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Treatment of Paraurethral Cyst in Adult Women – Our Experiences

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ABSTRACT

INTRODUCTION – Paraurethral cyst- like structures are quite common and affect 1- 6% of females between 20 to 60 years of age . Urethral diverticula account for 80 % of these lesions. Paraurethral cysts are very uncommon.Paraurethral cysts may be congenital or acquired. Since mostly they are asymptomatic they are rarely diagnosed and treated. Once they become symptomatic they require treatment. Here we describe our experience in management of paraurethral cysts and review of the literature .

MATERIALS & METHODS – A retrospective chart review was conducted on adult women diagnosed with paraurethral cysts in our hospital between 2012 to 2016 . Eight women aged 25-43 years (mean age :34 years) with paraurethral cysts were diagnosed between 2012 to 2016 at our hospital. The patients complained of pain, dysuria, dyspareunia. All of them underwent a pre-operative diagnostic cysto-urethroscopy. All of the paraurethral cysts were of size 2.5 to 4 cm (mean size: 3.25 cm) and solitary and were in the distal part of the urethra. All of them underwent surgical excision. The mean follow-up was 9 months (6-12 months)

RESULTS – All of the patients had sustained relief of symptoms.There were no complications or recurrences. Histopathological examination of the cyst wall showed lining of stratified epithelium.

CONCLUSION – Our report is consistent with the few existing reports on paraurethral cysts.In symptomatic patients a simple urological examination without the need for invasive radiological tests is sufficient for the diagnosis. A surgical excision is associated with low risk of post-operative complications leading to complete cure.

KEYWORDS paraurethral cysts, adult women, diagnosis, treatment

INTRODUCTION

Paraurethral cyst- like structures are quite common and affect 1- 6% of females between 20 to 60 years of age . Urethral diverticula account for 80 % of these lesions. Paraurethral cysts are very uncommon [1,2] . Paraurethral cysts may be congenital or acquired. Congenital paraurethral cysts arise from the various embryological components and vestigial remnants of the vagina and the urethra. Until 8 weeks of embryonic development , both Mullerian ducts merge at the distal (paramesonephric) and then the uterus is lined with pseudostratified columnar glandular epithelium and then the cervix and vagina develop. Neonatal and infantile paraurethral cysts have been reported in the literature [3].Due to the relatively benign nature and appearance in adult women they are rarely diagnosed and reported and reports available in literature are relatively scarce. According to the morphological criteria proposed by Deppisch , paraurethral cysts can be divided into four groups, characterized by different etiologies: Muller's cysts, Gartner's duct cysts, cysts originating from Skene's glandular ducts, and acquired squamous epithelial cysts[4]. They may be confused with urethral diverticula. The protocol for diagnosis and management of these lesions is still unclear[5,6].The aim of the paper is to present our own material concerning the treatment of this disease.

MATERIALS AND METHODS

A retrospective chart review was conducted on adult women diagnosed with paraurethral cysts in our hospital between 2012 to 2016 . Eight adult women aged 25-43 years (mean age :34 years) with paraurethral cysts were diagnosed. All patients were multiparous and symptomatic. They also complained of the perceptible presence of a tumor mass in the region of the urethra and vaginal vestibule .The patients complained of pain, dysuria, dyspareunia. All of the paraurethral cysts were of size 2.5 to 4 cm (mean size: 3.25 cm) and solitary and were in the distal part of the urethra (Fig.1) .

Palpation and compression of these cyst-like lesions caused no discharge from the external urethral orifice. The diagnosis of paraurethral cysts was also confirmed by transvaginal ultrasonography. Additionally, routine blood morphology and biochemistry tests were performed, as well as urinalysis and urine culture, and abdominal ultrasonography. No abnormalities were detected in these accessory investigations. MRI showed simple cysts in all cases and helped in confirming the diagnosis and planning of surgery,as one case had concomitant paraurethral cyst with Gartners cyst (Fig.2) .Urethrocystoscopy did not detect any diverticular opening or contact of the lesion with the urethral lumen, which confirmed the suspicion of a cyst.

All of them underwent surgical excision. After insertion of a Foley's catheter into the urinary bladder, with the patient in lithotomy position, the anterior vaginal wall was incised longitudinally above the palpable lesion. Then the cyst was dissected carefully from the vaginal and urethral wall and dissected in full (Fig.3).Foley's catheter was left in the bladder for 24 hours . The patients were discharged from the hospital two days after the surgery.

RESULTS

The recovery and healing were without complications; there were no recurrences in any patient and no problem in voiding patterns. A histological examination showed a simple cyst lined with squamous or transitional epithelium or both (Fig.4).

The mean (range) follow-up was 9 (6–12) months.Patient characteristics are shown in Table I.

DISCUSSION

Paraurethral cysts in women are classified primarily as acquired or congenital, although a clear distinction often is difficult. Congenital paraurethral cysts arise from the various embryological components and vestigial remnants of the vagina and the female urethra[5,6,7]. Acquired inclusion cysts of the surface epithelium have been reported as the most common cystic lesion of the vagina [8], often thought to be secondary to the trauma of childbirth or caused by iatrogenic surgical trauma, e.g. episiotomy.

Normally, the Wolffian (mesonephric) ducts are regressed in females and their remnants form the Gartner's duct, epoophoron, and paraophoron. Starting from week 12 of intrauterine development, the squamous epithelial plate, which originates from the urogenital (UG) sinus, begins to grow upwards and the original pseudostratified columnar epithelium is replaced by squamous mucosa. In addition to the inferior vagina, Skene's glands and Bartholin's glands are derivatives of the UG sinus[4, 8] . As the Skene's ducts originate from the UG sinus embryologically, these cysts are lined with stratified squamous epithelium . Although clinically significant, Skene's ducts cysts are rare. When these cysts are >2 cm patients frequently present with urinary symptoms and complain of obstructive or irritative voiding symptoms [9].

Paraurethral cyst-like lesions are estimated to occur in 1-6% of the female population. In this group, urethral diverticula account for a vast majority of cases – over 80%, whereas cysts constitute the second largest group – about 10%. The remaining rare cases are prolapsed or ectopic ureteroceles[1] . The low incidence of symptomatic cases explains the rarity of surgical interventions undertaken for this reason. Therefore, the available literature contains few publications concerning the diagnostics, differentiation and treatment of paraurethral lesions in women.

Paraurethral cysts are usually asymptomatic and frequently detected incidentally during routine pelvic examination; however, patients can present with complaints of a visible or palpable cyst (according to size), pain, dyspareunia, dysuria, distorted urinary outflow, or vaginal discharge. In most cases, diagnosis can be made on simple examination. On physical examination, the localization, mobility, sensitivity, surface properties (smooth or rough), and stiffness (cystic or solid) of the lesion should be determined. Malignancy should always be a consideration[4]. Therefore, differential diagnosis of paraurethral tumor-like lesions should take into consideration numerous cystic and solid structures, such as: urethral diverticula, ectopic ureterocele prolapse, leiomyomas, squamous cell carcinomas, neurofibromas,etc [10,11,12]. From the practical point of view, differentiation of a urethral cyst from a diverticulum seems to be the most important. In of 2/3 cases of urethral diverticula, it is possible to squeeze out their contents into the urethral lumen on palpation, which allows observation of discharge from the urethral meatus. The acceptable method allowing to confirm communication of the lesion with the urethral lumen is voiding urethrocystography, with sensitivity reaching 95% [12] .

Diagnostics and differentiation of urethral lesions also utilizes more advanced imaging techniques, especially magnetic resonance imaging (MRI). The use of MRI is not included in standard diagnostics, but information provided by it may facilitate appropriate planning of the surgery in selected cases. High degree tissue resolution imaging gives a detailed view of the anatomy of the cyst in relation to the urethra and sphincter being the most sensitive method of detecting potential communication to the urethral lumen. Sometimes it also allows detection of the presence of additional cysts, inaccessible during physical examination as in one of our case had additional Gartners duct cyst[11] . All our patients underwent transvaginal ultrasonography, which revealed a paraurethral lesion, cyst-like in character. Further differential diagnosis utilized urethroscopy, which failed to detect the orifice of the potential diverticulum.

In case of symptomatic cysts, surgical treatment is indicated. The patients treated in our department underwent resection of the cysts, which besides marsupialisation[7], is an accepted method of management. Both methods are regarded as effective for sustained elimination of symptoms. There are also reports concerning efficacy of less invasive treatment, involving aspiration of the cyst contents with tetracycline sclerotherapy.

After surgical treatment of paraurethral cysts, just like after most procedures associated with dissection of the paraurethral tissues, there is a possibility of complications, such as: recurrence of the cyst, vesicourethral fistula, urinary incontinence, urethral stenosis and recurrent infections of the lower urinary tract. There is also a risk of intraoperative damage to nerve terminals located in the erogenous zone, which may result in impairment of sexual sensitivity, or anorgasmia. . Postoperative stress incontinence is suggested to result from the additive effect of surgical trauma and damage of urethral and bladder neck muscles due to an inflammatory process going on inside the cyst and in the surrounding tissues. Patients with the lesion localized near the proximal part of the urethra are at higher risk of developing such a complication . Literature, however, rarely describes these complications.

In reported cases, histopathological investigations revealed the presence of squamous epithelium, which would indicate acquired squamous epithelial cysts. The clinical importance of differentiation between paraurethral cysts with respect to their embryonal origin is currently unclear and seems to have no prognostic significance[12] .

CONCLUSION

Paraurethral cysts may be symptomatic and routine urological examinations with urethrocystoscopy are sufficient for diagnosis of these benign lesions without using advanced imaging techniques.The results of the study are consistent with the few existing literature reports. In the case of symptomatic paraurethral cysts, a relatively simple surgical procedure, associated with the low risk of postoperative complications, leads to a complete cure.

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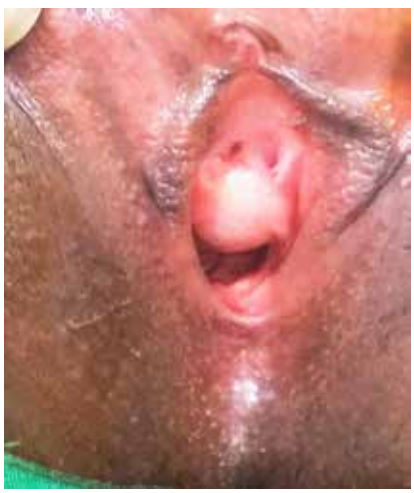
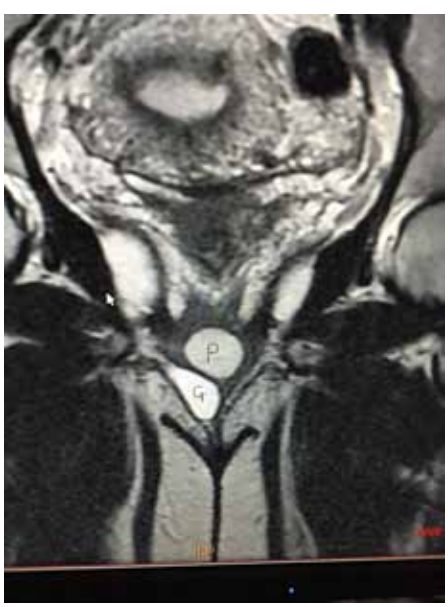
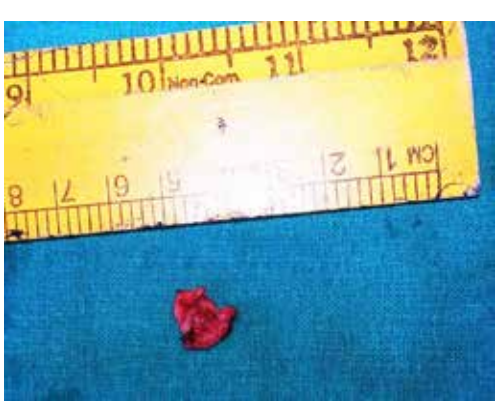
Table – Showing patient characteristics

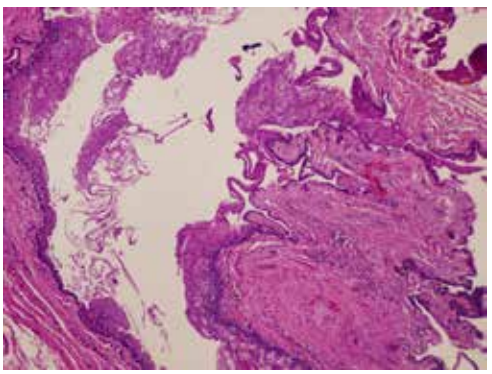
Case	Age	Size	Parity	Site	Complaints	Epithelial Lining
1	25	2 cm	Multiparous	Lateral to urethral meatus	Palpable mass, dyspareunia	Squamous epithelium
2	34	2.5 cm	multiparous	Inferior to urethral meatus	Palpable mass, dysuria	Transitional epithelium
3	43	3 cm	multiparous	Lateral to urethral meatus	Palpable mass, dysuria	Squamous + transitional epithelium
4	28	2 cm	multiparous	Lateral to urethral meatus	Palpable mass, dyspareunia, dysuria	Squamous epithelium
5	30	3 cm	multiparous	Lateral to urethral meatus	Palpable mass, dyspareunia,	Transitional epithelium

6	33	2.5 cm	multiparous	Lateral to urethral meatus	Palpable mass, dyspareunia,	Squamous epithelium
7	38	2 cm	multiparous	Inferior to urethral meatus	Palpable mass, dyspareunia, dysuria	Transitional epithelium
8	29	3.5 cm	multiparous	Lateral to urethral meatus	Palpable mass, dysuria	Squamous epithelium









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