

Presentation of bladder leiomyoma concurrent with transitional cell carcinoma

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We report a case of a 46-year-old male who presented to the outpatient urology clinic with an incidental bladder mass. Office cystoscopy revealed two synchronous

tumors of different morphology. Endoscopic resection was performed to remove the smaller, papillary tumor, of which pathology revealed Ta, Grade 1 urothelial carcinoma. A second open resection was performed to remove the second tumor, a benign leiomyoma.

Key Words: urothelial carcinoma, bladder leiomyoma

Introduction

There are few case reports of patients found to have smooth muscle tumors of the bladder. Urothelial carcinoma of the bladder is one of the more common malignancies found in men and women. We report

a case of a patient who presented with concurrent leiomyoma of the bladder, as well as urothelial cell carcinoma. To our knowledge, this is the fourth case report of a patient presenting with two separate tumors of the bladder of different histology.

Case report

The patient is a 46-year-old, African-American male, current smoker, who originally presented with acute on chronic abdominal pain with a known history of chronic pancreatitis. Initial work up included an

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abdominal CT scan that demonstrated an incidental mass within the anterior portion of the urinary bladder. The mass appeared to be endovesical, and was approximately 2 cm in size, Figure 1. There is no history of gross hematuria, or lower urinary tract symptoms. The patient denied any history of urinary tract infection or stone disease. His past medical history was significant for pancreatitis, diabetes, hypertension, and cholelithiasis. The patient was referred for urological consultation based on the CT scan findings.

Physical examination revealed a soft, non-tender abdomen. No masses or hernias were noted. Genitourinary and digital rectal exams were normal. Urinalysis did not reveal any microscopic hematuria. Urine cytology was benign.

Office cystoscopy was performed, and two masses were identified. Upon entering the bladder, a large pedunculated mass was visualized protruding from the posterior wall of the bladder, Figure 2. The mass was completely lined with normal urothelium. A second, papillary lesion was identified along the right lateral wall of the bladder. This lesion was smaller in size, and grossly it appeared to be a low grade urothelial carcinoma. The patient subsequently underwent an elective transurethral resection of his papillary tumor. During the procedure the decision was made to leave the larger mass alone, because of its unusual nature. At the time, there was suspicion that this larger mass might have represented visceral contents (i.e. bowel) protruding through the bladder wall. Once the patient recovered from his TUR, he was scheduled for a second procedure. Initial pathology



Figure 1. CT scan of pelvis demonstrating two bladder masses, one along the right lateral wall, and the second located within the anterior wall.

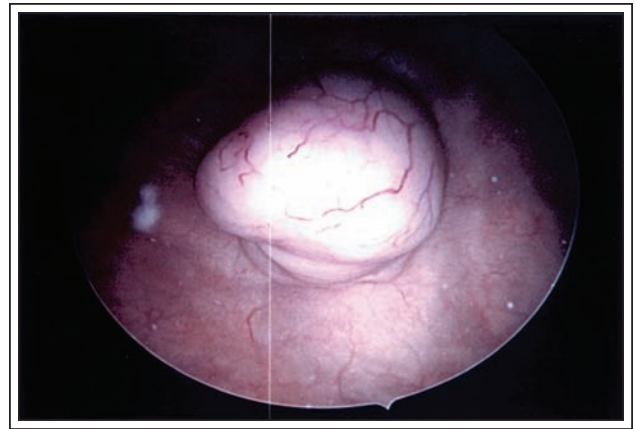


Figure 2. Cystoscopic view of bladder leiomyoma. This tumor was removed via open partial cystectomy.

from the first resection revealed a Ta, Grade 1 urothelial carcinoma. Several weeks later, an open partial cystectomy was performed using a lower abdominal incision. With the use of intraoperative cystoscopy, the large tumor was identified and resected with adequate surgical margins. The patient recovered well and was discharged home with a urethral catheter several days later. Upon office follow up, the patient passed his voiding trial. Pathology revealed leiomyoma, Figure 3.

Pathological findings

Macroscopic examination of the large pedunculated mass reveals a single circumscribed white-tan rubbery tumor measuring 3.2 cm x 2.9 cm x 1.9 cm. The tumor has a uniform bulging whorled appearance characteristic of leiomyoma. Microscopy examination shows that the tumor consists of interlacing fascicles of uniform spindle cells with eosinophilic cytoplasm and elongated blunt-ended nuclei, Figure 3a. Extensive sampling reveals no evidence of pleomorphism, mitosis and necrosis. The tumor cells are positive for smooth muscle actin (SMA) and calponin, and negative for S-100 and CD117, Figure 3b. These immunohistochemical features confirm the smooth muscle nature of the tumor cells and are consistent with the final diagnosis of leiomyoma. Examination of the smaller lesion reveals an exophytic papillary urothelial carcinoma with characteristic cytological and architectural features. An interesting feature is the extension of the tumor cells to the von Brunn's nest underlying the neoplasm. The tumor cells are negative for p53. Only a few umbrella cells are positive for CK20. These immunohistochemical findings are consistent with a low grade lesion.

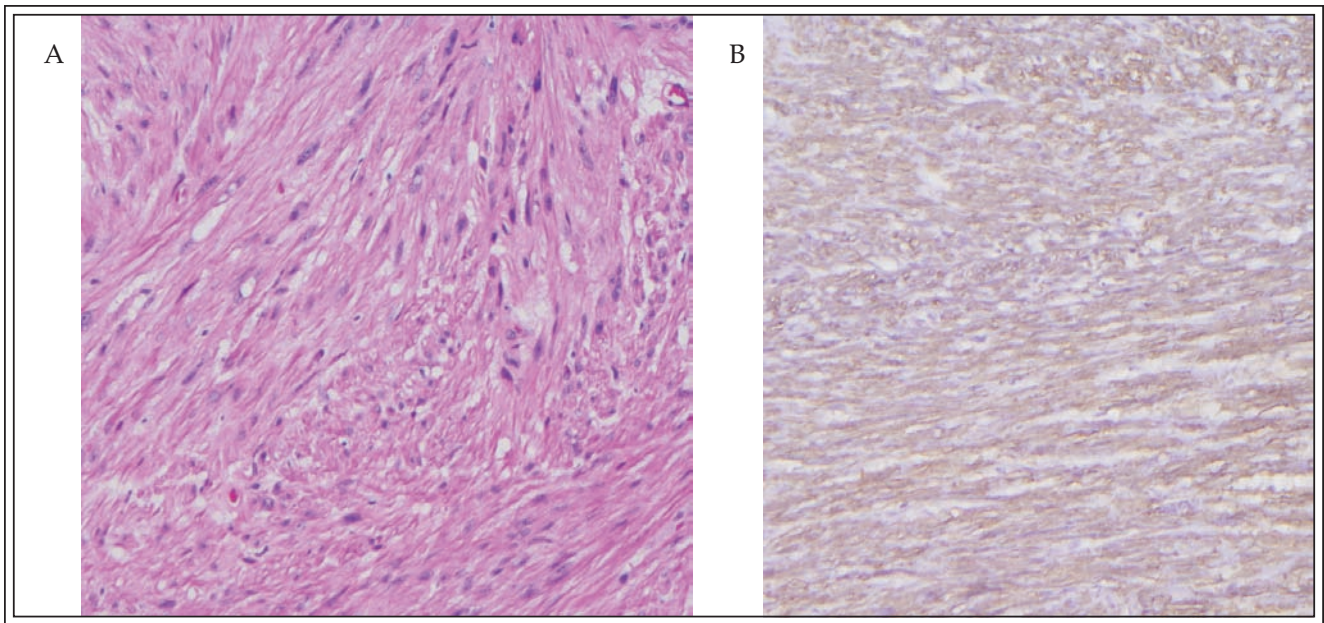


Figure 3. (A) Histopathological examination of the large pedunculated mass shows interlacing fascicles of monotonous spindle shaped cells (H&E, 200X). There is no evidence of mitotic activity, pleomorphism, or necrosis. (B) Immunohistochemical studies reveal positive staining for SMA (200X).

Discussion

Leiomyomas are benign smooth muscle tumors, which occur most frequently in the uterus and gastrointestinal tract. Within the genitourinary system, they are most commonly located in the renal capsule. Reports exist, however, of leiomyomas occurring throughout the entirety of the GU tract. Bladder leiomyomas are relatively uncommon neoplasms, present in less than .43% of all bladder tumors.¹ To date there are only approximately 250 cases of bladder leiomyoma in the literature. In this report we present the case of a man with a coexisting urothelial carcinoma of the bladder and a bladder leiomyoma. To our knowledge there are only three other reports of coexisting urothelial carcinoma and leiomyoma in the literature.²⁻⁴

Although relatively rare overall, leiomyomas comprise 35%-46% of all benign smooth muscle tumors in the bladder, making them the most common type of this tumor. They have a reported male: female ratio of 2:5 and occur most commonly in the fourth to fifth decade of life.⁵ Most tumors of this type present as small sub-centimeter lesions, however reports exist of some tumors which presented as pelvic masses larger than 20 cm.^{1,6} They are often detected incidentally during imaging or surgery for unrelated processes.

Leiomyomas have been shown to be endovesical in 63% of cases, intramural in 7%, and extravescical

in 30%.⁷ Endovesical leiomyomas typically present with obstructive or irritative voiding symptoms, depending on their location in the bladder. Intramural and extravescical lesions are more typically discovered incidentally, or present with mild irritative or obstructive voiding symptoms. They are of the same histology as their uterine and gastrointestinal counterparts. Grossly, sectioning reveals a firm lesion that is well circumscribed and composed of whorls of white and tan tumor. Microscopically, leiomyomas are composed of muscle fascicles of whose cells contain abundant eosinophilic cytoplasm. Nuclei are typically centrally located, oval shaped, and without mitotic figures.⁸

Treatment of leiomyomas must be tailored to each patient individually. Surgery is widely accepted as a cure for these lesions, and there is only one reported recurrence of a bladder leiomyoma in the literature, which was successfully treated with repeat excision.⁸ To our knowledge, there are no reports in the literature of malignant transformation of a leiomyoma. Small tumors can be managed with observation alone if they are asymptomatic. Symptomatic and large lesions are often treated by resection. Most surgeons to date, with 62% of patients undergoing open surgery, have favored open surgery. Transurethral resection is also a possibility, and is performed in approximately 30% of cases.⁹

In conclusion, leiomyomas of the bladder are relatively rare tumors that usually occur as solitary lesions. We report a case of a patient who presented asymptotically and on initial endoscopy was found to have a papillary urothelial carcinoma, as well as a leiomyoma at the dome of the bladder. In general, while cases of multifocal urothelial carcinoma are known to occur, cases of two primary tumors with different histology are exceedingly rare. This is only the fourth report of an urothelial carcinoma and leiomyoma occurring together in the bladder in the literature. □

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