3-D Ultrasonographic Appearance of Two Intermittent Paraurethral Cysts: A Case Report

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ABSTRACT

Introduction. In the adult female, a cyst of the Skene's duct is a rare event that may be either the late consequence of a congenital abnormality or the result of a chronic acquired inflammation.
Aim. To report a case of bilateral paraurethral Skene's duct cysts.
Methods. A young (32 years old), eumenorrheic (menstrual cycle of >25 and <35 days) woman complained of a 6-month intermittent scarce lubrication during intercourse and a sensation of a small intravaginal "extraneous" body. The patient was repeatedly assessed with a detailed history, with a bimanual pelvic examination and with bi- and tridimensional ultrasonographic and color Doppler analyses of the urethrovaginal space.
Main Outcomes Measures. Transvaginal two-dimensional ultrasonographic evaluation of internal genitalia, bladder, and urethra and three-dimensional analysis of the paraurethral structures.
Results. The evaluation of the structures comprised in the urethrovaginal space evidenced two small (1.7 and 1.1 cm in the maximum diameter) anechoic cysts with some debris in the most declivous part, laterally displaced to the middle/distal urethra. The cysts disappeared after a medical therapy.
Conclusions. A sudden reduction of the vaginal lubrication requires a prompt gynecological and ultrasonographic evaluation of the urethrovaginal space. **Battaglia C, and Venturoli S. 3-D ultrasonographic appearance of two intermittent paraurethral cysts: A case report. J Sex Med 2010;7:2903–2906.**

Key Words. Skene's Gland Cyst; Female Prostate; Urethrovaginal Space; Vaginal Lubrication; Ultrasonography; G-spot Anatomy

Introduction

Skene's glands and ducts are derived from the urogenital sinus, are aligned with the urethra, and are considered the female homologous of the male prostate. In the past, the female prostate has been viewed as an afunctional vestigial gland [1], and Wernert et al. [2] affirmed that it remains immature throughout life from the fetal life to the advanced age. On the contrary, Zaviacic et al. [3] demonstrated that the prostate can be considered as another organ in the male and the female exhibiting different size, weight, and function, yet the same qualitative parameters in both genders. Its role is still unclear. However, it has been supposed that the Skene's glands may intervene in the urethral and vaginal lubrication during intercourse with the paraurethral glands being capable of releasing about 30–50 mL of a clear watery fluid during sexual stimulation [4].

In the adult female, a cyst of the Skene's duct is a rare (between one in 2,074 and one in 7,246) [5,6] manifestation that may be either the late consequence of a congenital abnormality or the result of a chronic acquired inflammation [7]. The paraurethral cysts may be totally asymptomatic and accidentally discovered during routine pelvic examination or may present symptoms such as palpable or visible mass, pain, dyspareunia, dysuria, a distorting voiding stream, and a vaginal discharge [8].

In this article, we describe the three-dimensional (3-D) ultrasonographic findings in a case of intermittent bilateral Skene's ducts cyst.

Case Report

In January 2009, a 32-year-old Italian eumenorrheic (menstrual cycle >25 and <35 days) para 1 woman, with a normal body mass index (BMI) (weight in kg/height in m^2; BMI = 20.1) and with a stable heterosexual relationship, referred to our clinic complaining of 6 months intermittent scarce lubrication during intercourse and a concomitant sensation of a small intravaginal "extraneous" body. The woman did not report any other symptom (i.e., pain, dyspareunia, dysuria, a distorting voiding stream, or a vaginal discharge). There was no history of gynecological (e.g., uterine myomas, endometriosis, ovarian cysts, pelvic varicosities) or endocrine disorders. Furthermore, she had neither urologic and/or proctologic diseases nor a history of perineal surgery. On bimanual pelvic examination, there were two paraurethral small nontender, not painful, movable submucosal masses located within the anterior wall of the vagina. No urethral discharge was noted when pressure was applied to the masses. Immediately after the gynecological exam, the patient was submitted to transvaginal two-dimensional (2-D) ultrasonographic evaluation of internal genitalia, bladder, and urethra, and to 3-D analysis of the paraurethral structures. The ultrasonographic evaluation of the pelvic organs and the endometrial thickness was performed by using a multifrequency vaginal transducer (Voluson 730 Expert Sonography System, GE Healthcare Ultrasound, Medex, Padua, Italy). To better analyze the bladder contour and the urethra, the bladder was not completely voided (~50 mL). The paraurethral structures were scanned with a high-resolution ultrasound transducer (RSP-16 multi-frequency 4D linear array transducer; Voluson 730 Expert) and the color and power Doppler mode were used. To avoid any anatomical distortion, the ultrasonographic approach was translabial and care was taken to avoid excessive pressure on the vulva. The images were stored and analyzed off-line. During the analysis and calculation, the manual mode of the VOCAL Contour Editor was used to cover the whole 3-D volume of paraurethral cysts with a 30° rotation step. Hence, six contour planes were analyzed for the cysts in order to cover 180°. Color flow images of the main vessel feeding the cysts were sampled and the pulsatility index (PI), defined as the difference between the peak systolic and end-diastolic flow divided by the mean maximum flow velocity, was electronically calculated by the machine.

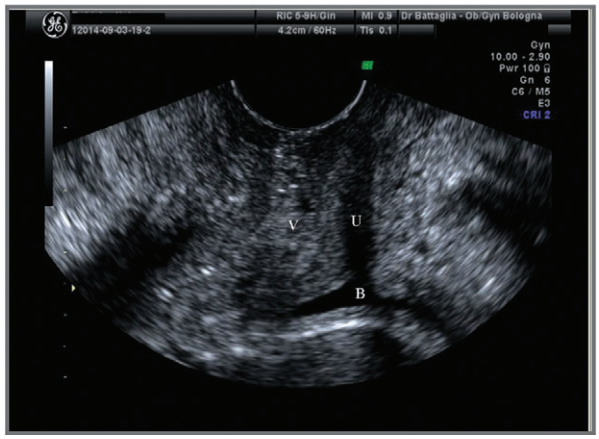

Figure 1 Transvaginal ultrasonography: sagittal view of the normal urethra and bladder neck. B = Bladder; U = Urethra; V = Vagina.

The 2-D transvaginal evaluation demonstrated that uterus, endometrium, ovaries, and bladder were normal. The urethra was demonstrated as a narrow ipo/anechoic funnel-like structure tapering from the bladder to the perineum (Figure 1). The cysts did not compress the urethrovesical junction. The evaluation of the structures comprised in the urethrovaginal space evidenced two small (1.7 and 1.1 cm in the maximum diameter) anechoic cysts with some debris in the most declivous part, laterally displaced to the middle/distal urethra. It was not possible to demonstrate the lesions and the urethra on a single image. The 3-D reconstruction showed two small spherical cysts that did not displace the urethra. The volume of the cysts measured, respectively, 2.4 mL (Figure 2) and 1.3 mL. The power Doppler did not show hypervascularization of the cysts (Figure 3). The PIs of the main vessels feeding the cysts were, respectively, 1.71 and 1.68. The thin cystic wall, the absence of solid components and intracystic vegetations and the absence of neovascularization led to a diagnosis of cysts of benign nature. The urinalysis did not reveal leukocytosis or bacteruria. The vaginal swab was negative for common organisms (i.e., *Escherichia coli*, *Gonococcus*, and *Chlamydia*, *Trichomonas vaginalis*, mycetes). We decided to manage the patient conservatively and we did not carry out any surgical intervention or needle aspiration. However, antimicrobials (ciprofloxacine) and proteolytic enzymes (promelasi) were prescribed for 7 days.

After about 1 month after the end of the therapy, the patient reported an intense spurt of fluid during an intercourse and the sudden disap-