

A Large Urinary Bladder Hemangioma Mimicking Urachal Cancer: A Case Report and Literature Review



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Urinary bladder hemangiomas are rare, especially in children and adolescents. We present a case of a 17-year-old young man with persistent gross hematuria for 1 month. Computed tomography revealed a 3.6 cm mass on the superior anterior wall of the urinary bladder, which was highly suspected as an urachal tumor. We carried out an en bloc resection of the urachus and bladder tumor. The pathologic report indicated a cavernous hemangioma of the urinary bladder. No tumor recurrence or bleeding was found during the 2-year follow-up. Urinary bladder hemangioma is an important differential diagnosis in young patients with hematuria. UROLOGY 123: 224–226, 2019. © 2018 Elsevier Inc.

Hemangiomas of the urinary bladder are rare and account for 0.6% of all bladder tumors occurring in all ages, but they are even less common during childhood and adolescence.¹ In this report, we present a rare case of a 17-year-old young man with a sudden onset of gross hematuria for one month. Urachal tumors were suspected based on imaging study. En bloc resection of the tumor was performed, and the final pathologic diagnosis was of a cavernous hemangioma of the urinary bladder.

CASE REPORT

A 17-year-old young man presented with a sudden onset of painless gross hematuria for one month. Intravenous urography showed coarse trabeculation of the urinary bladder, and cystoscopy revealed a bluish ovoid tumor with blood clots on the anterior wall (Fig. 1A). We performed a transurethral resection of the bladder tumor (partial resection), and the initial pathologic report showed chronic inflammation. Abdominal computed tomography (CT) indicated a 3.6 cm mass on the superior anterior wall of the urinary bladder, which was suspected as urachal cancer (Fig. 1B). Under suspicion of urachal cancer, en bloc resection of the urachus and bladder tumor with adequate margins was performed with open method surgery (Fig. 2B). The final pathologic report indicated a cavernous hemangioma of the urinary bladder

(an ill-defined, firm, and brown tumor measuring $3.5 \times 3 \times 2.3$ cm in size was seen outside the bladder wall in the urachus region.) (Fig. 2B-D). Cystoscopy and abdominal CT examination were repeated at 6, 12, and 24 months and showed no local recurrence within two years (Fig. 3).

DISCUSSION

Cheng et al² reported on 19 subjects of bladder hemangioma over a 66-year period. The mean age of the patients was 58 years, with a male-to-female ratio of 3.7:1. The tumors were mostly located in the posterior and lateral walls, and the median size of the tumors was 0.7 cm.² Imaging findings of urachal cancer usually indicate a mid-line mass above the anterosuperior aspect of the bladder.² We reported a case of a 17-year-old male with a large bladder hemangioma, 3.6 cm in size, located on the bladder anterior wall and in the urachal area. Urachal cancer was highly suspected. Our case was compatible with the male predominance of this disease. Because a urachal tumor was highly suspected and the tumor was large, partial cystectomy with en bloc resection of the urachus was performed for tumor debulking and bladder function preservation.

Bladder hemangiomas are rare but still represent the most common benign tumors in children.³ For children with bladder hemangioma, systemic evaluation is highly recommended due to its coexistence with cutaneous hemangiomas, varicose veins, and other diseases, such as Sturge-Weber syndrome and Klippel-Trenaunay-Weber syndrome.⁴ The results of physical examination of our patient were grossly normal with no cutaneous hemangioma or palpable scrotal varicocele. Only bilateral grade I varicoceles were noted by scrotal sonography.

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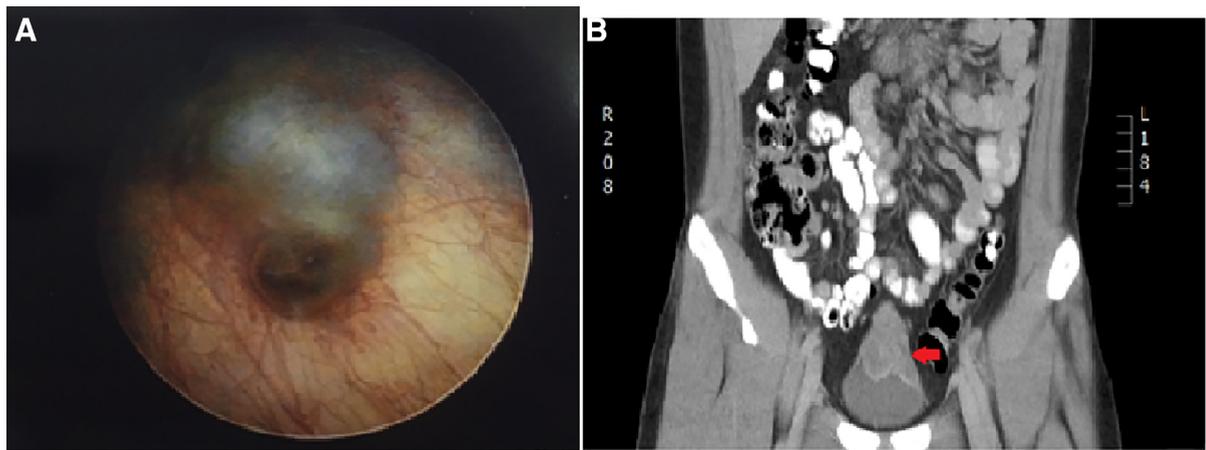


Figure 1. (A) Reddish and bluish tumor under cystoscopic examination. (B) The red arrow points to a 3.6 cm mass (red arrow) on the superior anterior wall of the urinary bladder and urachus. (Color version available online.)

Histologically, bladder hemangiomas can be classified into cavernous, capillary, and arteriovenous types, with the cavernous type being the most common.⁵ The histological depth of a bladder hemangioma may extend to the

submucosal layer or even to the muscular layer, or perivesical tissues.⁶ Bladder hemangiomas are histologically similar to hemangiomas found at other sites and are composed of numerous proliferative capillaries mixed with

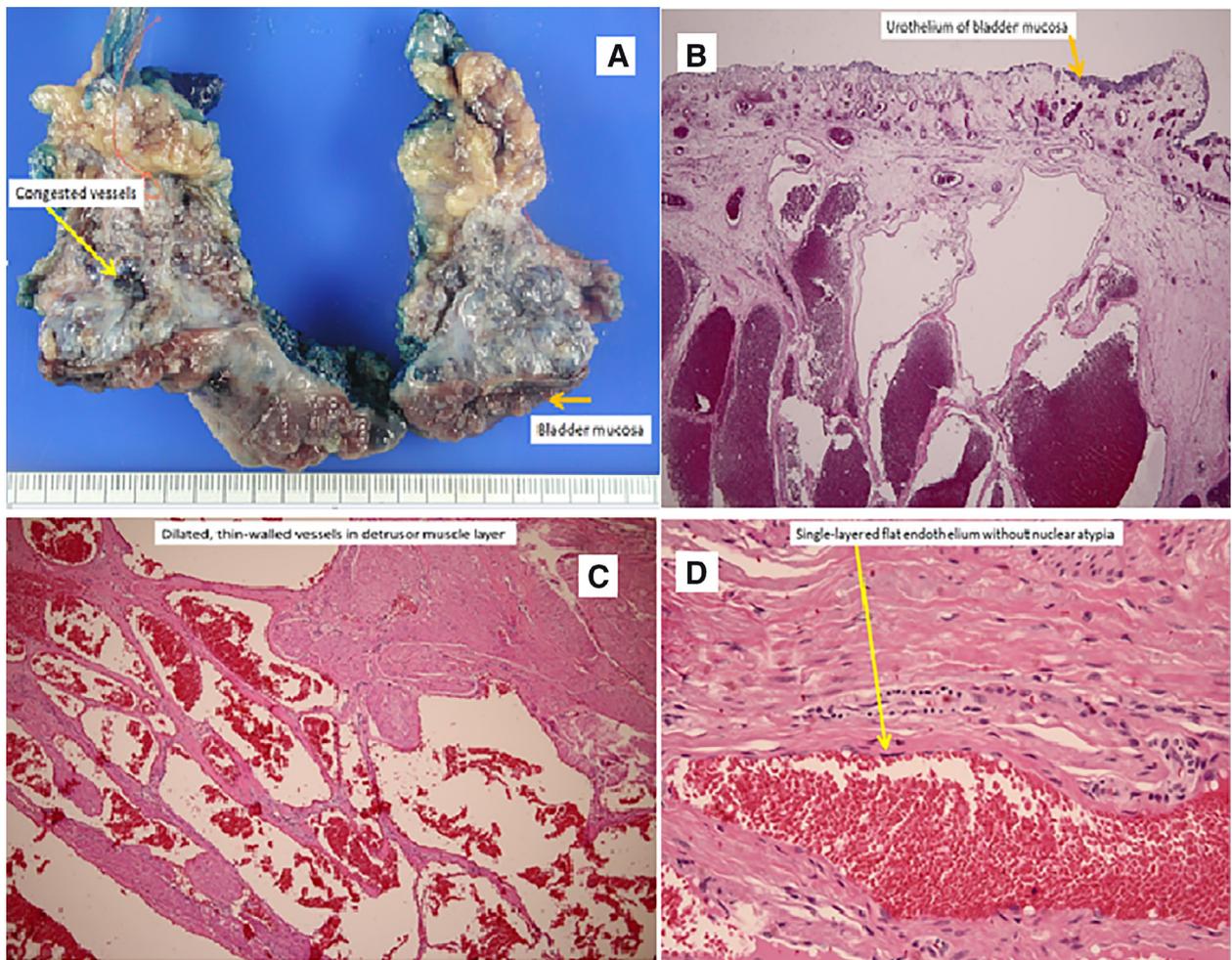


Figure 2. (A) Specimen of the en bloc resected tumor including congested vessels (yellow arrow) and the urinary bladder (brown arrow). (B) Hematoxylin and eosin (H&E) staining showing the urothelium of the bladder mucosa in the resected specimens (brown arrow, 40×). (C) H&E staining showing dilated thin-walled vessels in the detrusor muscle layer (100×). (D) H&E staining showing a single-layer flat endothelium with no nuclear atypia (yellow arrow, 200×). (Color version available online.)

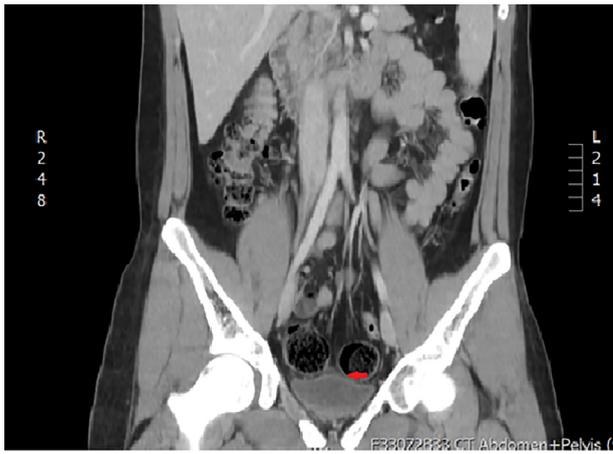


Figure 3. Abdominal and pelvic computed tomography scan showing the lack of recurrent hemangioma (red arrow) at the 2-year follow-up. (Color version available online.)

thin-walled, dilated blood-filled vessels lined with flattened endothelium. The vessels are sometimes thickened by adventitial fibrosis.¹ Microscopically, our case appeared as a cavernous hemangioma with congested, variable sized, thin-walled vessels on the bladder wall and in the urachal region. The management of patients with a urinary bladder hemangioma is controversial, and the factors to consider include the size and degree of penetration.⁷ Treatment strategies include observation, transurethral resection, electrocoagulation, radiation, systemic steroid administration, sclerosing agent injection, and partial or complete cystectomy.⁸ Due to persistent hematuria and the large tumor size of the suspected urachus tumor, we used partial cystectomy as the surgical intervention.

Postoperative follow-up is important for detecting tumor recurrence or residual disease. Cheng et al reported on 19 subjects of a bladder hemangioma, and only 1 patient

had accepted partial cystectomy. No recurrent tumor was noted during a mean follow-up of 6.9 years.² We arranged flexible cystoscopy and CT to detect the recurrence of the bladder hemangioma. No tumor recurrence or hematuria was found at the outpatient department.

CONCLUSION

Hematuria can be caused by many factors, and bladder tumors are rare in pediatric and adolescent patients. The possibility of urinary bladder hemangiomas should be considered, and their prognosis is excellent.

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