Excisional biopsy of an extravesicular hemangioma

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1. Introduction

Hemangiomas of the bladder are rare, comprising only 0.6% of bladder masses.1 Numerous reports of intravesical hemangiomas exist in the literature, with the presenting sign of gross hematuria almost universally guiding work-up and eventual diagnosis. However, no reports to date exist of extravesical hemangiomas of the bladder.

We report what we believe to be the first described case of an extravesical bladder mass found to be a benign hemangioma.

2. Case presentation

A 65-year-old man was referred to the urology clinic for evaluation of a non-functioning left kidney and an incidentally discovered solid mass in the right perivesical space. During diagnostic work-up for renal insufficiency secondary to longstanding functional obstruction from a ureteral stricture, a small solid lesion was found on imaging that appeared either abutting the right lateral wall of his bladder or lying close to the wall within the perivesical fat. The patient underwent a cystoscopy with an outside urologist, which was negative for any intraluminal bladder pathology.

The patient was asymptomatic from this pelvic mass, denying gross hematuria, pelvic pain, or systemic symptoms. No mass was palpable on physical examination.

The most recent non-contrast MRI of the pelvis showed the mass measuring 2.8 × 1.1 × 2.1 cm, lying anterior and inferior to the bladder base (Fig. 1). There did appear to be a fat plane between the bladder wall and mass. The mass showed indeterminate signal on T1 weighted and T2-weighted imaging, but was incompletely characterized due to the inability to administer gadolinium because of the patient’s low GFR. In comparison to the lesion on CT two years prior, the mass seemed to have grown slightly.

Given the above findings, and the patient’s need for a nephrectomy regardless of the pelvic mass, it was decided that the patient would undergo a robotic-assisted excision of the pelvic mass at the same time as his laparoscopic simple nephrectomy. The peritoneum was incised just lateral to the right median umbilical ligament, and the perivesical space was entered via blunt dissection and electrocautery. The mass was identified in the perivesical fat as a conglomeration of disorganized blood vessels with few attachments to the adjacent detrusor muscle. The mass was excised with a small amount of surrounding fat and a thin outer layer of the detrusor (Fig. 2). The specimen was then extracted through a
midline incision which had been extended to extract the left kidney.

Final gross surgical pathology revealed a nodular fragment of tan slightly firm tissue measuring $3 \times 2.5 \times 1.3$ cm. Sectioning revealed a brownish lobulated surface coming to within 0.4 cm from surgical resection margin. Microscopic examination revealed thickened vessels with blood clot consistent with hemangioma (Fig. 3).

The patient was discharged on post-operative day one, and returned to clinic on post-operative day eight recovering well with no complications.

3. Discussion

Hemangiomas are benign congenital lesions arising from angioblastic stem cells. The cavernous subtype is most commonly reported in the bladder, however capillary and arteriovenous subtypes are also seen. Most bladder hemangiomas are <3 cm and discovered on the posterior and lateral bladder walls. Hemangiomas of the bladder demonstrate a 3.7:1 male predominance, and are most common in patients <30 years old. However, these masses...
have been reported in patients of all ages, with a mean age of diagnosis in adult patients of 58 years.

Patients with bladder hemangiomas usually present with gross hematuria, though suprapubic pain, irritative urinary symptoms, and acute urinary retention may also occur. Non-specific sessile, multiloculated masses on cystoscopy suggest hemangioma, however, diagnosis must be confirmed by biopsy to rule out endometriosis, melanoma, and sarcomas. Lack of cytologic atypia excludes angiosarcoma and Kaposi sarcoma, while lack of inflammation discerns the vascular proliferation from papillary polypoid cystitis and granulation tissue. Ultrasound, pelvic arteriography, CT and MRI may help with diagnosis, management and treatment selection. As evidenced in our patient, extravesical masses may be anatomically inaccessible by cystoscope, making CT/MRI surveillance even important at this location. Hemangiomas appear as “solid, focal, hyper-vascular, sessile intramural masses” with hyper-intensity on T2 and hypo-intensity on T1 MRI. Intravesicular and transmural masses may also be seen as filling defects on IV pyelography. In our patient, renal insufficiency prevented the use of contrast dye, which limited our imaging abilities and further indicated a need for excisional biopsy. As the differential diagnosis of perivesical masses includes several malignant neoplasms like angiosarcoma, rhabdomyosarcoma, leiomyosarcoma, lymphoma and malignant fibrous histiocytoma, we felt our inability to sufficiently characterize the mass on imaging required excisional biopsy.

Small hemangiomas may be monitored in asymptomatic patients. If symptoms arise (i.e. hematuria, pain, etc), surgery may be required. Endoscopic management can be offered for smaller hemangiomas that are accessible transvesically. For larger masses, laser ablation has been reported to reduce the risk of bleeding compared to traditional electrosurgical resection. Surgical excision of the hemangioma with or without concomitant partial cystectomy is the most definitive way to remove the mass and can be performed via open or minimally invasive approaches.

This case was unique in that the mass was not accessible transvesically. Percutaneous biopsy could have been considered, but the mass was relatively small and may have been challenging to target even with image guidance. Moreover, bleeding from the hemangioma could have occurred, although it would have likely been limited as the mass completely resided within the prevesicals space. Minimally invasive excisional biopsy resulted in complete excision of the hemangioma with minimal patient morbidity and should be considered in cases of a perivesical mass of unknown origin.

4. Conclusion

Hemangiomas are rare benign masses of the urinary bladder. Most case reports have described intravesical hemangiomas, which can make diagnosis and management attainable through a transvesical endoscopic approach. This case presents a hemangioma arising from the outer half of the bladder and found incidentally on imaging. Pelvic imaging plays an important role in the diagnosis of masses within this location. Excisional biopsy is a safe way to approach such lesions and can be accomplished through a minimally invasive approach with minimal patient morbidity.

Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.eucr.2017.11.019.

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