

Leiomyoma of the urinary bladder

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Abstract

Leiomyoma of urinary bladder is a rare tumour with an incidence of < 0.5% of all the bladder tumours. We report a case of leiomyoma of bladder after taking written and informed consent from a 38 years old female, after obtaining the permission of the institutional review board (IRB). She presented in November 2015, with symptoms of obstructive lower urinary tract for 1 year followed by acute urinary retention. Physical examination was unremarkable. Ultrasound showed well circumscribed polypoidal growth in the bladder with mild hydronephrosis on the left side. CT scan abdomen and pelvis with contrast was done, which revealed well circumscribed, rounded soft tissue lesion of 4.4 x 4.5 cm at the posterior inferior surface of the bladder near the bladder neck. Initially TURBT was done but after 6 months patient again went into urinary retention so local excision of the tumour was done. Histopathology confirmed the diagnosis of leiomyoma of the bladder. The diagnosis and management of leiomyoma of the bladder is presented along with review the literature.

Keywords: TUR transurethral resection, LUTS Lower urinary track symptoms.

Introduction

Leiomyoma of the bladder is a benign mesenchymal tumour of the bladder.¹ It's a very rare benign tumour which constitutes 0.43% of the entire bladder growths.² The frequency of leiomyoma is three times more common in females than in males, and mostly it occurs between 4th to 5th decade of life. Patient can present with a wide spectrum of symptoms from asymptomatic to obstructive symptoms (49%), irritative symptoms (38%) and haematuria (11%). The etiology of leiomyoma is still unknown. Several theories have been proposed such as a hormonal-related lesion, embryonic rests tumour, post-inflammatory myomatous metaplasia, localized infection and fibroid resembling uterine leiomyoma. Ultrasound has been replaced by three-dimensional CT and MRI for a better assessment of the delineation planes and the sites of origin. We report this case which mainly presented with

acute urinary retention. The mass detected within her bladder by imaging and later biopsy confirmed was leiomyoma. The previous reports have limitations and shortcomings for the criteria related to the surgical management of these tumours, with areas of controversy leading to different management technique when several factors were involved, e.g. the size, exact location, and the natural evolution of these benign tumours. The objective of this case report is to review the detail of leiomyomas of the urinary bladder, their incidence, epidemiology, etiology, clinical presentation, diagnostic methods, and to finally select the best therapies.

Case Report

A 38 years old female with no known reported co-morbids presented in emergency department of The Indus Hospital in November 2015 with history of sudden painful urinary retention. She had the history of lower urinary tract symptoms (LUTS) for one year. LUTS included straining, intermittency, sense of incomplete bladder emptying and increased frequency of urination. Her past medical and surgical history was unremarkable. General physical and abdominal examinations did not reveal any abnormality.

Ultrasonography showed a well circumscribed polypoidal lesion projecting into the urinary bladder on the left side causing mild hydronephrosis of the left kidney. Intravenous pyelography showed large filling defect in the bladder and normal kidneys. CT scan abdomen and pelvis with contrast was done, which revealed a large well circumscribed, round polypoidal mass measuring 4.4 x 4.5



Figure: Polypoidal mass in left lateral wall of urinary bladder

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cm at the posterior inferior surface of the bladder near the bladder neck (Figure). Her haematology work up was normal.

On cystoscopic examination there was a large well circumscribed mass near the bladder neck, remaining bladder mucosa was normal. Left ureteric orifice was not visualized. Transurethral resection of the mass was done. On second post operative day we removed the Foley's catheter and she voided well. The histopathological examination showed leiomyoma of the bladder. On follow up at 3 months the patient was asymptomatic but at 6 months she again went into urinary retention. On ultrasound there was re demonstration of the bladder mass at the same location so this time we decide to do open surgical resection. The patient underwent an open local excision of this well capsulated tumour and post operative histopathology showed the leiomyoma. The post operative period was unremarkable. Catheter was removed after 2 weeks. Although the tumour was of a small size, and removed by TUR, later she presented with urinary retention and open surgical resection of the tumour had to be performed. Over 9 months follow up period there was no LUTS and she is voiding well. No recurrence is documented after a years follow-up. The patient experienced a relief of the pain and normal voiding function was regained after surgical excision.

Discussion

Mesenchymal tumours of the bladder are rare tumours. These include fibromyoma, rhabdomyomas, fibromas, leiomyomas and osteomas. Among these, the most common histological type of benign tumour is leiomyoma. Leiomyoma is mostly found in females between 4th to 5th decades.³ Leiomyomas are classified as endovesical, intramural and extravescial. Endovesical is the most common location and it corresponds to 63-86% of cases, while intramural leiomyomas are present in 3-7% and extravescial in 11-30%. The etiology of these benign tumours is still unknown. It has been speculated that bladder leiomyomas might arise from chromosomal alterations, hormonal disturbances, repeated bladder wall and detrusor infection, perivascular inflammation or dysontogenesis. Leiomyoma mostly presents with obstructive LUTS but may present with irritative LUTS or haematuria.^{4,5} The study done by Goluboff et al⁶ showed that 49% of the patients presented with obstructive LUTS whereas in another study done by Knoll et al irritative LUTS were more common.⁵ In radiological imaging ultrasound is very helpful in

diagnosing the lesion also helpful in differentiating between cystic lesions from solid lesions. Cystoscopy is considered to be the best initial diagnostic test. Contrast computed tomography is helpful in the diagnosis as well as for describing the relation of leiomyoma to the surrounding structures especially with uterus and vagina in females.⁷ Intravenous urography is being progressively abandoned. Histopathological study is always necessary for the confirmation of diagnosis. MRI shows low intensity both on T1- and T2-weighted sequences, with a smooth periphery, mimicking a uterine leiomyoma. Leiomyoma of the urinary bladder is composed of fascicles of smooth muscle fibres that are separated by connective tissues. They are non-infiltrative smooth muscle benign tumours with no mitotic activity, cellular atypia or necrosis. Immunohistochemistry shows positive staining for smooth-muscle actin and negative staining for Ki-67.

Various treatments are described for its management. Intramural tumours can be managed according to their size and location. Small and easily accessible tumours can be treated with transurethral resection of the bladder tumour (TURBT),⁸ where as open surgical resection is recommended for larger tumours with unfavourable positioning, surgical resection include segmental resection or laparoscopic partial cystectomy.⁶ Saliva Ramos et al did a pooled analysis of leiomyoma and showed that laparotomy was done in 62.2%, enucleation in 32.2%, partial cystectomy in 27.8% and total cystectomy in 2.2% of patients.⁹ The follow up of the patients showed no evidence of recurrence up to 20 years of surgery or malignant transformation.

Conclusion

Leiomyoma of the bladder is a rare benign lesion, which may occur in the urinary tract with good cure rate. In our experience local excision is the treatment of choice. Thorough history and careful physical examination should be made when patients present with a prolonged history of urinary tract symptoms. Women seem to be more affected, and obstructive symptoms predominate.

TURBT is the mainstay of therapy for small endovesical bladder leiomyoma. If the tumour is large, segmental resection or partial cystectomy should be considered. A better understanding of this disease in the future might perhaps offer the patient a new intravesical agent that will target these cells specifically.

Surgical treatment, when the excision is wide enough, is almost always very effective, leaving a very low recurrence rate, and with no symptoms, confirming the benign

nature of bladder leiomyomas and their excellent prognosis.

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