

Treatment of paraurethral cysts in female patients – description of three cases

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KEY WORDS

paraurethral cyst ► surgical treatment ► women

ABSTRACT

Introduction. Paraurethral cyst-like structures are quite common and affect from 1% to 6% of the female population between 20 and 60 years of age. Urethral diverticula account for approximately 80% of paraurethral cyst-like lesions. Paraurethral cysts are considerably less frequent. Because of their usually asymptomatic character, paraurethral cysts are rarely diagnosed and treated, and reports available in databases are relatively scarce. However, the presence of cysts may cause recurrent genitourinary symptoms. Symptomatic cysts are an indication for surgical treatment.

The aim of the paper is to present our own material concerning the treatment of this disease.

Material and methods. Three patients with paraurethral cysts, reporting symptoms such as dysuria, dyspareunia, and periodical pains in the region of external genitals were hospitalized in our department between 2005 and 2008. All patients underwent surgical resection of the cysts by vaginal approach.

Results. Sustained lack of symptoms was obtained in all patients. Histopathology of the excised lesions confirmed the diagnosis of simple cysts lined with stratified squamous epithelium. No rare complications described in literature were noted.

Conclusions. The results of this study are consistent with the few existing literature reports. In the case of symptomatic paraurethral cysts, a relatively simple surgical procedure, associated with low risk of postoperative complications, leads to a complete cure.

INTRODUCTION

Paraurethral cyst-like structures are rare and affect from 1% to 6% of the female population between 20 and 60 years of age. Urethral diverticula account approximately for 80% of paraurethral cyst-like lesions. Paraurethral cysts are considerably less frequent [1,2]. According to the morphological criteria proposed by Deppisch [3], 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.

Clinical differentiation between different types of cysts is difficult, and classification of a cyst into a specific group is possible only after histopathological investigation of the excised lesion on the basis of identification of the epithelial lining type. In practice,



Fig. 1. MRI showing location of a cyst and its relation to the surrounding structures. B: bladder; C: paraurethral cyst; U: urethra.

however, inflammatory processes occurring within the lesion often lead to the destruction of cystic epithelium to such an extent that its identification is impossible, or, as a result of metaplasia, more than one type of epithelium may be represented [3]. Some cyst types have been found to be characterized by coincident urinary tract anomalies, which justifies extending the diagnostics to include urinary tract imaging [4]. Gartner's cysts evolve from the remnants of Wolff's duct, also giving rise to the ureteric bud. Therefore, it is associated with the increased incidence of concurrent anomalies, the most frequent among which is congenital absence of the ipsilateral kidney [5]. Wolff's duct is also associated with the early phase of development of Muller's duct, the anomalies of which lead to defects of the uterus, including double and bicornuate uterus [4].

Because of their usually asymptomatic character, paraurethral cysts are rarely diagnosed and treated, and reports available in databases are relatively scarce.

However, the presence of a cyst may cause recurrent genitourinary symptoms, such as: pains in the external genital organs, dysuria, dyspareunia, micturition disturbances or a palpable, or sometimes visible, mass in the region of the urethra [6, 7]. Symptomatic cysts are an indication for surgical treatment. The aim of the paper is to present our own material concerning the treatment of this disease.

MATERIAL AND METHODS

Three patients with paraurethral cysts were hospitalized in our department between 2005 and 2008. They reported symptoms such as dysuria, dyspareunia, and periodical pains localized in the region

of the external genitals. They also complained of the perceptible presence of a tumor mass in the region of the urethra and vaginal vestibule. On physical examination, the lesions were identified as soft, oval structures from 1 cm to 2.5 cm in diameter, located, in the first case, in the region of the external urethral opening, and in the second and third one, 1 and 1.5 cm proximally, respectively.

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. Urethrocystoscopy did not detect any diverticular opening or contact of the lesion with the urethral lumen, which confirmed the suspicion of a cyst. Magnetic resonance scans showed simple cysts in all cases and helped in preoperative planning (Fig. 1). The patients were qualified for surgical resection of the cysts under spinal anesthesia. 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 (Fig. 2) and dissected in full (Fig. 3). Foley's catheter was left in the bladder for 24 h. The patients were discharged from the hospital two days after the surgery.

RESULTS

Histopathology of the excised lesions confirmed simple cysts with squamous epithelium present. No intra- and postoperative complications were observed in either patient.

Sustained remission of the symptoms during 5-, 16- and 26-month follow-up was obtained. Rare complications described in literature, such as recurrence of the cyst, vesicourethral fistula, urinary incontinence, urethral stenosis and recurrent infections of the lower urinary tract were not observed in our cases.

DISCUSSION

Paraurethral cyst-like lesions are estimated to occur in 1-6% of the female population. In this group, urethral diverticula account



Fig. 2. Paraurethral cyst dissected from the surrounding tissue.

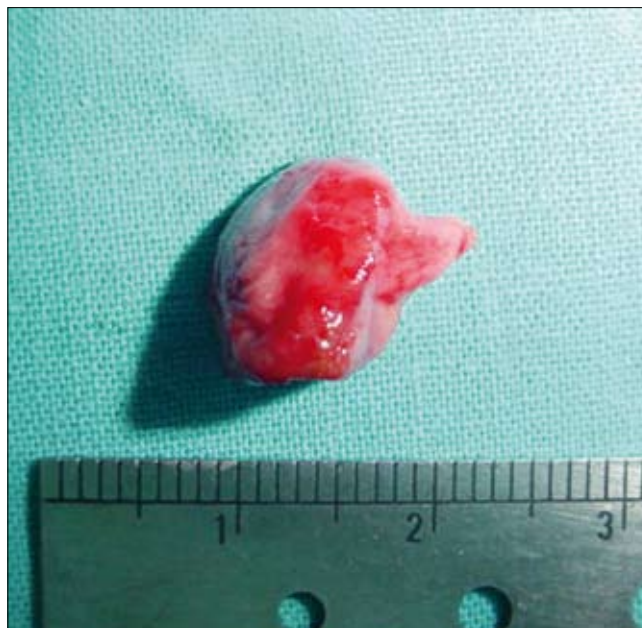


Fig. 3. A whole paraurethral cyst after resection.

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 ureterocele [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. In all reported cases, it was possible to establish provisional diagnosis on the basis of clinical examinations, because the lesions were visible and palpable. It has been estimated that in about 50% of patients the lesions are detectable clinically [1]. The cyst usually presents itself as a soft, oval and mobile mass. Sometimes the tension of the cystic wall suggests the presence of a solid tumor. 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. [7, 8].

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 urethrocytography, with sensitivity reaching 95% [9].

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 [10]. The scope and accuracy of pre-operative differential diagnostics depends on an individual case and whether precise diagnosis of the lesion type can influence the management of the specific case. 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 and MRI which confirmed a simple cyst and by showing extent of a lesion proximally helped in preoperative planning and counseling the patient regarding the risk of postoperative incontinence from sphincteric damage.

Paraurethral cysts are usually small and rarely cause any symptoms. Mullerian cysts are larger (1-7 cm) and more frequently have clinical manifestations [11]. Paraurethral cysts over 10 cm in diameter or multiple lesions are very rarely reported [4, 10].

In case of symptomatic cysts, surgical treatment is indicated. The patients treated in our department underwent resection of the cysts, which besides marsupialization, is an accepted method of management. Both methods are regarded as effective for sustained elimination of symptoms [11]. There are also reports concerning efficacy of less invasive treatment, involving aspiration of the cyst contents with tetracycline sclerotherapy [12].

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. Location of the cyst near the external urethral meatus, in the vicinity of the clitoris and vulva, potentially creates the possibility for such a situation [12]. Planning of cyst resection procedures we should take into consideration the anatomy and function of the urethra. 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 [10]. 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 [13].

CONCLUSIONS

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. Diagnostics for paraurethral cysts in patients with chronic or recurrent dysuric symptoms makes it possible to detect and eliminate the cause of complaints.

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