

Parameatal cyst: A presentation of a rare case and literature review

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Abstract

Parameatal cysts are very rare in clinical practice due to their asymptomatic course. This article presents one such case. A 25-year-old male patient with a formed spherical cystic tumor measuring 0.7 cm in the area of the external opening of the urethra. Total resection of the cystic formation, suturing of the resulting imperfections was carried out. According to the results of histology, the cyst is formed by a flat and cylindrical epithelium. After 3 months of follow-up, good results were established without relapse and cosmetic appearance.

Key words: cystoma, resection, meatus, relapse

Introduction

Cyst formation in the parameatal area is a rare and unusual disease first described by Thompson and Latin in 1956 [1]. Since then, about 50 cases have been published [2,3]. Most reported cases were from the Japanese population, and an extensive literature search found that a few cases were reported from India.

These cysts mainly occur on one side of the urethral meatus. These benign lesions usually occur in boys, although they can be seen in infants and adults. The aetiology and pathogenesis of these cysts have yet to be established. In most cases, they are asymptomatic, but they can cause a change in the urine stream or interfere with intercourse. Simple excision is the preferred treatment option, while aspiration or marsupialization leads to relapses. In this report we want describe our first experience of parameatal cysts in our practice. Based on our case-based review, we try describe the best surgical treatment of parameatal cysts.

Case presentation

A 25-year-old man had a cystic formation that appeared in the area of glans penis and gradually increased over five years. There were no urinary symptoms other than spraying of the urinary stream and poor cosmesis. The formation did not bother the patient except for cosmetic concerns. On examination, a painless cyst 0.7 cm x 0.5 cm in diameter was

found anterior to the urethral meatus (Figure 1). The cyst was soft on palpation. Examination of other areas of the penis, scrotum, and perineum was unremarkable. Palpable inguinal lymphadenopathy was not observed. The patient's urinalysis and blood test results were normal. An ultrasound examination revealed an isoechoic cystic lesion anterior to the urethral orifice (Figure 1.1). There was no evidence of a solid component, septation, or vascularization within the cyst.

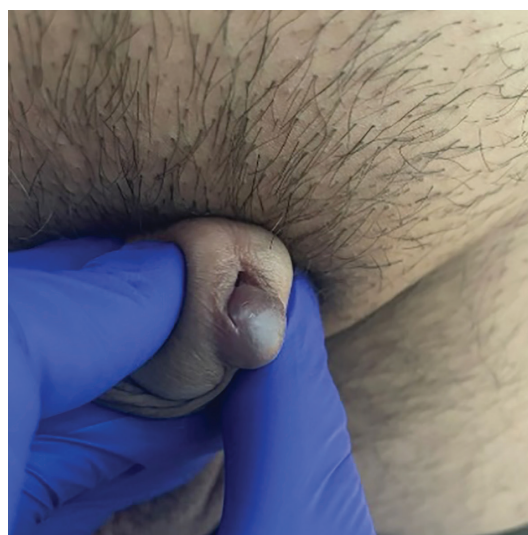


Figure 1 - Parameatal cyst appearance.

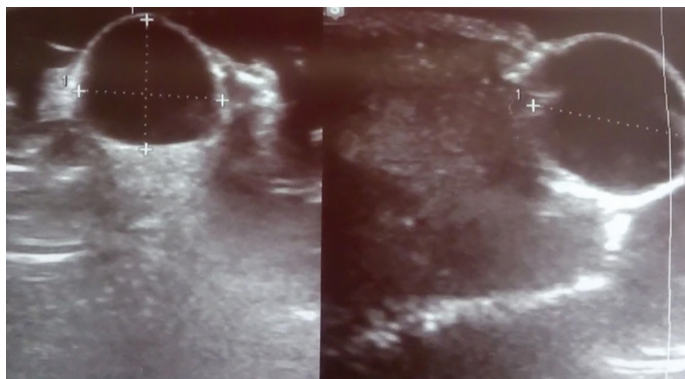


Figure 1.1 - Ultrasound of parameatal cyst. An anechoic cystic lesion anterior to the urethral orifice

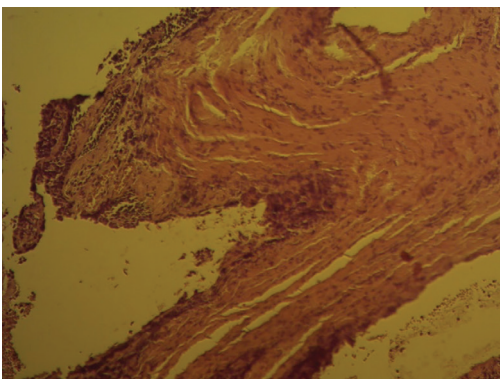


Figure 4 - a) Microscopic image (hematoxylin and eosin, 100X magnification) showing the squamous cell epithelium lining the cyst wall.



Figure 2 - The post-operative appearance of parameatal cyst. Placement of the urinary catheter.



Figure 3 - Parameatal cyst appearance of the cyst in 7 days post-surgery.

Total resection of the cystic formation was performed under local anaesthesia. The edges of the incision were sutured with 3-0 catgut. A urinary catheter has been placed (Figure 2). The patient was discharged 3 hours after the surgery. We prescribed him a daily treatment of the wound with chlorhexidine. Within seven days, the wound healed and with satisfactory cosmetic appearance (Figure 3). In the further visit, the sutures and the urinary catheter were removed. The histology showed that the cyst was formed by squamous and columnar epithelium (Figure 4). After three months of follow-up, the patient did not have a relapse. A follow-up appointment was scheduled six months later.

| Table 1 | Clinical characteristics of the median cyst of the penis in three large reviews | | |
|-------------------|---|------------------------------|------------------------------------|
| | Shao <i>et al.</i> [14] | Matsuyama <i>et al.</i> [15] | Navalon-Monllor <i>et al.</i> [16] |
| Number of cases | 55a | 23 | 28 |
| Cyst size range | 0,2–2,1 cm | from 0,1 to> 1 cm | 0,5–3,5 cm |
| Mean cyst size | 0,88 cm | n/a | 1.1 cm |
| Location | | | |
| Parameatal | 19 (33.9) | b | 8 (28) |
| Glans of penis | 4 (7.1) | – | – |
| Penile shaft | 24 (42.9) | 11 (47.8) | 10 (36) |
| Scrotum/perineum | 2 (3.6) | 2 (8.7) | 2 (7) |
| Prepuce | 7 (12.7) | – | 3 (11) |
| Multiple areas | | 4 (17.4) | 2 (7) |
| Corona / frenulum | | 6 (26.1) | 3 (11) |
| Symptoms | | | |
| Asymptomatic | 40 (72.7) | 19 (82.6) | 22 (79) |
| Symptomatic | 15 (27.3) | 4 (17.3) | 4 (21) |

Discussion

A parameatal cyst is a rare lesion in men, and, as reported in the literature, only about 50 cases have been reported to date [2,4]. Parameatal cysts of the glans penis have been described under various diagnostic terms such as mucoid cyst, urethral cyst, and apocrine cystadenoma. The pathology is more common in boys than in girls. Cysts can be congenital and form at any age [3]. The pathogenesis still needs to be studied. The aetiology of a paraurethral cyst is unknown, but it may occur due to obstruction of the paraurethral ducts secondary to infection in adults [4]. It is believed that their formation occurs due to inflammation, but this does not explain the aetiology of congenital parameatal cysts [5]. Other causes are occlusions of the paraurethral ducts and additional male gonads in the urethra [6]. The development of parameatal cysts was explained by preserving cystic spaces in the line separating the foreskin from the glans [1]. Some scientists have suggested that paraurethral duct obstruction was the cause, while others have suggested that infection may be a possible cause of the obstruction [7-9]. Recently, two neonatal cases have been reported in which paraurethral cysts have been associated with vaginal bleeding and breast enlargement; these factors have shown the possibility of the role of estrogens in their development [10]. The origin of parameatal urethral cysts from accessory male gonads in the urethra has been demonstrated by immunohistochemistry with PSA in the cells of these cysts [11].

It is usually a tiny cystic mass located on the lateral margin of the external urethral meatus, averaging about 1 cm in diameter [12]. They can sometimes be bilateral. Most paraurethral cysts are asymptomatic, but sometimes patients may experience painful intercourse, dysuria, difficulty with urination, or even acute urinary retention [6,13]. A physical examination alone is usually enough to make a diagnosis. The cyst may be traumatized by bleeding or infection, and spontaneous rupture may occur. The lining of the cyst wall varies depending on the origin of the affected urethral segment, and it can be columnar, cuboidal, squamous, or transitional epithelium [9,12]. The lining epithelium plays no role in treatment and relapse. The differential diagnosis includes inflammatory lesions of the urethra [12]. The treatment of choice is total cyst excision. Other options include aspiration or marsupialization, which have unsatisfactory cosmetic results and lead to frequent relapses [3]. We suppose the best surgical treatment choice is total cyst excision compare to aspiration or marsupialization in terms of relapse and cosmetic appearance.

Conclusion

A parameatal cyst is a rare pathology that occurs in men. Although these cysts are primarily asymptomatic, patients may present because of poor cosmetic appearance or urination problems. The treatment of choice is total cyst excision, while

other methods, such as aspiration or marsupialization, can lead to recurrence and poor cosmetic appearance.

Summary

Parameatal cysts are very rare in clinical practice due to their asymptomatic course. This article presents one such case, a 25-year-old male patient with a spherical cystic tumour 0.7 cm in size in the area of the external opening of the urethra. According to the histology results, the cyst is formed by a flat and cylindrical epithelium. All histological findings in parameatal cases are benign. Total resection of the cystic formation was performed, and the resulting imperfections were sutured. After three months of follow-up, good results were established without recurrence and a cosmetic appearance.

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