

Three-dimensional Ultrasound Imaging in a Case of Periurethral Abnormality

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BRIEF HISTORY

A 42-year-old woman, para 2, had been suffering from a painful anterior vaginal mass for 6 months. She also complained of dyspareunia, urinary dribbling and frequent lower urinary tract infections.

CLINICAL EXAMINATION

On pelvic examination, there was a marked tenderness and a mass, approximately 2 cm in size, in the anterior vaginal wall at the mid urethra level. Turbid, yellow urethral discharge was noted when pressure was applied to the mass.

ULTRASONOGRAPHY

Three-dimensional (3D) transvaginal sonography revealed a 3.2 × 2.7 cm cystic mass located at the mid urethra level. On the mid-sagittal view, the mass was divided into anterior and posterior

compartments, separated by the urethra (Fig. 1). Sequential 3D axial views revealed that the posterior and left sides of the urethra were surrounded by the cystic mass, which consisted of four loculi (Fig. 2).

DIAGNOSIS AND MANAGEMENT

The reported incidence of urethral diverticula varies from 0.6% to 6%. Classically, physical examination reveals a tender, anterior, vaginal mass from which purulent urethral discharge is produced by palpation. If this typical finding is not evident, diagnosis of a urethral diverticulum may require cystourethroscopy and imaging studies. Historically, voiding cystourethrography and positive-pressure urethrography have been the most commonly used investigative procedures. However, these imaging modalities are only adequate when the neck of the diverticulum is sufficiently patent to enable filling of the diverticulum with contrast material. In addition, positive-pressure urethrography is difficult to perform and may be quite painful for patients [1]. Recent developments in pelvic imaging with sonography and magnetic resonance imaging (MRI) have greatly advanced diag-

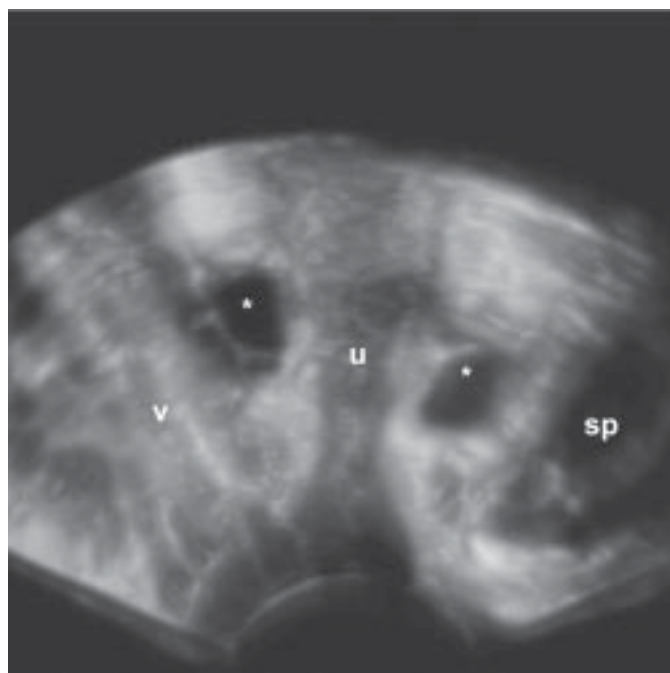


Fig. 1. Three dimensional mid-sagittal scan displaying a urethral diverticulum (*) located at the mid-urethra level, with anterior and posterior compartments, separated by the urethra (u). The diverticulum interposes between the pubic symphysis (sp) and the vagina (v).

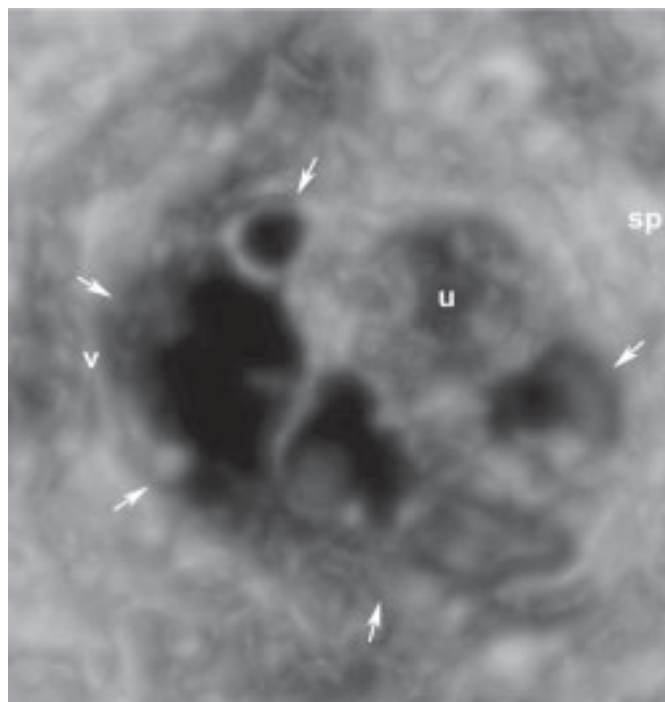


Fig. 2. Three dimensional axial scan demonstrating a 4-loculi diverticulum (arrows) surrounding the posterior and left sides of the urethra, with an extension to the pubic symphysis (sp).

nostic accuracy, and help to stage lesions as to location, size and coexistent pathology.

The sonographic appearance of urethral diverticula is characteristic but not pathognomonic [1]. The differential diagnosis includes less commonly Gartner's duct cysts, vaginal inclusion cysts, ectopic ureterocele, endometrioma and a Skene's gland abscess. Visualizing a neck connecting the diverticulum to the urethral orifice is necessary to make the diagnosis with confidence and to assure complete resection. However, the ostium of the diverticulum may not be seen on sonography, such that Gartner's duct cysts and vaginal inclusion cysts cannot be differentiated from urethral diverticula. It has been suggested that the location of the lesion itself effectively differentiates paraurethral cystic lesions from diverticula because a diverticulum would occur adjacent to or in the urethral wall and other lesions would not.

In a series of 41 patients with urethral diverticulum, 22% (9/41) had anterior or circumferential involvement of the urethra [2]. Different approaches have been suggested for accessing an anterior, horse-shoe-shaped or circumferential urethral diverticulum or its dorsal wall,

including a suprameatal incision, wide lateral incision or a transvaginal incision with complete division of the urethra [2]. A higher complication rate may be encountered in the management of complex urethral diverticulum.

In this case, transvaginal sonography with 3D scanning provided information on the internal architecture and spatial relationships of the diverticulum. Such information may be important for preoperative counseling because of the high complication rate of complex urethral diverticulum. After a thorough discussion of the management options, the patient chose medical management rather than surgery.

REFERENCES

1. Yang JM, Huang WC, Yang SH: Transvaginal sonography in the diagnosis, management and follow-up of complex paraurethral abnormalities. *Ultrasound Obstet Gynecol* 2005; **25**:302-306.
2. Rovner ES, Wein AJ: Diagnosis and reconstruction of the dorsal or circumferential urethral diverticulum. *J Urol* 2003; **170**:82-86.



台灣尿失禁防治協會

「婦女泌尿及尿路動力學專家」證書授予辦法

- 一、台灣尿失禁防治協會（以下簡稱本會）為培育國內婦女泌尿學及尿路動力學專門醫師，使其具備專門知識及技能以照護國人之泌尿系統疾患，特制訂本辦法並發給專家證書以資證明。
- 二、向本會申請「婦女泌尿及尿路動力學」專家證書者必須具備以下之條件：
 - (一)具中華民國醫師資格。
 - (二)曾從事婦女泌尿學及尿路動力學相關之工作一年以上。
 - (三)曾於二年內參加本會舉辦之「婦女泌尿及尿路動力學」研習班第一階段及第二階段之所有課程，經筆試合格者。
 - (四)曾於三年內在國內外醫學雜誌發表「婦女泌尿及尿路動力學」相關之研究論文乙篇或病例報告貳篇以上。
 - (五)通過本會舉辦之「婦女泌尿及尿路動力學」認證口試。
- 三、凡具有本會授予之「婦女泌尿學及尿路動力學」證書者，有效期限為六年，六年屆滿必需完成本會所舉辦之繼續教育積分六十分或於六年內發表論文乙篇或病例報告貳篇於國內外醫學雜誌，申請者為該論文第一或通訊作者，始可辦理展延一次六年。
- 四、繼續教育積分認定標準：出席本會年會十分、擔任本會所舉辦研討會座長或講師十分、出席本會舉辦之研討會積分依時數計算。
- 五、本辦法經本會理監事會通過後施行，修改時亦同。