

Rare Case of Intramural Urinary Bladder Leiomyoma

Intramural Urinary Bladder Leiomyoma

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Abstract

Leiomyomas are the most common mesenchymal tumors of the urinary bladder, accounting for 0.43% of all bladder tumors. There are approximately 250 cases described in the scientific literature. The intramural location of this neoplasm is rare; only 7% of all the leiomyomas of the urinary bladder are found in such locations. We present a case of a 65-year-old male with an intramural leiomyoma that was found incidentally in an evaluation for left lower quadrant pain. Histopathologically, the tumor showed atypical smooth muscle cells, indicative of leiomyoma.

The clinical presentation, radiographic imaging, and surgical management of this rare tumor are presented herein.

Resumen

Los leiomiomas de la vejiga urinaria son los tumores benignos de origen mesenquimal más comunes de este órgano. Representa un 0.43% del total de tumores de vejiga. Actualmente se han reportado alrededor de 250 casos en la literatura. Estos tumores se encuentran mayormente en el lumen o la parte externa de la vejiga, pero en casos inusuales se pueden encontrar dentro de la pared (7% de los leiomiomas de vejiga son intramurales). En este reporte se presenta el caso de un hombre de 65 años de edad con un leiomioma intramural, el cual fue encontrado incidentalmente luego de una visita a sala de emergencia por un dolor abdominal del cuadrante izquierdo inferior. En la patología se estableció que el tumor estaba compuesto de células de músculo liso que favorecen el diagnóstico de leiomioma.

Introduction

Benign urinary bladder neoplasms are relatively rare and comprise 1 to 5% of all bladder neoplasms (1). Leiomyomas are the most common benign tumors of the bladder and account for 0.43% of all bladder tumors (2). Around 250 cases have been reported in the English scientific literature (3). Endovesical leiomyomas constitute 63% of all reported cases of this kind of tumor, with the intramural and extravesical types accounting for 7% and 30%, respectively (4). The clinical presentation of this neoplasm may vary from being asymptomatic to being symptomatic with irritative symptoms, obstructive symptoms, and/or hematuria (5).

We present a case of benign urinary bladder leiomyoma in a male patient who presented with left lower quadrant pain. The final diagnosis was leiomyoma of the intramural type, a rare finding.

Case presentation

A 65-year-old patient went to the emergency room (ER) with left lower quadrant pain. A CT scan done in the ER showed acute diverticulitis and a large left pelvic mass. A subsequent MRI was performed and the patient was referred to the urology clinic. The patient complained of occasional urge incontinence. He denied frequency, dysuria, gross hematuria, slowing of urinary flow, hesitancy, dribbling, fever, or history of renal calculi. The patient reported no history of smoking. The abdominal exam was normal to palpation; no organomegaly or masses were felt. Rectal examination showed a small, rubbery, freely movable prostate. The urine analysis was normal.

A cystoscopy was performed and showed a large anterolateral submucosal mass effect. The mass originated close to the left side of the bladder neck, just reaching the left ureteral orifice but not compressing it. A very limited transurethral resection of the bladder (TURB) was performed, and a biopsy was taken with a cutting loop. The biopsy showed a spindle cell neoplasm, indicating the proliferation of benign smooth muscle cells (leiomyoma). An open surgery with extravesical enucleation of the tumor was performed. A 70 grams mass, measuring 7.3cm x 4.5cm x 4.0cm was excised. The external surface was smooth and glistening. The histopathology of the tumor showed an atypical smooth muscle tumor favoring the diagnosis of leiomyoma. The post-operative period was uneventful, and the urinary catheter was removed 1 week after the surgery.

Discussion

Urinary bladder leiomyomas are rare benign neoplasms accounting for only 0.43% of bladder tumors. They can arise throughout the genitourinary system, but the most common location is the renal capsule (6). Most are small, measuring 1 to 4 cm at their greatest dimension, although cases

involving tumors of up to 25 cm have been reported. The cut surface is circumscribed and bulging with a whorled gray-white appearance (7,8).

The differential diagnosis of a mesenchymal neoplasm of the urinary bladder is broad and includes leiomyoma, leiomyosarcoma, and spindle cell neoplasms (9). The most important differential diagnosis to exclude when confronted with a urinary bladder mesenchymal mass is leiomyosarcoma, because of the aggressive nature of this tumor. The gold standard for diagnosing leiomyoma is the histopathological examination of a tissue sample (10). Generally the morphologic features will be sufficient for distinguishing between these tumors, but if needed, immunohistochemistry will establish the final diagnosis (7,8).

Microscopically, leiomyoma consists of intersecting fascicles of smooth muscle cells with moderate-to-abundant eosinophilic cytoplasm. Cellularity is usually limited. The nuclei are oval to cigar-shaped, centrally located and blunt-ended, and lack significant nuclear atypia, mitotic activity, and necrosis (7,8).

This neoplasm can present as an asymptomatic mass, as our presented case, or with obstructive voiding symptoms and/or acute urinary retention. This is secondary to a ball valve like effect caused by pedunculated tumors. Less often, this kind of neoplasm can produce irritative voiding symptoms, pelvic pain, hematuria, hydronephrosis, with, or without flank pain (7,8).

The etiology of this neoplasm is still unknown, in part because of the rarity of these tumors. However it has been proposed that chromosomal abnormalities (2), hormonal influences, dysontogenesis, perivascular inflammation, urinary bladder wall, and detrusor infection (5) contribute to the development of these neoplasms.

Urethro-cystoscopy and different imaging modalities have been implemented to detect urinary bladder leiomyomas. Usually ultrasound (US) is the first tool used, especially in women with an

asymptomatic incidental leiomyoma (10). On ultrasonography, these lesions are usually seen as smooth wall homogeneous hypoechoic masses on the wall of the urinary bladder (12). US provides accurate information of the mass and the surrounding structures (13). Intravenous urography shows filling defects of the bladder (2). Computed tomography (CT) and magnetic resonance imaging (MRI) can both be used to assess the site, dimension, and extension of the tumor; but MRI has been shown to be superior because it offers better contrast and resolution (14). A leiomyoma presents on MRI as a well circumscribed rounded mass with intermediate signal intensity in T1, and intermediate to low intensity signaling in T2. After contrast administration, variable tumor enhancement is detected; some enhance homogeneously and others very little. Contrast enhancement is particularly useful to detect cystic degenerations (15). Urethro-cystoscopy typically shows a bladder mass with a smooth, intact mucosa (5), as is the case here.

Currently the only treatment available for urinary bladder leiomyoma is surgical, and the approach depends mostly on the size and location (14). Small tumors that are easily accessible can be treated with transurethral resection of the bladder (TURB). Tumors that are in difficult-to-reach places or that are large can be resected openly, laparoscopically, or with robotics, depending on the preference of the surgeon. In cases with atypical features, resection with frozen sections to ensure negative margins may be appropriate. For a small, asymptomatic bladder leiomyoma, a conservative approach has been suggested since there is no reported confirmed malignant transformation of this tumor in the literature. In most cases, treatment is curative, although a leiomyoma can recur if incompletely resected. The problem is that on many occasions, the only definite way to differentiate between bladder leiomyoma and leiomyosarcoma is with tissue collected from surgery.

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Figures

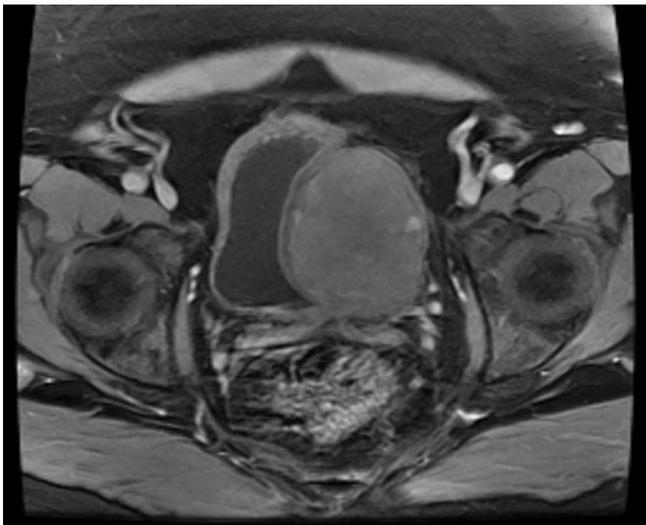


Figure 1. Magnetic resonance imaging shows a solid mass measuring 7.5 x 4.9 x 6.8 cm on the wall of the urinary bladder.



Figure 2. Gross specimen of the resected leiomyoma.

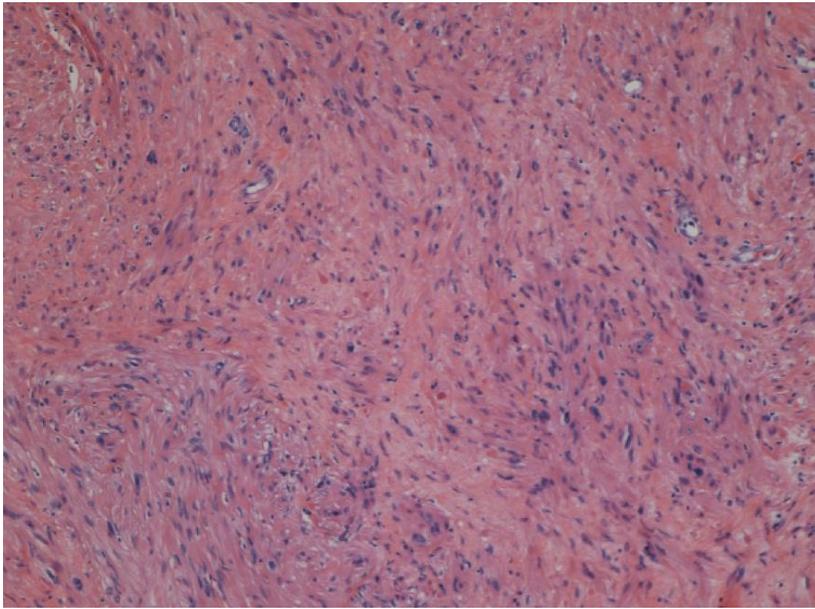


Figure 3: Leiomyoma of the Urinary bladder showing intersecting fascicles at low magnification