

Urethral Leiomyoma in Females: Report of 3 Cases

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ABSTRACT

Urethral leiomyomas are rare benign tumors arising from the smooth muscle of the urethra. We describe 3 female patients aged 40, 38, and 35 years, respectively. Each presented with a mass protruding from the urethral meatus. Other characteristics included urethral bleeding, dysuria, and dyspareunia. There were no reports of obstructive voiding. We explain the procedures needed for differential diagnosis. All patients underwent transvaginal excision of the mass and were free of recurrence at the 2- or 3-year follow-up. Related literature is reviewed.

KEYWORDS: Female urethra; Leiomyoma; Urethral tumor; Spindle cell neoplasm

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Abbreviations and Acronyms

CT, computed tomography

MRI, magnetic resonance image

INTRODUCTION

Leiomyoma of the urethra is a rare tumor of mesenchymal origin. Most of the reported cases occur in women. The etiology is unknown; the pathogenesis may be associated with ovarian hormones. Most patients present with a mass protruding from the urethra but rarely present with obstructive voiding. We report urethral leiomyoma in 3 female patients.

CASE 1. A 40-year-old female presented with urethral bleeding of 1-month duration. She had no dysuria or obstructive voiding symptoms. She had undergone an abdominal hysterectomy 2 years previously for dysfunctional uterine bleeding. Physical examination revealed a mass protruding from the urethral meatus (Figure 1). The hemogram, serum biochemistry, and urinalysis were normal. Computed tomography (CT) scan of the pelvis showed a large enhancing homogenous mass in the urethra that protruded into the bladder (Figure 2). Cystourethroscopy revealed a mass bulging into the anterior wall of the urethra and congestion of the overlying urethral mucosa. Complete excision of the tumor was done transvaginally. Histopathological examination showed spindle cells having eosinophilic cytoplasm and elongated nuclei.

The cells were arranged in whorls and fascicles, which were suggestive of leiomyoma (Figure 3). At the 3-year follow-up, the patient had no recurrence and was voiding with good stream.

CASE 2. A 38-year-old female presented with intermittent dysuria of 3-months duration. She had no previous urinary symptoms. She had noticed a mass in the urethral region for the past month. Examination showed a nodular mass protruding from the urethral orifice (Figure 4). Routine laboratory investigations were within normal limits. Magnetic resonance imaging (MRI) of the pelvis revealed a lobulated, smoothly marginated mass that arose from the right anterolateral aspect of the urethra. Coronal scans showed the mass projecting superiorly into the bladder base. The mass showed homogeneous medium signal intensity on T1-weighted images. On T2-weighted images, the mass was of medium signal intensity with slight heterogeneity due to a few ill-defined high signal intensity foci (Figure 5). Cystourethroscopy showed a mass arising from the anterior wall of the urethra, extending from the meatus upward to the bladder neck. Transvaginal excision of the mass (Figure 6) was

Images: Case 1

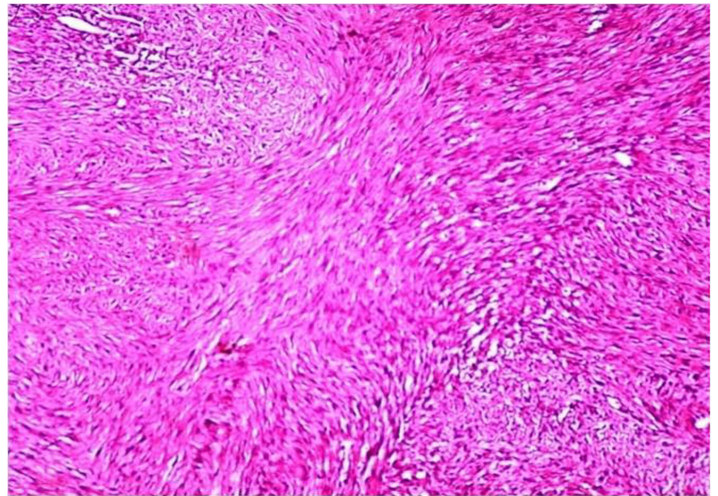
Figure 1. Mass protruding from the urethra of a patient with leiomyoma.

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Figure 3. Photomicrograph showing a spindle cell neoplasm (hematoxylin and eosin; 200x).

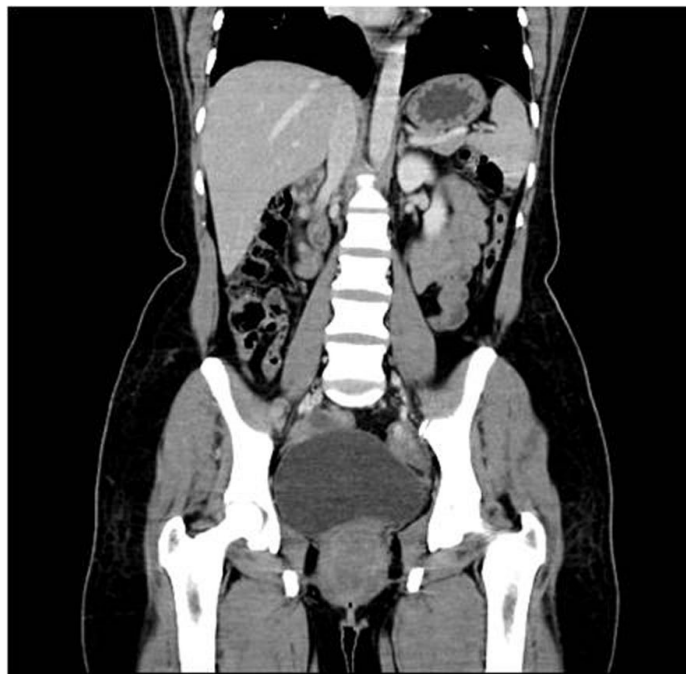
doi: 10.3834/uij.1944-5784.2011.04.06f3



These cells have eosinophilic cytoplasm and elongated nuclei. The cells are arranged in whorls and fascicles..

Figure 2. CT scan showing a homogenously enhancing urethral mass.

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Images: Case 2

Figure 4. Large urethral mass from a patient with leiomyoma.

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Figure 6. Excised urethral mass from a patient with leiomyoma.

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Figure 5. MRI showing a urethral mass with a mixed-intensity signal.

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done and histology was suggestive of leiomyoma. On 2-year follow-up, no recurrence was seen.

CASE 3. A 35-year-old female presented with intermittent painless urethral bleeding and dyspareunia of 1-month duration. Examination showed a cherry-red colored mass protruding from the urethral meatus (Figure 7). MRI of the pelvis showed a homogenous medium-intensity mass that measured 2.5 cm in the distal urethra. Cystourethroscopy also showed a mass extending from the meatus up to 2 cm proximally with congestion of the overlying mucosa. Complete excision of the mass was done (Figure 8). Hematoxylin and eosin (H&E) stain of the cut sections of the mass showed leiomyoma. No recurrence was seen after 2 years.

DISCUSSION

Urethral tumors are rare and can arise from its lining epithelium, glandular epithelium, or smooth and striated muscle fibers. Urethral leiomyomas are benign tumors that arise from the smooth muscle fibers. They are extremely rare and can present with varying clinical features. The first reported case was by Buttner in 1894 [1]. Tumors most commonly occur in women of reproductive age and typically involve the proximal urethra [2]. Complications may include obstruction to the urethra, causing urinary tract infection and retention of urine. There

is no reported case of malignant degeneration of an existing urethral leiomyoma. Although symptomatic swelling is the most common mode of presentation, patients presenting with hematuria, dyspareunia, repeated urinary tract infections, urinary retention, acute renal failure, or chronic renal failure have also been described [3]. Our patients presented with a mass and urethral bleeding.

The differential diagnosis is from a urethral caruncle, papilloma, urethrocele, urethral diverticulum, or carcinoma. Urethral and vaginal wall leiomyomas can be identified before surgery with a reasonable degree of certainty, based on their clinical and imaging characteristics [4]. Transvaginal sonography (TVS) has been reported to show an isoechoic to hypoechoic mass; it can also delineate the relationship of the mass to the urethra. CT shows the urethral leiomyoma as a homogenous or heterogenous mass in the urethra that may project into the bladder. Urethral leiomyomas appear hypointense or isointense to muscle on T1-weighted images and hyperintense or isointense to muscle on T2-weighted images, with uniform enhancement. In addition, MRI excludes urethral diverticulae. Grossly, the tumors are well-encapsulated; microscopically, they are composed of smooth muscle cells arranged in a whorled pattern [5]. Immunoperoxidase staining employing a specific monoclonal, anti-smooth muscle antibody confirms the

Figure 7. Cherry-red urethral mass from a patient with leiomyoma.

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Figure 8. Excised urethral mass from a patient with leiomyoma.

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smooth-muscle origin of this neoplasm [6]. These tumors also show positive immunoreactivity for estrogen receptors [7]. The tumors may enlarge during pregnancy and shrink after delivery, which further supports the influence of sex hormones [6].

Complete surgical excision is the treatment of choice, although cases of transurethral resection of the tumor have been documented without recurrence [8]. All of our patients had an uneventful postoperative course and were able to void freely. There were no reports of stress urinary incontinence. Due to the possibility of hormonal influence on these tumors, conservative management using GnRH analogs may have a role in the future [9]. However, complete local excision is the treatment of choice until further research is done to support hormonal manipulation. The prognosis is excellent because malignant transformation has not been reported and recurrence is rare.

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