

## ISOLATED VASCULITIS OF THE BLADDER

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## ABSTRACT

We describe a case of isolated vasculitis involving the bladder that presented with severe irritative voiding and hematuria. This case presented a diagnostic problem, because malignancy was suspected, but not confirmed by biopsies. Once the vasculitis was diagnosed, secondary systemic causes were excluded, and successful treatment was subsequently undertaken using systemic steroids. It is important to differentiate this rare pathologic entity from the much more frequent tumors of the bladder because the treatment is medical rather than surgical. *UROLOGY* 65: 797.e8–797.e10, 2005. © 2005 Elsevier Inc.

The vasculitides are a group of syndromes that are often difficult to define because of their complex clinicopathologic features.<sup>1</sup> They are typically systemic conditions and, if the genitourinary system is involved, preferentially affect the kidneys and testes—only rarely does vasculitis involve the urinary bladder. Published studies have described only case reports, and these were usually in association with a systemic vasculitic process.<sup>2–6</sup>

## CASE REPORT

A 59-year-old man, with a prior occupational exposure to explosives, presented to us with several months of irritative voiding symptoms and hematuria, culminating in intractable urgency and incontinence. Significant constitutional symptoms, including a 12-kg weight loss, intermittent sweats, fatigue, and malaise, were also described. He was diabetic and hypertensive and complained of long-standing exertional angina. His examination findings were normal, other than microscopic hematuria and sterile pyuria. His blood tests were normal, other than an elevated erythrocyte sedimentation rate (136 mm/hr, normal less than 20) and C-reactive protein (58 mg/L, normal less than 10).

The initial computed tomography scan (Fig. 1A) showed marked bladder wall thickening and raised the suspicion of malignancy. Cystoscopy revealed

a small-capacity (50 mL) bladder with grossly abnormal mucosa. However, biopsies (Fig. 2A) demonstrated a necrotizing vasculitis involving small and large vessels, rather than neoplasia. A full vasculitic screen, including antinuclear antibody, rheumatoid factor, antinuclear cytoplasmic antibody, and hepatitis B and C serology, was subsequently found to be negative. A testicular biopsy, undertaken to exclude systemic vasculitis, was also normal.

The patient was administered high-dose corticosteroids (prednisolone 50 mg/day for 3 weeks, with dose reduction thereafter), and his symptoms improved within 3 to 4 days. After 6 weeks, he was voiding normally, and the inflammatory markers had normalized (erythrocyte sedimentation rate 6 mm/hr, C-reactive protein 3 mg/L). Computed tomography (Fig. 1B) showed a marked decrease in bladder thickness compared with the previous scan. Cystoscopically, his bladder capacity was 250 mL, the mucosal appearance was normal, and examination of biopsy specimens showed resolving vasculitis (Fig. 2B). The steroids were weaned during an additional 6-week period. At the 3-month review, he was well and symptom free.

## COMMENT

Vasculitis of the urinary bladder is a rare condition, especially in isolation. The mode of presentation is usually irritative voiding symptoms,<sup>3,4</sup> as in this case, and the radiologic and cystoscopic findings are also nonspecific. The diagnosis is made by histologic examination of bladder biopsies, which also serve to exclude other differential diagnoses, especially malignancy. After a thorough investigation, our patient had no objective evidence of a

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A



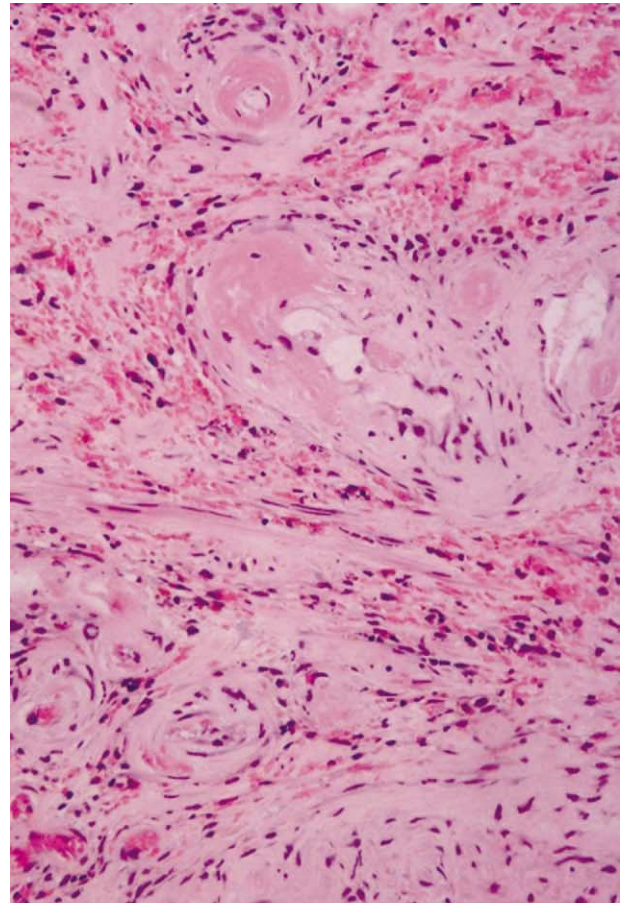
B

FIGURE 1. Computed tomography images showing (A) thickened bladder wall at presentation and (B) reduction in bladder wall thickness after treatment.

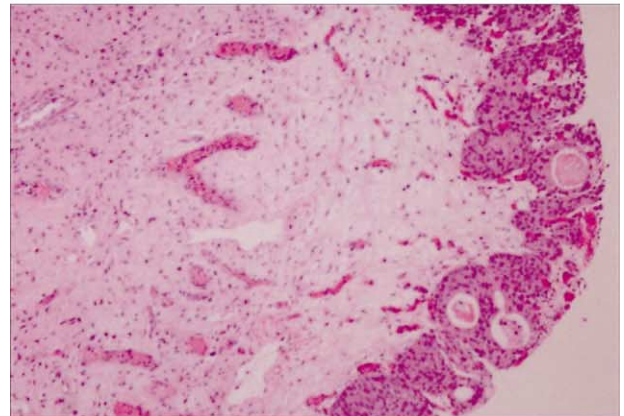
systemic vasculitic disease, which can be diagnosed by serology, angiography, or visceral biopsy findings.<sup>1</sup> Interestingly, 86% of male patients with polyarteritis nodosa have testicular involvement,<sup>7</sup> but our patient's testicular biopsy was negative.

Vasculitis is seen rarely in the bladder, but it is very much more prevalent in the kidney. This may reflect an innate "protective" mechanism in the bladder or that the clinical presentation of frequency and dysuria is nonspecific and that hematuria in a patient with vasculitis is usually attributed to a renal source without fully investigating the bladder.<sup>8</sup>

Recognizing bladder involvement in the vasculitis process is important because early treatment may reduce the need for reconstructive procedures by preserving bladder function. Furthermore, it may also identify a potentially reversible cause of renal impairment.<sup>2</sup> Moreover, any patient with ongoing macroscopic hematuria should be evaluated for neoplastic processes of the genitourinary tract, especially because many of these patients may have



A



B

FIGURE 2. Photomicrographs showing (A) necrotizing vasculitis of bladder wall and (B) resolving vasculitis after treatment. Hematoxylin-eosin stain, original magnification  $\times 400$ .

had cyclophosphamide in the course of their treatment.<sup>9</sup>

Our patient was treated with high-dose corticosteroids with resultant dramatic improvement, consistent with other described cases.<sup>2-5,8</sup> Surgical treatment should be reserved for cases in which bladder fibrosis and severe impairment of bladder

compliance has occurred. Early diagnosis and treatment should obviate this need.

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