Penile Cyst in a 9-Month-Old

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A 9-month-old infant, who was born full term, presented with his parents to our primary care clinic for a well-child visit. He had a history of mild developmental delay in the social and communication domains, which was being monitored without therapy. He was otherwise healthy.

Physical examination

The patient was well-appearing, and his growth was normal for his age. Results of the physical examination were within normal limits. A genitourinary examination revealed that the patient was circumcised, and the testicles were descended bilaterally. A nontender, pearly white cystic lesion was noted at the ventral aspect of the urethral meatus with no surrounding erythema **(Figure 1)**. The patient was voiding appropriately, according to his mother. A review of systems was negative for fever, irritability, foul-smelling urine, and hematuria, and the patient's parents reported no abnormalities of the urinary stream.

Further history revealed the lesion had been present since birth and had not changed over time. The patient's mother raised concern for the lesion during an emergency department visit for an unrelated problem when the patient was aged 2 months **(Figure 2)**. At that time, the emergency department physician diagnosed the lesion as an epidermal inclusion cyst. No urinalysis or other laboratory workup was obtained at either visit.

After a brief literature review with visual aids, a parameatal urethral cyst was diagnosed. A pediatric urologist was consulted and confirmed the diagnosis.

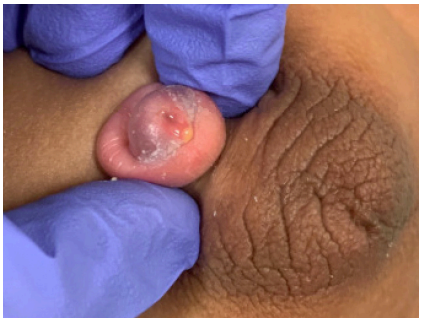

Figure 1. A parameatal urethral cyst was visualized during the patient's 9-month well-child visit.

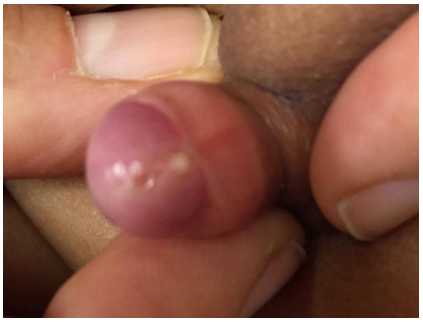

Figure 2. The parameatal urethral cyst was visualized at a previous emergency department visit 7 months prior to presentation.

Discussion

Parameatal urethral cysts are dome-shaped lesions, generally less than 1 cm in diameter, filled with clear, white, or yellow fluid that originates at the urethra, most commonly at the ventral or lateral margin.[1,2] The differential diagnosis includes smegma pearls, epidermal cysts, fibroepithelial polyps, and juvenile xanthogranulomas.[2] However, careful examination of the lesion, penis, and other skin should confirm the diagnosis.

Smegma pearls are usually located near the base of the glans (corona) at sites of preputial skin adhesion as the skin debris gets trapped between preputial skin layers.[3] Epidermal cysts may be similar in appearance but occur at sites of implantation and proliferation of epidermal elements in the dermis and do not involve the urethra.[4] Fibroepithelial polyps are outgrowths of mesodermal origin and are not cystic in nature.[5] Juvenile xanthogranulomas may be visually similar but are often multiple in number and most common on the head and neck.[6]

Parameatal urethral cysts are rare. The prevalence is unknown, with published literature limited to case reports and case

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series, which represent approximately 100 total cases of parameatal urethral cysts. Although Ian Thompson and Pedro Lantin are commonly cited as having first described the condition in 1956, it was actually first described by a Japanese physician in 1919.[7,8] The condition is likely more common in Asian populations, as the majority of case reports originate from Asian countries; however, there are multiple case reports originating from North America. The largest study is a case series of 18 patients where 78% of patients were White, 6% were Hispanic, and 17% were of unknown ethnicity.[7] Although some reports describe the condition as congenital, it may be present at birth or develop later in childhood.[7,8]

The true etiology of the parameatal urethral cyst has not been definitively established. Previous theories include the persistence of cystic space after preputial delamination, abnormal fusion of the urethra from the urogenital sinus, and obstruction of the paraurethral ducts.[7] Heather Willis and colleagues concluded that obstruction of a paraurethral duct is the most likely etiology, considering that the cysts are usually ventral or lateral to the meatus and that varying ages of presentation support that the condition is less likely to be embryologic.[7]

Epithelial lining on histologic examination varies among individuals, and an inflammatory infiltrate is usually not present.[7,8] Variable age of diagnosis may partly be attributable to delayed diagnosis in uncircumcised boys as well as the asymptomatic nature of the condition.[8] Two retrospective cohort studies account for more than half of the published cases.[7,8] While the majority of patients were asymptomatic (66%-81%), deflection of the urinary stream and pain had occurred in a minority of patients.[7,8] Cysts larger than 5 mm in diameter were more likely to be symptomatic than smaller cysts.[8] Cysts usually do not grow over time, but growth is possible and can worsen symptoms.[8,9]

Parameatal cysts are generally isolated lesions, but they have been reported in association with hypospadias in at least one case report.[10] Conservative management with observation is reasonable, as up to 25% of parameatal urethral cysts self-resolve.[7,8,11] Indications for surgical intervention include patient and family preference, as well as symptomatic cysts. The treatment of choice is complete surgical excision, as cyst recurrence has occurred with aspiration and unroofing of cysts.[7,8]

Patient outcome

With guidance from a pediatric urologist, the decision was made to defer excision to a later date when the patient would better tolerate general anesthesia and surgery. He has experienced no symptoms or complications while awaiting surgery.

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