A rare cause of hematuria in children: arteriovenous hemangioma of the bladder

Yusuf Kibar[1], Mete Kilciler[1], Hasan Cem Irkilata[1], Fikret Erdemir[2], Murat Zor[1], Onder Onguru[3], Murat Dayanc[1]

[1]Department of Urology, Gülhane Military Medical Academy, Ankara, Turkey
[2]Department of Urology, Gaziosmanpasa University School of Medicine, Tokat, Turkey
[3]Department of Pathology, Gülhane Military Medical Academy, Ankara, Turkey

KEY WORDS

bladder ◗ hemangioma ◗ childhood

ABSTRACT

Bladder hemangiomas are exceedingly rare benign tumors of the urinary bladder that account for 0.6% of bladder tumors [1]. Although this tumor can occur at any age, hemangioma in childhood is relatively rare [2]. Hemangiomas are classified as cavernous, capillary, or arteriovenous. Most hemangiomas of the bladder are of the cavernous type. In the literature arteriovenous hemangiomas have been described only in adults [3]. We report a case of arteriovenous hemangioma of the urinary bladder in a 14-year-old young boy. To our knowledge, this is the first reported case of an arteriovenous hemangioma in a child causing macroscopic hematuria.

INTRODUCTION

Bladder hemangioma is a benign mesenchymal tumor [1]. We report a case of arteriovenous hemangioma of the urinary bladder in a 14-year-old young boy. To our knowledge, this is the first reported case of arteriovenous hemangioma in a child causing macroscopic hematuria.

CASE REPORT

A 14- year-old boy was admitted to our clinic with a 6 month history of suprapubic discomfort, urinary frequency, and painless intermittent macroscopic hematuria. During the last two days these symptoms became worse. He had no history of recurrent urinary tract infection, calculi, dysuria, or urinary incontinence. Systemic examination was unremarkable and no concomitant cutaneous hemangiomas were detected on physical examination. Although routine biochemical analyses were normal, urinalysis revealed macroscopic hematuria. There was no abnormality on intravenous urogram. Ultrasonography (USG) demonstrated 3 solid masses localized at the bladder base and left lateral wall. Magnetic resonance confirmed these lesions (Fig. 1). At cystoscopy a 1 x 1 and two 2 x 3 solid reddish blue and gray easily-bleeding masses were detected and biopsies were performed. Holmium laser application on the bladder hemangioma was carried out. The laser was used at 6 W with a 400 nm fiber and was applied in contact with the bladder mucosa until vascular sclerosis was achieved. The patient did not present with hematuria in 6 months follow-up. The specimen was pathologically diagnosed as arteriovenous hemangioma of the bladder (Fig. 2).

DISCUSSION

Hemangiomas are exceedingly rare benign tumors of the urinary bladder that account for 0.6% of bladder tumors. It most likely is congenital in origin, arising from embryonic angioblastic stem cells. Although this tumor can occur at any age, hemangioma in childhood is relatively rare [2].

Hemangiomas are classified as cavernous, capillary, or arteriovenous. Most hemangiomas of the bladder are solitary and of the cavernous type, occurring on the posterior wall or dome. In the literature arteriovenous hemangiomas have been described only in adults [3]. To our knowledge this is the first reported case of arteriovenous hemangioma in a child.

It may coexist with a cutaneous hemangioma or be associated with the Sturge-Weber syndrome or the Klippel-Trenaunay-Weber syndrome and systemic angiomatosis. For this reason systemic evaluation in these patients is highly recommended [4]. Systemic examination was unremarkable in our case.

The tumor usually presents as an incidental finding during workup for hematuria and/or voiding symptoms. The most common symptom is intermittent painless macroscopic hematuria as our case; other symptoms include irritative voiding symptoms,

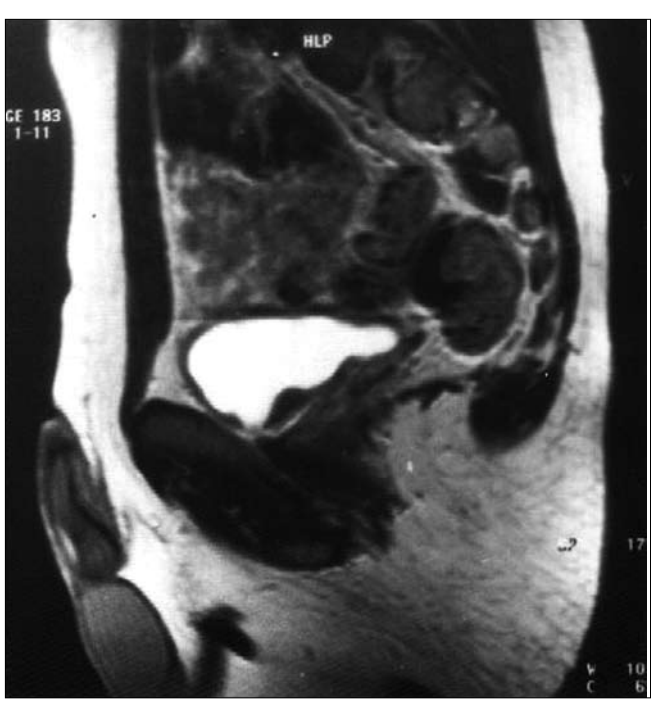

Fig. 1. Magnetic resonance imaging reveals a solid 2 x 3 cm tumor at the base of the bladder.

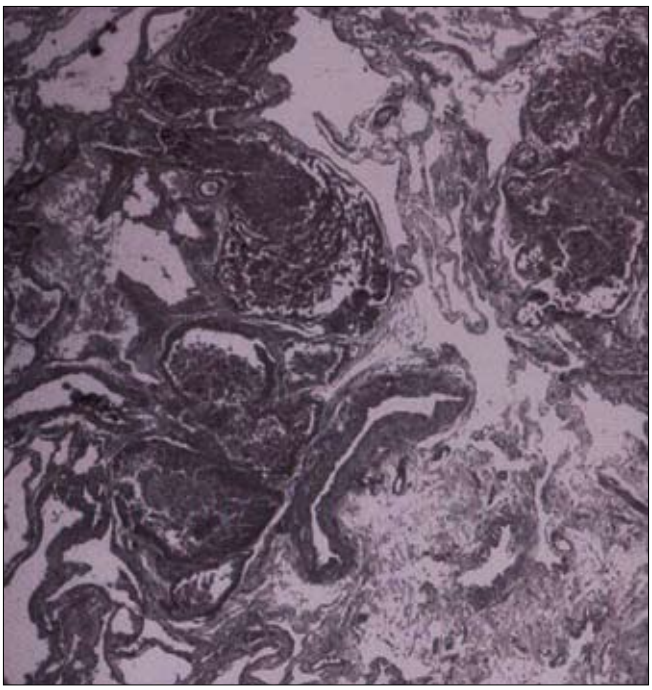

Fig. 2. Histopathological examination shows anastomosing vascular channels with irregularity in size, shape, and degree of muscularization (Hematoxylin-Eosin x 50).

bloody urethral discharge, urinary retention, as well as suprapubic and abdominal pain [5].

The lesions are usually solitary, ranging in size between 0.5 and 10 cm. In most cases the tumors measure 1 to 2 cm and they are usually sessile, with a smooth or irregular surface. Although they have predilection for the dome, posterior wall, and trigone of the bladder, the localizations of the lesions in our case were bladder base and left lateral wall.

The radiological evaluation of the bladder hemangiomas is based upon USG, computerized tomography, and intravenous pyelogram; recently MRI was found useful in evaluating the tumor character and its extent. Angiography can be also used for diagnosis [6].

The management of patients with hemangioma is controversial and numerous therapeutic approaches are available. Hemangiomas have been managed by observation, transurethral resection and electrocoagulation, the injection of sclerosing agents, radiation, systemic steroids, interferon-α-2 therapy and laser therapy [7]. Asymptomatic hemangiomas do not require treatment. Small superficial lesions have been successfully removed transurethrally. We performed laser ablation successfully. Partial cystectomy may be considered only in certain cases when the lesion is localized.

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Correspondence

Murat Zor
GATA Urology Clinic
Etlik, 06010
Ankara, Turkey
phone: +90 312 304 5610
murat804@yahoo.com