

Leiomyoma of Urinary Bladder in Middle-Aged Female

Bhushan Dodia¹ · Abhay Mahajan¹ · Dhruvi Amlani¹ · Sandeep Bathe¹

Received: 29 May 2016 / Accepted: 12 August 2016 / Published online: 24 August 2016
© Federation of Obstetric & Gynecological Societies of India 2016

About the Author



Dr. Bhushan Dodia I am presently pursuing my course in M.Ch. Urology, working as Senior Resident in Department of Urology at MGM Medical College and Hospital, Aurangabad. I have completed my M.S. in General Surgery from MGM Medical College and Hospital, Navi Mumbai and my undergraduate studies from Government Medical College, Bhavnagar.

Keywords Bladder · Leiomyoma · Benign tumor · Urinary bladder

Introduction

Bladder leiomyomas are benign mesenchymal neoplasms and very rare urinary tumors that represent <0.5 % of all bladder tumors, with only 250 cases reported worldwide till date [1]. The incidence of bladder leiomyoma is 3 times higher in women than in men. Typically, it occurs in the fourth and fifth decades of life.

We present here a case of leiomyoma of urinary bladder in middle-aged woman with typical symptoms of irritation and dysuria. On investigations, she was diagnosed to have intravesical posterolateral mass with preserved fat planes between cervix and urinary bladder. She later underwent enucleation after histopathology diagnosis of leiomyoma of urinary bladder. Leiomyoma of urinary bladder forms the rare forms of benign mesenchymal tumors of urinary bladder presenting mainly in female in reproductive age group.

Dr. Bhushan Dodia is Resident in Urology at M.G.M. Medical College & Hospital; Dr. Abhay Mahajan is Associate Professor in Urology at M.G.M. Medical College & Hospital; Dr. Dhruvi Amlani is Resident in Urology at M.G.M. Medical College & Hospital; and Dr. Sandeep Bathe is Lecturer in Urology at M.G.M. Medical College & Hospital.

✉ Abhay Mahajan
drabhaymahajan@gmail.com

¹ Department of Urology, M.G.M. Medical College & Hospital, N-6, CIDCO, Aurangabad 431003, Maharashtra, India

Case History

A 35-year-old female patient presented in our department with complaints of occasional painless hematuria past 2-month complaints of dysuria and irritative symptoms with 2–3 episodes of slight hematuria. Her physical examination was normal. On investigations, she was found to have normal biochemistry profile with normal creatinine and urine microscopy showing 3–4 pus cells. Her ultrasonography showed 33 × 43 mm heteroechoic mass with smooth surface at right posterolateral bladder wall projecting into lumen and fat planes preserved between cervix and bladder wall. MRI of the patient showed intraluminal urinary bladder wall lesion predominantly hypointense on T2WI and T1WI with no extension to perivesical space (Fig. 1). Diagnostic cystoscopy revealed smooth mass at right posterolateral bladder wall separate from right ureterovesical junction with normal overlying bladder mucosa. Pervaginal examination revealed no cervical growth or any vaginal involvement. Bladder mass biopsy was taken which revealed leiomyomatous lesion (Fig. 2). Patient underwent open transvesical enucleation of mass lesion. Postoperative histopathology confirmed the diagnosis of leiomyoma of urinary bladder (Fig. 3).

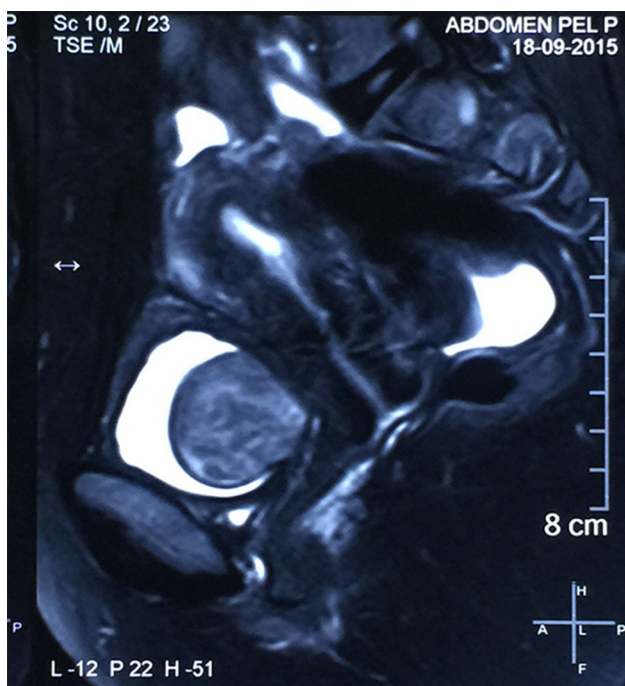


Fig. 1 MRI of the patient showing bladder mass along posterolateral wall

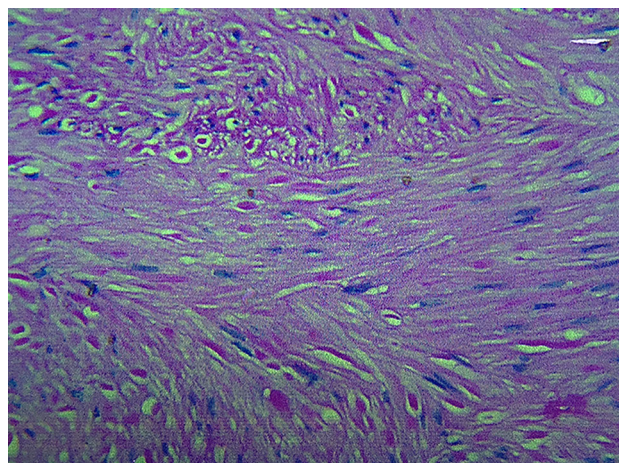


Fig. 2 Histopathology showing fascicles of smooth muscle fibres separated by connective tissue as seen in leiomyoma of urinary bladder

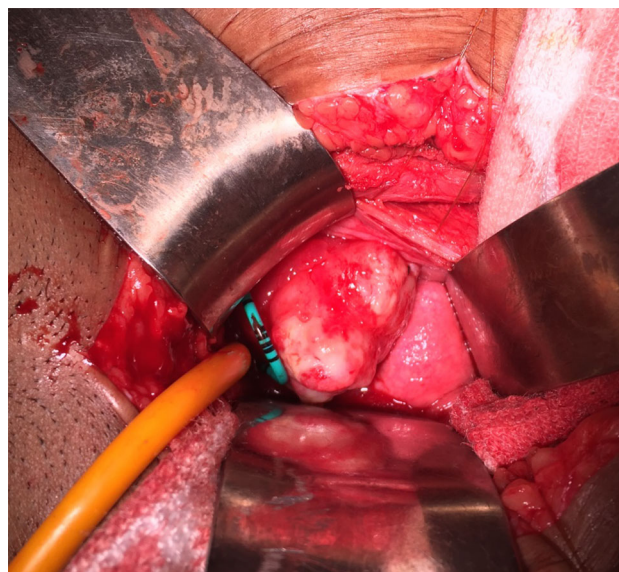


Fig. 3 Intraoperative finding of bladder mass along right posterolateral wall. Right ureteric orifice is found to be distinct from mass and is cannulated with ureteric catheter

Discussion

The benign bladder tumors consist of leiomyomas, fibromyomas, rhabdomyomas, and fibromas. Among these, the most common histological type of benign bladder tumor is leiomyoma, which is commonly found in middle-aged females [1].

Leiomyoma may occur at any sites in the genitourinary tract. In the urinary bladder, it arises from submucosa, but can develop and grow in any layer. Thus, it can be intravesical, intramural, or extravesical. Intravesical form

has been reported most frequently in the literature (63–86 %) followed by extravescical (11–30 %), while intramural type is less common accounting for 3–7 % of the cases. Intravesical tumors, first named and described as endovesical tumors by Campbell and colleagues, is a result of submucosal growth of leiomyoma [2].

Endovesical mass has been mostly recognizable due to its characteristic bulging into the bladder lumen, which induces the irritative symptoms and forces the patient to seek medical treatment [2]. Endovesical tumors are usually pedunculated or polypoid, while intramural myomas are generally well encapsulated and surrounded by bladder wall muscle. The endovesical form usually causes irritative or obstructive symptoms or gross hematuria that results in detection. Intramural form, especially small tumor, may not produce symptoms [2].

There are many theories that have been proposed for the causation of this tumor such as a hormonal-related lesion, embryonic rests' tumor, postinflammatory myomatous metaplasia, localized infection, and “wandering” fibroid resembling a parasitic uterine leiomyoma. The female predominance at a reproductive age suggests hormonal influence more than the other possibilities [3].

Symptoms caused by leiomyoma of the urinary bladder depend on its size and location. Small intravesical tumors that are present away from the bladder neck or ureteral openings and those which are extravescical or intramural are asymptomatic. If the patient is symptomatic, the most common symptoms include obstructive urinary symptoms (49 %), followed by irritative symptoms (38 %), flank pain (13 %), and hematuria (11 %). Larger tumors are more likely to cause irritative symptoms, while those arising near the bladder neck or ureteral openings tend to cause obstructive symptoms [3].

First initial modality for diagnosing bladder leiomyomas is mostly ultrasonography which shows homogenous smooth lesions with peripheral hyperechogenicity [3]. Abdominal ultrasound may be helpful in differentiating the cystic lesion from a solid one. The transvaginal ultrasound is helpful particularly in females to reveal a submucosal solid mass in the bladder and can confirm the origin of the tumor in the bladder wall and its relationship to the uterus and vagina [3].

CT can be used to assess the location of these tumors and to differentiate between a fluid-filled and a solid lesion, in addition to identifying its relation to the surrounding structures [3]. MRI can have a higher specificity for the mesenchymal component of these tumors and will delineate their relation with the bladder wall and detrusor [3].

MRI by itself could confirm this diagnosis, but it cannot differentiate mesenchymal tumors from the more common transitional cell tumors, and the histopathological study is always necessary to confirm the diagnosis [4, 5].

From a diagnostic standpoint, leiomyomas can be suspected on US and cystoscopy. However, MRI can differentiate mesenchymal tumors from the more common transitional cell tumors and even their malignant counterpart leiomyosarcoma. Thus, cystoscopy and biopsy of the lesion are necessary prior to exploration.

Histopathologically, leiomyoma of the urinary bladder is composed of fascicles of smooth muscle fibres that are separated by connective tissues with no mitotic activity, cellular atypia, or necrosis. On immunohistochemistry, they will have positive staining for smooth muscle actin and negative staining for Ki-67 [4].

Treatment is determined primarily according to the size and anatomical location of the tumors. Surgical options include transurethral resection of the tumor and open surgical excision [5]. Surgical excision has excellent prognosis and should always be offered. Moreover, transurethral resection is a safe and effective initial choice for patients with relatively smaller tumors. Larger tumors and those with extravescical growth usually require open surgery with segmental resection or partial cystectomy [5]. Successful laparoscopic and robotic resection of leiomyoma of the urinary bladder has also been reported [4].

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Erdem H, Yildirim U, Tekin A, et al. Leiomyoma of the urinary bladder in asymptomatic women. *Urol Ann.* 2012;4(3):172–4. doi:10.4103/0974-7796.102667.
2. Ghadian A, Hoseini SY. Transvesical enucleation of multiple leiomyoma of bladder and urethra. *Nephro-urol Mon.* 2013;5(1):709–11. doi:10.5812/numonthly.5122.
3. Goktug GH, Ozturk U, Sener NC, et al. Transurethral resection of a bladder leiomyoma: a case report. *Can Urol Assoc J.* 2014;8(1–2):E111–3. doi:10.5489/cuaj.1335.
4. Kalathia J, Agrawal S, Chipde SS, et al. Total endoscopic management of a large bladder leiomyoma. *Urol Ann.* 2015;7(4):527–9. doi:10.4103/0974-7796.164858.
5. Itam S, Elhage O, Khan MS. Large leiomyoma of the bladder masquerading as an enlarged prostate gland. *BMJ Case Rep.* 2016. doi:10.1136/bcr-2015-212800.