3 and 9 years,[4] and postmenopausal white women.[5]

The exact aetiology is unknown, but increased urethral mobility, mucosal redundancy, increased abdominal pressure, poor attachment between the inner longitudinal and outer circular smooth muscle layers of the urethra, oestrogen deficiency, female genital mutilation and poor nutrition have been

implicated.[5,6] These factors are believed to lead to disruption of the muscular layers with resultant complete and circular eversion of the mucosa and eventual prolapse.[4] Risk factors for children include trauma, straining, chronic cough and large weight for age.[7,8]

Urethral mucosa prolapse in childhood is usually asymptomatic and often an incidental finding during routine examination.[9] Symptomatic children may present with bloody spotting on their underwear or diaper,[9] itching, dysuria, haematuria, frequency, and urgency especially in adolescent, and post-menopausal women.[5] Patients with postmenopausal urethral prolapse are also often symptomatic. Vaginal bleeding associated with voiding symptoms is fairly common.[5] Vaginal examination reveals a reddish circular urethral mucosa at the external meatus with a dimple on it, which is also referred to as a doughnut-shaped mass at the external urethral meatus.[2,4] The mass may be painful and tender to palpation.[1] The mucosa is ulcerated in many cases and usually bleeds upon contact.[1] The congested mucosa may appear bright red or dark and cyanotic.[1]

Diagnosis of urethral mucosa prolapse is clinical and is made by visualisation and catheterisation of the central opening within the prolapsed urethral mucosa.[5,9] Extensive investigation is not necessary to make the diagnosis; however, ultrasound scan can be done to exclude malignancy and other abnormalities of the kidneys and bladder.[2,5] Differential diagnoses include sexual abuse, coital laceration, urethral caruncle, urethral papilloma, ectopic ureterocoele, urethral leiomyoma, para-urethral cysts, peri-urethral abscess, Schistosoma granuloma, malakoplakia, sarcoma botryoides, condyloma, endodermal sinus tumour and rhabdomyosarcoma.[1,5,9–12]

Complications like acute urinary retention and strangulation may follow urethral mucosa prolapse if untreated especially in adults.[1] Strangulated urethral mucosa prolapse is more common in the adult population than in the paediatric population.[1] Urethral mucosa prolapse may be associated with poor management and significant morbidity like urethral loss,[9] because it is rare and often misdiagnosed.[2]

Treatment options include medical and surgical approach. Medical treatment involves use of sitz bathe, topical oestrogen cream and antibiotics. This can be palliative with associated high failure rate and recurrence.[9] Surgical management is instituted if medical management fails. Four-quadrant excision with suturing of the edges to the surrounding skin (modified Kelly-Burnham operation) is usually done. Surgical treatment is better for restoration of functional anatomy and less likelihood of recurrence.[9] Surgical treatment is also preferred by many authors because it is simple, safe, effective, and is not associated with long-term follow-up of the children which can be erratic and unreliable.[2,9] Other reported methods of repair include manual reduction of the prolapsed urethral mucosa, cauterization and cryosurgery.[4] Complications which may arise from surgical excision include urethral stenosis, urinary incontinence and recurrence of prolapse.[5,13]

Urethral mucosa prolapse is a rare disease of the pre-pubertal girls that is often misdiagnosed by clinicians.[2] Parents are often apprehensive and suspect sexual assault. The diagnosis is clinical, and is made by exposure of the classical reddish mass with a dimple at the centre below the clitoris. Surgical excision is the advocated treatment of choice because it is simple, safe, and most effective in relieving symptoms.[2] The objective of this retrospective study is to determine the prevalence of urethral mucosa prolapse and management at the Federal Medical Centre, Yenagoa, South-South, Nigeria over a five-year period.

MATERIALS AND METHOD

This retrospective study was carried out in the Gynaecology Unit of the Federal Medical Centre, Yenagoa, Bayelsa State, South-South, Nigeria between 1st January 2016 and 31st December 2020.
The hospitals' research and ethics committee examined and approved this study.
All the patients that were managed for urethral mucosa prolapse in the Unit within the period under review were included in this study. The patients that did not have urethral mucosa prolapse were excluded from the study. The management protocol in this Centre is to initially manage the patients on outpatient basis with twice daily sitz baths and topical application of oestrogen (premarin) cream twice daily at the external urethral meatus, both for one-month duration. Excisional techniques are resorted to following failed medical management. The surgeries were done under general anaesthesia.

Data from the patients' case records were entered into a pre-designed proforma, and were analysed using statistical software (Statistical Product and Service Solutions for windows® version 25, SPSS Inc.; Chicago, USA). Results were presented in frequencies and percentages for categorical variables, and mean and standard deviation for continuous variable.

RESULTS

Out of 2,478 gynaecological patients seen in this Centre, 3 (0.12%) were managed for childhood urethral mucosa prolapse in the 5-year period under review (Table 1). The age range in this study was 5 – 7 years, with a mean of 6.67 years. They were all pre-menarcheal. All (100%) the girls presented with genital bleeding and genital swelling. None of them had urinary symptoms. Pelvic examination of the girls revealed normal female external genitalia with blood-stained vulva, and vestibule occupied by hyperaemic, oedematous, circumferential, doughnut-shaped, soft fleshy mass around the external urethral meatus of 0.5 – 1 cm in diameter. They were tender to touch. Their labia majora and minora were normal for age. The hymens were intact, and there was no evidence of female genital mutilation in the girls. None of the girls had any microbial growth on pre-operative urine culture.

All the girls initially had outpatient treatment with twice daily sitz baths and topical application of oestrogen (premarin) cream twice daily at the external urethral meatus, both for one-month duration. They all had excision of the prolapsed urethral mucosa using the modified Kelly-Burnham (four-quadrant excisional) technique, following failed medical management (Table 1). There was no reported postoperative complication or recurrence of prolapse at their follow-up visits till two years.

Table 1: Characteristics of patients managed for urethral mucosa prolapse.

Characteristics	Frequency N = 3 (%)
Age (years)	
5 – 8	3 (100)
Mean age ± SD in years	**6.67 ± 1.25**
Clinical presentation	
Genital bleeding	3 (100)
Genital swelling	3 (100)
Urine culture	
No microbial growth	3 (100)
Surgical technique	
Modified Kelly-Burnham	3 (100)
Post–operative complication	
No	3 (100)

DISCUSSION

Urethral mucosa prolapse (UMP) is an uncommon gynaecological lower urinary tract lesion. The finding of a prevalence of 0.12% over the 5-year period under review in this facility supports the rarity of this disorder. Our finding was lower than 1.13% to 1.32% reported by other authors in Western Nigeria.[14,15] Our study also reports that patients affected were prepubertal and of African descent which is in keeping with existing literature, but contrasts pockets of findings of this rare condition which have been reported among pubertal females within and outside Nigeria.[3,16] The mean age of children affected in this study of 6.67 years were similar to reports by Okafor and Asimadu [2] in South-East Nigeria, but higher than the mean age of 5.3 years reported by John et al.,[9] in an earlier study in Port Harcourt, South-South Nigeria.

While prepubertal urethral prolapse is predominantly without symptoms and often found incidentally on routine examination, the most common manifestation is genital bleeding and periurethral mass as was seen in all the patients in this study. Our finding was similar to reports by John et al,[9] in Nigeria and Holbrook and Misra [16] in London, UK. Unlike findings from other authors of the occurrence of other

symptoms suggestive of urinary tract infections like dysuria, haematuria and bacterial growths on urine culture,[14,16,17] our patients did not have any other urinary symptoms and urine cultures yielded no bacterial growth.

We also did not find any link between UMP and female genital mutilation, urinary tract infections or sexual abuse as these did not occur in our patients. These factors have been hypothesised as possible mechanisms in the aetiopathogenesis of this rare condition. Despite the few numbers of cases in this study, it is worth highlighting that the effect of these 'suggestive' causes was negligible in our study and may mean other likely aetiologies such as mucosal redundancy, increased abdominal pressure, poor attachment between the inner longitudinal and outer circular smooth muscle layers of the urethra and oestrogen deficiency earlier alluded to, should be given preferential consideration.

Both medical and surgical interventions were used in this study. All patients were initially conservatively managed on outpatient basis with twice daily sitz baths and topical application of oestrogen (premarin) cream twice daily at the external urethral meatus for a duration of one-month. However, all had excision of the prolapsed urethral mucosa using the modified Kelly-Burnham (four-quadrant excisional) technique, following failed medical management. In this study there were no records of post-operative complications or recurrence of symptoms on follow up after two years. Our finding differed from findings from a study in China, where out of the 7 Chinese prepubertal girls with UMP studied, 2 (28.6%) responded to conservative management alone.[18] Another study by Holbrook and Misra [16] in the UK, conducted among 21 prepubertal black females, reported successful complete reduction of MUP under general anaesthesia (in three out of seven of the girls), to be an effective surgical alternative with no recurrence.

While several propositions have been made by authors to manage prepubertal girls with UMP conservatively,[19] others argue of the superiority of surgical management.[8,20] Albeit, we agree with the position of other colleagues who argue that treatment of patients be individualised.[9] Trial of conservative management should be done initially in low resource settings and if unsatisfactory, surgery can then be performed.

The limitation of this study lies in the fact that it is a retrospective, single hospital-based study, which may not reflect the findings in the general population of children in our subregion.

CONCLUSION

Our study revealed that the prevalence of urethral mucosa prolapse in our environment is low, and the girls were all premenarcheal. The commonest presenting features were genital bleeding and genital swelling.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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