

CASE REPORT

A Rare Case of Asymptomatic Leiomyoma of the Urinary Bladder

Jonathan S. Mendoza, MD; Alvin D. Lavadia, MD and Steve L. Lim, MD

Institute of Urology, St. Luke's Medical Center

Leiomyoma of the urinary bladder is not often encountered, occurring in only 0.43% of all bladder tumors. Among the known cases, patients usually present with obstructive symptoms, irritative symptoms or hematuria. This is a rare case of a 50-year-old male who was incidentally diagnosed to have a bladder mass. After cystoscopy, an open partial cystectomy was done with complete resection of the bladder mass. Final histopathology and immunochemical stains confirmed the diagnosis of leiomyoma of the urinary bladder.

Keywords: Leiomyoma, bladder tumor, partial cystectomy, genitourinary tract

Introduction

Leiomyoma of the bladder is a rare benign tumor and accounts for 0.43% of all bladder tumors. Majority of patients present with either obstructive or irritative symptoms, while 19% of patients are asymptomatic.¹ Here is a case of this rare tumor of the bladder.

The Case

This is a case of a 50-year-old male, radiology technician, non-smoker, non-alcoholic beverage drinker who was incidentally found to have a bladder mass after a routine whole abdominal ultrasound. The patient denies any history of hematuria, dysuria and obstructive or irritative lower urinary tract symptoms. Abdominal examination was unremarkable. A computed tomography (CT) urogram was done which confirmed an intraluminal bladder mass measuring

4.5cm x 3.9cm x 4.2cm in the right, antero-lateral urinary bladder wall, and circumferential bladder wall thickening. No hydronephrosis was noted (Figure 1). During bimanual palpation under spinal anesthesia, the bladder mass was non-palpable and the bladder was not fixed. Cystoscopy was done which revealed smooth bladder mucosa and a bulge on the right lateral aspect of the bladder. The patient then underwent open partial cystectomy with bilateral pelvic lymph node dissection. The gross appearance of the excised specimen is shown in Figure 2. The initial histopathology report showed spindle cell neoplasm, favoring a smooth muscle neoplasm that has a mitotic count of 0-1/10 high power field (Figure 3). Additional histochemical stains were done. The smooth muscle actin (SMA), Desmin antibody and Caldesmon anti-body stains were positive, while S100, and CD117 stains were negative. These findings supported the diagnosis of a leiomyoma (Figure 4). The rest of the patient's hospital stay was uneventful and he was discharged



Figure 1. CT urogram showing the 4.5cm x 3.9cm x 4.2cm mass in the right, antero-lateral wall of the urinary bladder (arrows) as seen on A) axial view, B) coronal view, C) sagittal view.

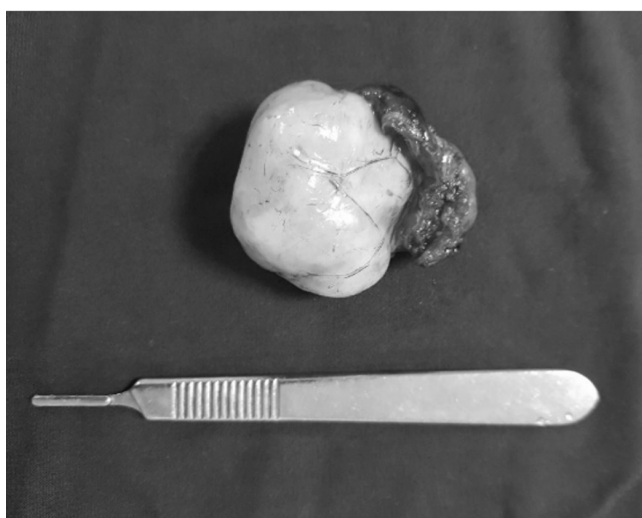


Figure 2. Gross specimen after partial cystectomy

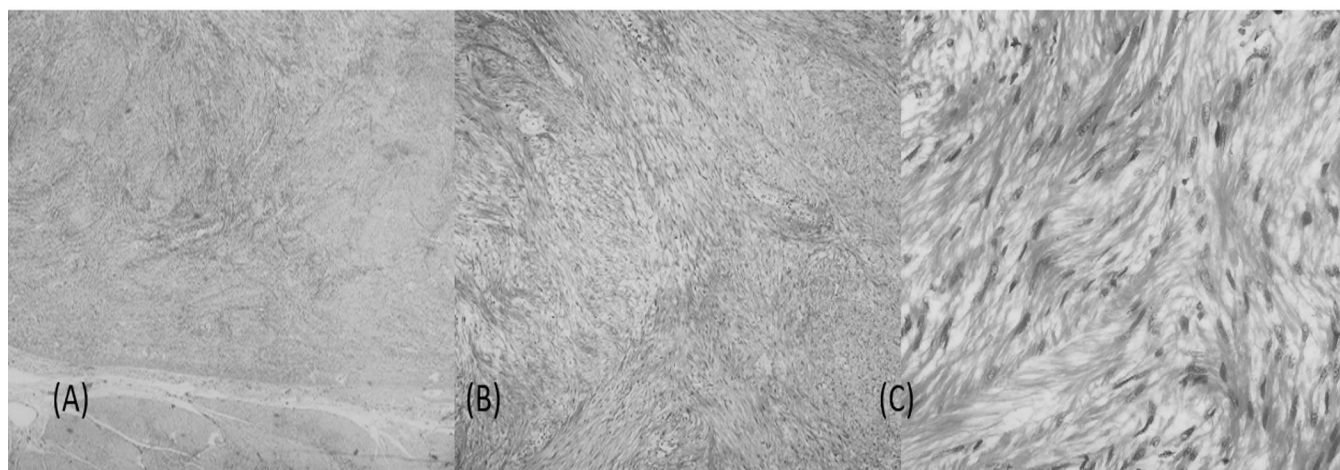


Figure 3. Histopathology results. (A) A sharply circumscribed lesion showing large sheets of intersecting fascicles of spindle cells. The normal bladder muscle is also shown for comparison. (B) Photomicrograph taken at a higher magnification (100x) (C) At 400x magnification, the nuclei of the spindle cells are more apparent. The lesion is observed to have low cellularity, no or little mitotic activity, minimal cytologic atypia, and absent necrosis which favors a benign entity.

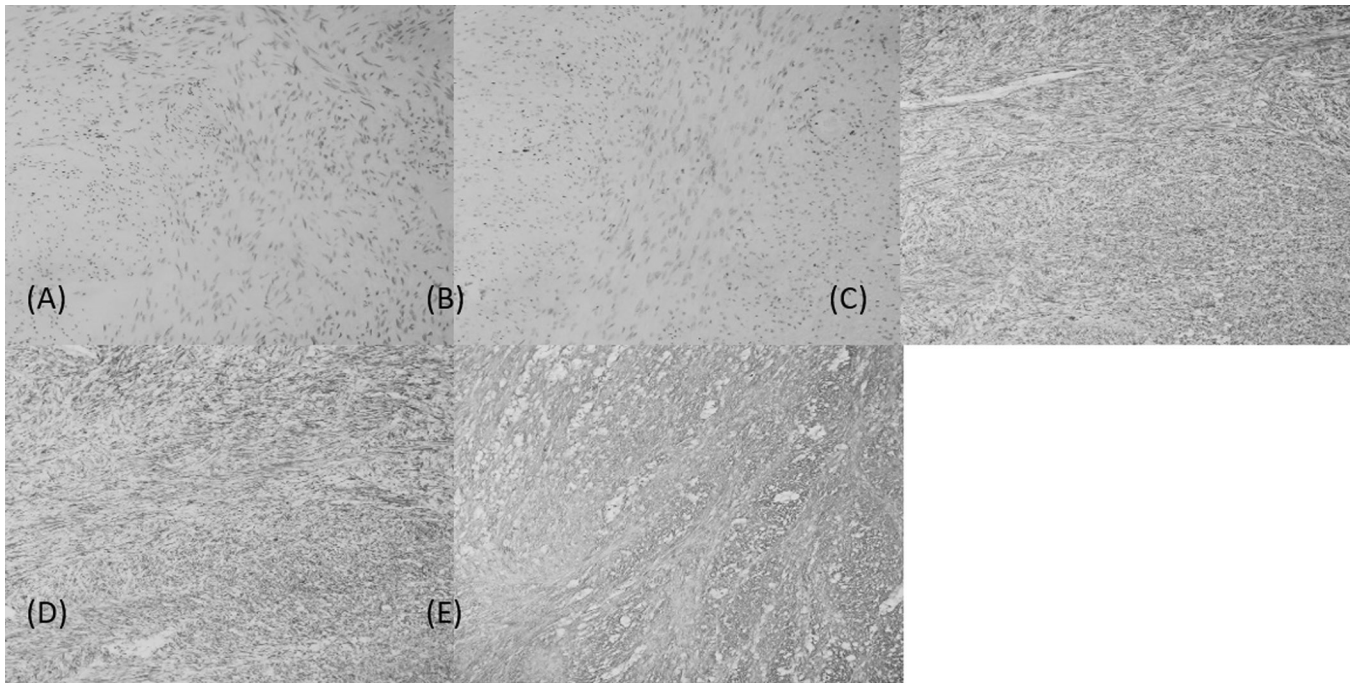


Figure 4. Immunohistochemical staining. A) CD117 – negative, GIST is less likely; B) S100 – negative, schwannoma less likely; C, D, E) Caldesmon, Desmin, SMA – positive, smooth muscle more likely.

with a Foley catheter that was removed seven days post-operatively. On follow-up one month post-operatively, the patient was voiding freely, and did not have any urinary complaints.

Discussion

Leiomyoma of the bladder accounts for 0.43% of all bladder tumors. To date, less than 250 cases of bladder leiomyoma had been reported worldwide.² In 2017, He and colleagues collected data from related literature, from 2012 to 2017, where a total of 21 patients were analyzed. In their study, the incidence of bladder leiomyomas in women was twice as high as in men, and tumors presented at a mean age of 48 years old. Bladder leiomyomas can either be endovesical, intramural or extravesical. The endovesical type is the most common, occurring in 63-86% of cases. This is followed by extravesical type which is seen in 11-30% of cases. The intramural type is seen in 3-7% of cases.¹ The present patient had the intramural type. In a study by Goluboff and

colleagues, 49% of patients with bladder leiomyomas were found to have obstructive symptoms, 30% had irritative symptoms with hematuria, and 20% were asymptomatic.³

Although imaging studies can assist in the diagnosis of bladder leiomyoma, histopathologic examination is still necessary to confirm the diagnosis and rule out a possible malignancy.⁴ Leiomyomas of the urinary bladder appear microscopically similar to uterine leiomyomas and are composed of fascicles of smooth muscle cells with abundant eosinophilic cytoplasm. The nuclei are oval to cigar-shaped, centrally-located, blunt-ended, without significant atypical changes, and with absent mitotic figures. Immunohistochemically, leiomyomas will exhibit strong diffuse immunoreactivity for smooth muscle actin, muscle specific actin, desmin, and vimentin. They will stain negative for cytokeratin and S100 protein.⁴

At present, treatment options for bladder leiomyoma include transurethral resection and surgical excision.² Choice of treatment is primarily determined by the size and anatomic location of the

tumors. For small asymptomatic tumors (<2 cm), conservative management may be done as there is no evidence of malignant transformation for these tumors. For small tumors, that are symptomatic, transurethral resection of bladder tumor (TURBT) can be done. For larger leiomyomas, open resection, such as enucleation or partial cystectomy, is indicated.⁵ In the study done by Goluboff and colleagues, two out of 11 patients who initially underwent TURBT eventually underwent a partial cystectomy for residual disease.³ Meanwhile, in the study by Park et al., two out of the six patients treated initially by TURBT had recurrence of the tumor. One patient underwent repeat TURBT while the other underwent enucleation.⁴ In the case of our patient who had a large, intramural tumor, partial cystectomy was done to completely remove the tumor and to avoid the possibility of tumor recurrence. The pathophysiology of leiomyomas is still incompletely understood and more studies are needed to find out their mechanism of growth.

References

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