Periurethral Gland Calculus Discovered on Workup for Dyspareunia

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Key Words
Calculus • Dyspareunia • Dysuria • Periurethral • Stone

Abstract
A 55-year-old woman with a history of chronic dysuria in the absence of infection was found to have an unusual lesion below the urethral meatus. This was subsequently determined to be a periurethral gland containing a sizeable calculus. Pathologic analysis found the composition to be carbonate apatite (dahllite). Only one prior report of a female periurethral calculus has been noted in the English peer-reviewed literature.

Case Report
A 58-year-old postmenopausal female was referred to urology by her primary physician for a urethral lesion on vaginal exam. She had been followed previously for several years for dysuria, and treated for presumed urinary tract infections on numerous occasions, but all prior cultures were negative. She reported extreme vaginal dryness with dyspareunia and postcoital bleeding. She denied post-void dribbling, gross hematuria, prior stones, urinary frequency or nocturia. Automated urinalysis was negative and microscopy did not detect any red blood cells. Blood chemistry, including complete blood count and complete metabolic panel, was within normal limits. The remainder of her history was unremarkable.

Vaginal exam revealed mucosal atrophy and a lesion adjacent to the urethral meatus at the 6 o’clock position. On closer inspection, there was a pinpoint area of yellow/white discoloration in the center of this area. It was slightly firm to palpation and no purulence could be expressed. Gentle probing with a cotton-tipped applicator found this to be a surprisingly large calculus that was extricated without the need for incision. The cavity was inspected and noted to be completely separate from the urethra and the lining was not suspicious in appearance.

After a full discussion, inclusive of the potential benefit of vaginal estrogen and optimal lubricants for sexual activity, she returned home. The stone was sent for analysis and found to be en-

Introduction
Symptoms of dysuria and dyspareunia are common among postmenopausal women. Approximately 50% report atrophy-related symptoms, with negative effect upon quality of life [1]. Reduced 17β-estradiol leads to a loss of elasticity in vulvovaginal tissue and could theoretically result in stenosis of periurethral gland ostia from mucosal retraction [2]. Increased vaginal pH, decreased colonization of lactobacillus, and increased E. Coli colonization increase risk of infection [3]. Infection of periurethral glands is felt to be the first step towards development of acquired urethral diverticuli, which may occasionally contain stones [4]. In the case that follows, symptoms that would not seem uncommon for a postmenopausal woman were found to be secondary to a very uncommon entity. Signed patient consent was obtained for publication of these details.
tirely composed of carbonate apatite (Dahllite). It weighed 0.131 grams and measured 8 × 6 mm in greatest dimension (fig. 1). The patient returned 6 weeks later and noted that her dysuria and dyspareunia had completely resolved.

Discussion

An exhaustive PubMed search of the English language peer-reviewed literature could only find one prior report of a stone identified within a periurethral gland [5]. Interestingly, the stone in the manuscript by Ergin and Köseoglu was composed of calcium oxalate, a common urinary stone, and suggests the possibility of a ruptured urethral diverticulum. The stone in our patient was comprised of carbonate apatite, which would be uncommon for a urinary stone. This composition is noted commonly in stones found within salivary and glands [6]. Stones formed within urethral diverticuli are usually composed of magnesium ammonium phosphate; migratory stones (those formed in bladder or kidney and making their way into a diverticulum) are often calcium phosphate or calcium carbonate [7].

Our patient lacked features of the pathognomonic presentation of female urethral diverticulum, such as postvoid dribbling and expression of discharge per meatus. Additionally, inspection noted no communication with the urethra. One could argue that is conceivable that the space may have communicated with the urethra at one time until it ruptured at the level of the vaginal mucosa. However, based on the natural history of urethral diverticuli and the stone composition, this seems unlikely.

This may be a condition where incidence is directly proportional to the avidity with which it is sought. Similar symptoms of dysuria and dyspareunia are seen in women with urethral diverticuli, which are mostly acquired and felt to develop after an infected periurethral gland ruptures into the urethral lumen [4]. The estimated prevalence of urethral diverticula in adult women is between 0.6% and 6%, with 1.5% to 10% having associated stone formation, presumed secondary to urinary stasis and chronic inflammation [8]. However, given that the symptoms are nonspecific and the symptomatic interval prior to diagnosis, if one is ever assigned, averages 5.2 years, it is logically to assume that the condition is more common than realized [4]. It is thus reasonable to infer that thorough investigation is entertained earlier, pathology within periurethral glands could be identified to a greater degree, and allow for earlier symptom improvement, and perhaps a lessened incidence of subsequent diverticuli formation. The immediate resolution of symptoms following stone removal in this case strongly supports their association. Periurethral examination in patients with these symptoms seems warranted.

Fig. 1. Extracted periurethral stone.

References

1 Rahn DD, Carberry C, Sanses TV, Mamik MM, Ward RM, Meriwether KV, Olivera CK, Abed H, Balk EM, Murphy M: Vaginal estrogen for genitourinary syndrome of menopause: a systematic review. Obstet Gynecol 2014;124:1147–1156.
2 Sturdee DW, Panay N: Recommendations for the management of postmenopausal vaginal atrophy. Climacteric 2010;13:509–522.
3 Kurowski K: The woman with dysuria. Am Fam Physician 1998;57:2155–2164, 2169–2170.
4 Romanzi LJ, Groutz A, Blaivas JG: Urethral diverticulum in women: diverse presentations resulting in diagnostic delay and mismanagement. J Urol 2000;164:428–433.
5 Ergin RN, Köseoglu H: Lithiazis in the periurethral gland of a woman. Clin Exp Obstet Gynecol 2012;39:245–246.

6 Luers JC, Petry-Schmelzer JRN, Hein WG, Gostian AO, Huttenbrink KB, Beutner D: Fragmentation of salivary stones with a 980nm diode laser. Auris Nasus Larynx 2014;41:76–80.
7 Shim JS, Oh MM, Kang JI, Ahn ST, Moon du G, Lee JG: Calculi in a female urethral diverticulum. Int Neurourol J 2011;15:55–57.
8 Skyggebjerg KD: Female urethral diverticulum with calculus. Acta Obstet Gynecol Scand 1986; 65:797–798.