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Article · March 2017

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CASE REPORT

Bladder Leiomyoma

Selahattin Caliskan and Mustafa Sungur

ABSTRACT

Leiomyoma of the bladder is a very rare disorder that accounts for 0.43% of all bladder neoplasms. Although the pathophysiology of the bladder leiomyoma is unknown, there are some theories in it. The patients can be asymptomatic; and clinical symptoms, when present, are associated with the tumor size and location. Imaging techniques such as ultrasonography, intravenous urography, computed tomography, and magnetic resonance imaging are helpful but definitive diagnosis is made by histopathological examination. Surgical resection of tumor with transurethral, open, laparoscopic and robotic approaches is the main treatment. We present a case of leiomyoma of the bladder in an adult male patient.

Key Words: *Benign. Bladder. Leiomyoma. Neoplasm.*

INTRODUCTION

Benign bladder tumors are rare and present with a wide spectrum of complaints ranging from irritative to obstructive symptoms.[1] Leiomyoma is the most common benign mesenchymal tumor of the bladder.[2] Bladder leiomyoma usually occurs in women between the fourth and fifth decades of life.[3] Clinical presentation includes; obstructive smptoms (49%), irritative symptoms (38%), flank pain (13%), and hematuria (11%).[4] Ultrasound, contrast enhanced computed tomography, magnetic resonance imaging, and cystoscopy are valuable diagnostic tools for diagnosis; but the definitive diagnosis requires histopathology.[2] Treatment of leiomyoma is surgical resection.[5] The choice of surgery depends on tumor size, localisation and its involvement of urinary sphincter or ureter orifice.[2] Transurethral resection is apropriate for small endovesical tumors. Larger endovesical, intramural or extravesical tumors can be managed with segmental resection.[5]

We, herein, present a case of a young male patient who was treated with transurethral resection and diagnosed as bladder leiomyoma on histopathology.

CASE REPORT

A 39-year man presented with gross hematuria for one month. The physical examination was normal. Labarotory results were within normal ranges. Ultrasonography revealed 5x6 cm sized mass in the bladder. Computed tomography showed 48x62 mm sized endovesical mass that was localized in the anterior area of the bladder (Figure 1). The tumoral mass was located entirely in the bladder and there was no extension or involvement of adjacent structures. Cystoscopy revealed 6 cm sized solid mass in the bladder (Figure 2). The patient underwent transurethral resection for diagnosis and treatment. The tumor was resected completely. Microscopic examination revealed spindle-shaped cells that contained eosinophilic cytoplasm and centrally located cigar-shaped nuclei. On immunohistochemical studies, smooth muscle actin and desmin were strongly positive, while Ki-67 was negative. The pathologic examination confirmed the diagnosis of bladder leiomyoma.

Magnetic resonance imaging showed no recurrence or residual tumor after 3 months from the diagnosis (Figure 3). The patient has no complaints in the follow-up period of 6 months.

DISCUSSION

Benign mesenchymal tumors constitute 1-5% of all benign bladder tumors; and leiomyoma accounts for 0.43% of all bladder tumors.[1] The first bladder leiomyoma was reported in 1931 by Kretschmer.[6] Since then, about 250 cases of bladder leiomyoma reported in the literature.[2] Goluboff and collegues reviewed 37 cases of bladder leiomyoma and reported that the mean age of patients was 44 years and 76% of the patients were women.[7] Park and collegues reported in their study of 9 cases that mean age of patients was 43.6 years and all of the patients were women.[5] The bladder leiomyomas can be endovesical (63%), intramural or submucosal (7%), and extravesical (30%), according to the tumor location.[8]

Although the pathophysiology of bladder leiomyoma is unclear, Teran and Gambrell proposed 4 theories: hormonal influences, dysontogenesis, perivascular inflamation, and infection of bladder musculature.[9] Additionally, an association with female hormones and the increased use of ultrasonography in women has been suggested.[4]

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Received: October 29, 2015; Accepted: January 03, 2016.

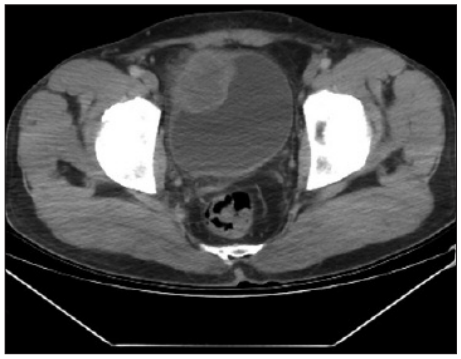

Figure 1: Computed tomography showing solitary, smooth surfaced in the bladder lumen mass.

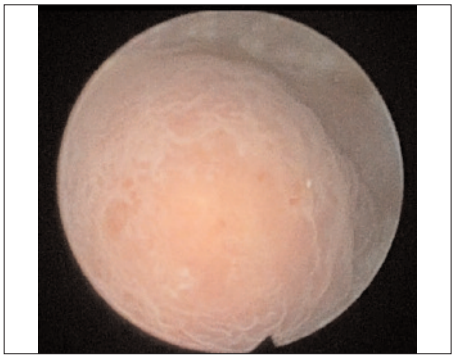

Figure 2: Endoscopic image of the bladder tumor.

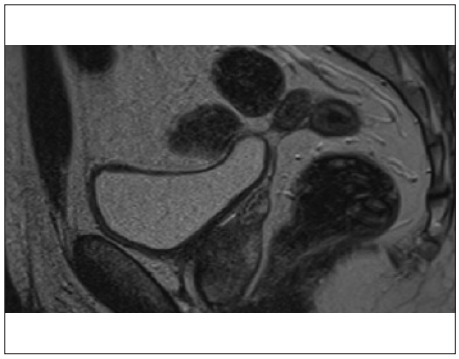

Figure 3: No recurrence of tumor after three months on magnetic resonance imaging.

Although 20% of women with bladder leiomyomas are asymptomatic; symptomatic patients present with obstructive symptoms (49%), irritative symptoms (38%), flank pain (13%), and hematuria (11%).[1] Lower urinary tract symptoms occur more frequently in endovesical, large tumors. In additon, hydronephrosis can occur as a result of increased intravesical pressure from a ball-valve effect.[4]

Imaging modalites are helpful for the diagnosis of leiomyoma including intravenous urography, ultrasonography, computed tomography, and magnetic resonance imaging.[4] Intravenous urography shows a filling defect in the bladder and ultrasonography reveals a smooth walled, hypoechoic, solid mass with varying degrees of internal echoes, covered by a thin hyperechoic line of mucosa.[1] A homogeneous solitary tumor protruding into the bladder without enlarged lymph nodes is usually seen in computed tomography. Magnetic resonance imaging shows an intermediate signal intensity on T1-weighted images and intermediate to low signal intensity on T2-weighted images.[4]

Histopathological examination is necessary to confirm the diagnosis and to rule out malignancy such as leiomyosarcoma.[5] Bladder leiomyomas are similar to uterine leiomyomas in pathological examination. They are composed of smooth muscle cells with moderate to abundant eosinophilic cytoplasm and the nuclei which are oval to cigar-shaped, centrally located, blunt ended without hyperchromasia, pleomorphism and individual cell necrosis. Most of the bladder leiomyomas exhibit strong immunoreactivity for smooth muscle actin, muscle specific actin, desmin, vimentin and are usually negative for cytokeratin and S100 protein.

Bladder leiomyomas can be treated by surgical resection.[5] Surgical technigue depends on the dimensions and location of the tumor. Small endovesical tumors are managed with transurethral resection; larger endovesical, intramural or extravesical tumors need segmental resection. Segmental resection can be performed with open, laparoscopic or robotic approaches for succesful removal of the tumor.

The prognosis is excellent and no malignant transformation has been reported till date. Recurrence can happen, so follow-up is essential for patients with incomplete resection.

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