啓明醫大論文集 第18卷 第2號
Keimyung Med J
Vol. 18, No. 2, June, 1999

# Leiomyoma of the Female Urethra

**Joo Yong Shin, M.D. and Cheol Ho Sohn, M.D.**

*Department of Diagnostic Radiology,*
*Keimyung University School of Medicine and Institute for Medical Science,*
*Taegu, Korea*

= Abstract =

Leiomyoma of the female urethra is a rare condition. We report one case of leiomyoma of the female urethra causing frequency, nocturia and dysuria. The differential diagnosis is caruncle, carcinoma, epithelial polyps or urethral prolapse. Transperineal ultrasonography reveals a 1.43 x 1.29 mm, well defined, round heterogeneous hypoechoic mass in the distal urethra. Color Doppler ultrasonography shows multifocal color signals in the peripheral and central portion of the mass. Histopathological examination confirmed urethral leiomyoma.

**Key Words: Leiomyoma, Urethra, Ultrasonography**

## Introduction

Leiomyomas of the lower urinary tract are relatively uncommon condition with approximately 40 cases reported in the literatures (Leidinger & Das, 1995), since they represent a small percentage of benign nonepithelial tumors of the urethra (Marshall *et al*, 1960). We report ultrasonographic findings of one case of leiomyoma arised from the female urethra, and include a review of the literature on this condition.

## Case Report

A 53-year-old female presented with a 6-month history of lower abdominal discomfort, frequency (one time per hour), nocturia (tow to five times per overnight) and dysuria. Renal function test showed no abnormality. Urinalysis was normal except several white blood cells on microscopic examination.

Transperineal ultrasonography revealed a 1.43 x 1.29 mm, well defined, round hypoechoic heterogeneous mass in the distal urethra (Figure 1). Color Doppler ultrasonography showed multifocal color signals in both peripheral and central portion of the mass (Figure 2).

Transurethral excision of the mass was done. A 1.5 cm sized reddish color, mass with intact overlying urothelium was noted at anterior distal urethra. Tumor excision was preformed. The gross specimen consisted of a 1.5 x 1.3 x 1.0 cm sized ovoid firm, and pale tan mass. The histological diagnosis was benign leiomyoma.

## Discussion

Leiomyoma may be found at any site in the genitourinary tract, the kidney capsule being the most frequent area involved (Zuckerman *et al*, 1947). Scattered reports of leiomyomas have been described in the bladder, prostate, penis, scrotum, spermatic cord, epididymis and seminal vesicles. In 1894 Bttner first described leimyoma of the urethra and approximately 40 cases have been reported in the literature (Leidinger & Das, 1995). Although any segment of the urethra can be affected, the proximal segment is the most common site. Leiomyoma affects more often in female than in male.

Urethral leiomyoma produces symptoms at a rate primarily related to its location and secondarily to its size, and common presenting symptoms include urinary tract infection (64.3%), a mass (50%) and dyspareunia (28.5%) (Mooppan *et al*, 1979). However urinary obstruction is uncommon because of its paraurethral location (Leidinger & Das, 1995l; Lee *et al*, 1995). Acute renal failure is rare (Leung *et al*, 1997). Our patient presented with lower abdominal discomfort, frequency, nocturia and dysuria. The majority of the urethral tumor is epithelial in origin, but leiomyoma is classified under the category of mesenchymal tumor. Pathologically, leiomyoma of the urethra is identical to uterine leiomyoma with fascicles of proliferated smooth muscle fibers separated by connective tissue. Rarely, epitheloid cells may predominate in the tumors. The degree of vascularity is varied, and our case shows

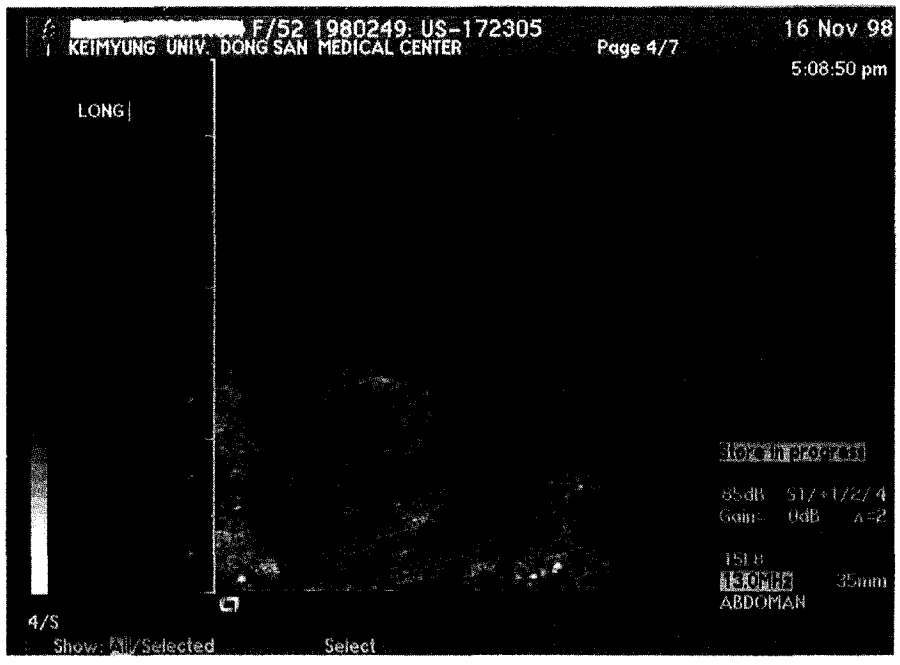


Figure 1. Transperineal ultrasonography reveals a well defined, round heterogeneous hypoechoic mass in the distal urethra.

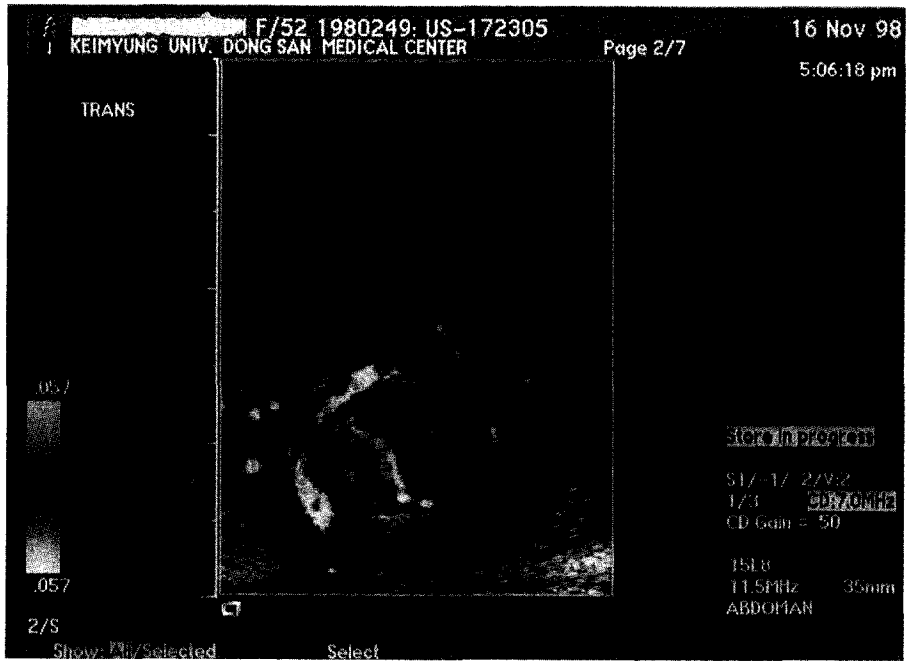


Figure 2. Color Doppler ultrasonography shows multifocal Doppler signals in both peripheral and central portion of the mass

increased vascularity on the color Doppler image.

The pathogenesis of leiomyoma is unknown but some authors suggest that the growth of leiomyoma may be influenced by estrogen (Shield & Weiss *et al*, 1973). However, no such endocrine dependence has been established for urethral leiomyoma. Our 53-year-old patient was postmenopausal woman and she did not had history of estrogen medication.

To our knowledge, no report of malignant transformation of a urethral leiomyoma exists and only 1 case of recurrence has been documented (Lake *et al*, 1981). Local excision or transurethral excision is the recommended treatment for urethral leiomyoma.

Urethral leiomyomas must be differentiated from caruncle, carcinoma, epithelial polyps or urethral prolapse. Sonography can be an useful method in excluding some of these condition and significantly helpful in the localization of the leiomyoma. The typical ultrasonographic manifestations of urethral leiomyoma were seen in our case. There were relatively well defined, hypoechoic mass and increased vascularity on color Doppler image. Magnetic resonance imaging (MRI) of the leiomyoma usually shows medium-signal intensity on T1-weighted image and homogeneous low-signal intensity on T2-weighted image (Siegelman *et al*, 1997). High-resolution MRI differentiates processes that might be confused at physical examination, and contributes to surgical planning.

## References

Lake MH, Kossow AS, Bokinsky G: Leiomyoma of the bladder and urethra. *J Urol* 1981;125:742-743.

Lee M-C, Lee S-D, Kuo H-T, Huang TW: Obstructive leiomyoma of the female urethra: report of a case. *J Urol* 1995;153:420-421.

Leidinger RJ, Das S: Leiomyoma of the female urethra. A case report of the two cases. *J Reprod Med* 1995;40(3):229-231.

Leung YL, Lee F, Tam PC: Leiomyoma of female urethra causing acute urinary retention and acute renal failure. *J Urol* 1997;158:1911-1912.

Marshall FC. Uson AC. Melicow MM: Neoplasm and caruncles of the female urethra. *Surg Gynecol Obstet* 1960;110:723-733.

Mooppan MMU, Kin H, Wax SH: Leiomyoma of the female urethra. *J Urol* 1979;121:371-372.

Shield DE, Weiss RM. Leiomyoma of the female urethra. *J Urol* 1973;109:430-431.

Siegelman ES, Banner MP, Ramchandani P, Schnall MD: Multicoil MR imaging of symptomatic female urethral and periurethral disease. *Radiographics* 1997;17(2):349-365.

Zuckerman IC, Kershner D, Layntner BD, Hirschl D. Leiomyoma of the kidney. *Ann Surg* 1947;126:220-228.