

Arteriovenous Hemangioma of the Urinary Bladder Following Intravesical Treatment

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INTRODUCTION

Hemangioma of the urinary bladder is a very rare benign tumor believed to have congenital origin; however, it can present at any age, being relatively more common in adulthood.⁽¹⁾ To the best of our knowledge, few cases of the urinary bladder hemangioma have been documented.⁽¹⁾ We report a case of a vesical arteriovenous hemangioma in a patient with a history of transurethral resection of the bladder tumor (TUR-BT) and intravesical installation of Bacillus Calmette-Guerin (BCG).

CASE REPORT

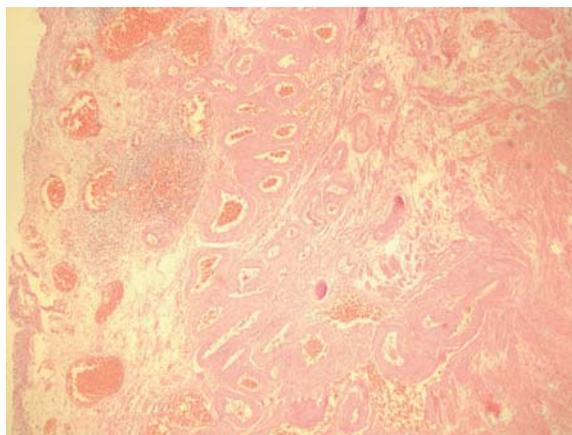
A 66-year-old man was hospitalized with painless macroscopic hematuria. He had a history of TUR-BT two years earlier. He also received intravesical BCG induction therapy after developing a recurrence with high grade stage T1 tumor after 1 year. No recurrence was reported after BCG treatment.

Physical examination showed no abnormal findings. He had no voiding difficulty or pain. Initial blood work-up was also normal; however, urinalysis showed 40 to

50 red blood cells and 2 to 4 white blood cells per high power field.

Cystoscopy was planned to rule out recurrent bladder tumor and 1 cm × 0.8 cm, reddish, exophytic mass with a partial necrotic surface was detected above the left ureteral orifice. The scarred area due to the former resection was noted on the right side. Transurethral resection of the mass and coagulation was performed using 26F resectoscope without complication.

Histological examination revealed arteriovenous hemangioma without any evidence of malignancy (Figure). Detailed physical examination was repeated to confirm that there was no other visible hemangioma in the body. Hematuria ceased after resection and there was no recurrence during



Histological examination shows arteriovenous hemangioma without any evidence of malignancy.

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the 18-month follow-up period.

DISCUSSION

Hemangioma is histologically classified as cavernous, capillary, or arteriovenous, and the cavernous type is the most common one.⁽²⁾ Several case reports showed a wide age distribution, but the majority is middle-aged.^(1,3) The urinary bladder is an uncommon location for hemangioma.⁽¹⁻³⁾

The largest series of the bladder hemangioma was published by Cheng and colleagues. They reported 19 subjects during a 66-year period. The mean age of the patients was 58 years and male to female ratio was 3.7:1. The mean tumor size was 1.1 cm (range, 0.2 to 3 cm) and only 2 patients had a tumor with the muscle wall involvement.⁽¹⁾

Hendry and Vinnicombe reviewed 32 patients younger than 20 years old that had been reported up to 1971. Only 22 patients had bladder hemangioma that was proven histologically. In most of the subjects, hemangioma involved the muscular layer of the bladder; especially if the tumor was large.⁽⁴⁾

Angiosarcoma and Kaposi sarcoma should be considered in the differential diagnosis of the bladder hemangioma, which exhibit less cytologic atypia.⁽²⁾ Multiple bladder hemangiomas may be associated with Klippel-Weber syndrome.⁽⁵⁾

The most common presenting symptom of a bladder hemangioma is gross hematuria, which rarely causes hemodynamic complications, and may be accompanied by voiding symptoms or abdominal pain. Endoscopic view of hemangioma is nonspecific. Only 16% of the cases are suspected clinically before histological diagnose.⁽¹⁾ Usually, the tumor is a small (< 3 cm), sessile, and blue mass.⁽²⁾

Transurethral biopsy with fulguration provides diagnose and treatment.^(1,3) Laser treatment was also reported successful.⁽⁵⁾ For larger tumors, partial or total cystectomy may be required.⁽¹⁾ In our patient, the lesion was thought to be a recurrent bladder tumor and was resected

transurethrally. Macroscopic hematuria disappeared after surgery and there was no recurrent bleeding or mass during the follow-up period.

To our knowledge, there is no published report on the association between intravesical BCG immunotherapy and the bladder hemangioma. Bacillus Calmette-Guerin treatment is known to cause chronic inflammation and granulomas.⁽⁶⁾ Recent studies depict a close relationship between inflammation and vascular endothelial growth factor production,^(7,8) which plays an important role in the pathological change of hemangiomas by promoting endothelial cell proliferation and angiogenesis.⁽⁹⁾ In light of these data, we think that BCG therapy and consequent increase of vascular endothelial growth factor might be the predisposing factors for formation of the bladder hemangioma in this patient.

To the best of our knowledge, this is the first report on the bladder hemangioma proved to develop after intravesical treatment, TUR-BT and BCG. This case suggests, but does not prove, an association between intravesical BCG immunotherapy and the bladder hemangioma. Further studies are needed to clarify this association.

CONFLICT OF INTEREST

None declared.

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