

A yellow-colored lipomatous lesion of the bladder: An unorthodox finding seen upon investigation for microscopic hematuria

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ABSTRACT

Bladder lesions are almost always malignant where only 5% turn out to be benign. Among the benign lesions, bladder lipomas are rarely reported in the literature. Typically, they are incidentally discovered, after endoscopic resection, during an investigation for hematuria or other urinary tract symptoms. This submucosal lesion must be differentiated from its malignant counterparts, such as liposarcoma or pelvic lipomatosis both of which have higher chance of recurrence and invasion when inadequately resected. We hereby report another rare case of an incidentally discovered bladder wall lipoma in a patient presenting with microscopic hematuria.

Keywords: Bladder lipoma; cystoscopy; hematuria; lipomatosis; liposarcoma.

Introduction

Benign bladder lesions constitute less than 5% of all bladder neoplasms. The majority is malignant.^[1] Albeit most bladder tumors are urothelial in origin, around 95%, including transitional cell and squamous cell carcinoma, bladder leiomyomas and lipomas are seldom described in the literature^[2], with leiomyomas being the most frequently reported benign mesenchymal tumor in the urinary bladder.^[3]

Conventional lipomas are the most common benign mesenchymal neoplasms in adults, occurring mostly above the age of 40, with a male predominance.^[3] Most lipomas are superficial. Deep or visceral lipomas are rarely reported. Bladder lipomas are usually present within the submucosa and muscularis propria of the bladder wall.^[4] We hereby report a rare finding of an incidental bladder wall lipoma in a patient that was investigated for microscopic hematuria.

Case presentation

A 61-year-old male non-smoker, known to have diabetes and dyslipidemia, presented with microscopic hematuria on routine yearly checkup. He denied any lower urinary tract symptoms, including dysuria and gross hematuria. Urinalysis done in December 2017, and again in January 2018, showed 10-15 RBC and 8-10 per HPF, respectively. Digital rectal exam showed a smooth prostate, measuring 5x5 cm, and total PSA level of 0.56 ng/mL. Other blood tests, including serum creatinine, were all normal. Patient was not maintained on any antiplatelet or anticoagulation medications at the time of investigation.

Initial investigation included an ultrasound of the kidney and pelvis that showed the presence of a 1cm polypoid lesion, arising from the right posterolateral aspect of the bladder wall (Figure 1). The prostate gland measured 4.3x4.9x3.8 cm (approx. 42 grams), and there was an insignificant post-void residual urine. Both kidneys were normal in echotexture, with

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Figure 1. An ultrasound image of the pelvis showing a 1x1 cm lesion (arrow), originating from the right lateral wall of the bladder



Figure 3. Yellow-colored lipomatous lesion seen in the right lateral wall of the bladder



Figure 2. Bladder wall lipoma surrounded by normal looking urothelial mucosa (arrow)

no evidence of hydronephrosis or stones. Upon these findings, a bladder wall transitional cell carcinoma (TCC) lesion was on top of our list of differential diagnoses.

Accordingly, a cystoscopy was scheduled for better characterization of this lesion. The lesion was identified at the right lateral wall of the bladder with a normal overlying urothelial mucosa (Figure 2). Resection was made by a 24Fr resectoscope revealing a yellow-colored lipomatous lesion (Figure 3) that was well-circumscribed. Deeper resections revealed a normal detrusor muscle, with no evidence of invasiveness (Figure 4). No other lesions were identified within the bladder, and good bilateral ureteral jets were identified. The final pathology came out to be a benign bladder lipoma. On follow-up laboratory examination, no microscopic hematuria was documented.

Discussion

Bladder wall lipomas are scarcely reported in the urology literature, with only a few published case reports. They are incidentally detected upon investigation for gross or microscopic hematuria, or other urinary tract symptoms that ultimately necessitated a cystoscopic examination. Eggner et al.^[5] reported the first case of a bladder lipoma in the English literature, whereas Akan et al.^[1] were first to report a bladder lipoma in a female patient. Lipomas can be located in any bladder site. Grossly, they are characterized by smooth contours, well-circumscribed submucosal lesions with a yellow-colored fat content. The overlying



Figure 4. Complete and deep resection of bladder wall lipoma revealing absence of detrusor muscle involvement

layer is a normal looking urothelial mucosa. These findings are evident by cystoscopy.

There are several hypotheses about how bladder lipomas cause hematuria along with other lower urinary tract symptoms. Kunkle and Mydlo^[6] postulated that voiding symptoms are secondary to local irritation of the bladder wall by the lipomatous lesion. Brown and Jones^[7] reported the first case of a bladder wall lipoma associated with a urinary tract infection. On the other hand, Lang^[8] and val-Bernal et al.^[3] postulated that the lipoma might not be the direct factor causing hematuria, but rather an indirect factor that leads to excoriation of the overlying epithelial tissue, leading to such presentation.

During its resection, urologists must keep in mind a set of malignant differentials that are lipoma-looking lesions with malignant potentials.^[4] Well-differentiated liposarcoma and pelvic lipomatosis should be also considered.

Well-differentiated liposarcoma is histologically characterized by a marked variation in the size of adipocytes, nuclear hyperchromasia with scattered lipoblasts, and bizarre-looking multinucleated stromal cells.^[3,4] Another pathological entity, to keep

in mind, is pelvic Lipomatosis^[9], which increase unencapsulated perivesicular fat with subsequent distortion of the bladder's architecture.^[9] Pelvic lipomatosis was initially described by Engeh in 1959.^[9] They were reported to cause compression of the pelvic viscera including the urethra, and in a smaller subset of patients, the ureters, thus causing hydronephrosis/acute kidney injury.^[9] It must be differentiated from mural lipomas, through its ability to cause extrinsic compression of the bladder and other pelvic organs.^[6]

Retroperitoneal lipomas are also considered, but they are rare. When they do occur, they are mostly renal in origin.^[10] Retroperitoneal lipomas, arising from the bladder, are exceedingly rare.^[10] They have no significant difference in their echogenicities on CT or MRI imaging, prior to surgical resection. Therefore, when resecting a retroperitoneal lipoma, the probability of liposarcoma should be entertained; hence the need to achieve wider resections and negative surgical margins.^[10]

Unlike retroperitoneal lipomas that often recur and possess a malignant transformation potential, thus requiring close post-resection monitoring^[10]; the malignant transformation of a bladder lipoma is rarely reported in the literature^[2], and the time for its recurrence is still lacking.^[2]

Bladder wall lipomas are incidentally discovered during an investigation for hematuria or any other lower urinary tract symptom. Only several cases are present in the literature. Although they do not carry any malignant potential, it must be differentiated from the more malignant counterparts such as pelvic lipomatosis and liposarcoma in order to achieve the best oncological outcome after resection.

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