

Inflammatory Pseudotumor of Urinary Bladder

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Abstract

A previously healthy 44-year-old male was admitted with the chief complaint of intermittent gross hematuria. On initial ultrasonographic and CT examination, a grossly protruding intravesical tumor was noted and, under the impression of a malignant bladder tumor, transurethral resection was performed. The histological findings were spindle cells with elongated cytoplasm with rare mitotic figures distributed in myxoid stroma, consistent with diagnosis of inflammatory pseudotumor of the bladder. The benign nature of this tumor warrants conservative surgical management, usually consisting of transurethral resection or partial cystectomy. No reports of metastasis have been reported following complete excision. Therefore, any suspicion and recognition of this entity is imperative to avoid performing an irreversible radical procedure.

Key Words: Hematuria, bladder, inflammatory pseudotumor

INTRODUCTION

The inflammatory pseudotumor (IPT) or pseudo-sarcomatous fibromyxoid tumor (PFMT) of the bladder, first reported by Roth in 1980, is a benign fibromuscular tumorous growth which is clinically and radiologically difficult to distinguish from malignant sarcoma or even, in some cases, transitional cell tumors of the bladder. Since its first report, over 32 cases have so far been documented. However, its exact origin and clinicopathologic nature is still not completely understood. We report a new case of inflammatory pseudotumor occurring in a middle-aged male which was initially considered an invasive transitional cell carcinoma of the bladder.

CASE REPORT

A previously healthy 44-year-old oriental male presented with the chief complaint of intermittently recurrent gross hematuria accompanied by clots and

weight loss of about 6 kg during the preceding 1-month period. He also complained of frequency and mild abdominal discomfort during urination. He had no history of urinary tract infection, instrumentation, trauma, or other urological problems. On abdominal ultrasound examination, a polypoid mass-like protruberance was noted on the right posterolateral wall of the urinary bladder. On cystoscopic examination, there was a broad-based child-fist-sized nonpapillary mass lesion on the posterior wall of the bladder. Otherwise, there was no abnormal intravesical finding. An abdominopelvic computerized tomography (CT) was conducted and it confirmed the presence of an endophytic nodular mass arising from the posterior bladder wall without perivesical involvement or lymphadenopathy (Fig. 1). Under the impression of a primary bladder tumor, the patient was admitted and under spinal anaesthesia, a transurethral resection of the bladder mass was performed. The main mass was completely resected. On histological examination, spindle-shaped cells were seen distributed in myxoid stroma with plentiful mononuclear cell infiltration (Fig. 2). Nuclear pleomorphism was present, but mitotic figures were rare with a 1/10 HPF ratio. Immunohistochemical stains were positive for vimentin, desmin and smooth muscle actin. Staining for myoglobin and S-100 protein were both negative. The mass was confined within the bladder muscle proper. Following the operation, the voiding symptoms disappeared. No sign of recurrence was noted

Received April 24, 1999

Accepted November 9, 1999

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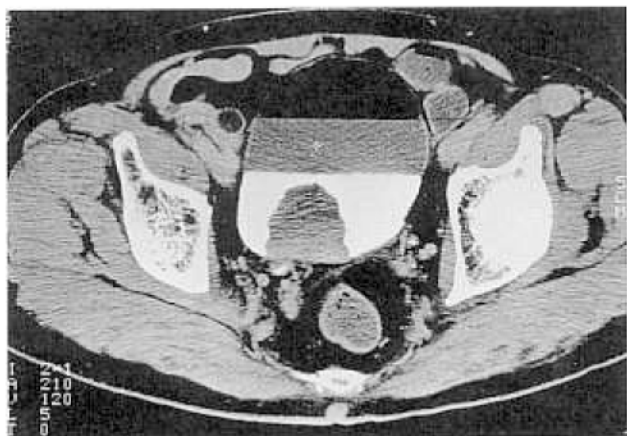


Fig. 1. CT of pelvis demonstrates posterior bladder mass with smooth contour. No perivesical involvement is seen.

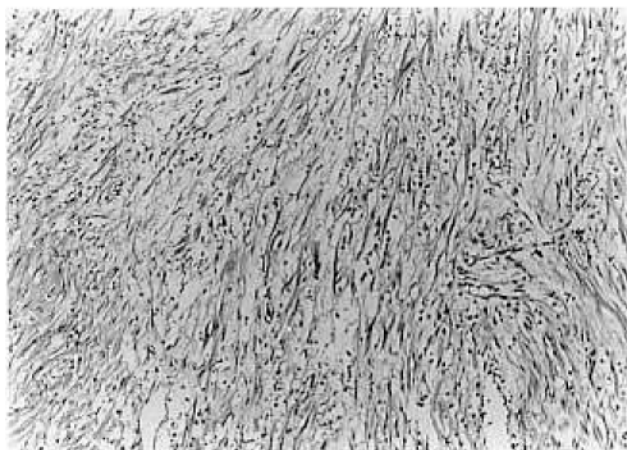


Fig. 2. Exuberant proliferation of spindle cells on a background of loose myxoid stroma and mononuclear inflammatory cells are seen ($\times 100$).

at 12 months follow-up.

DISCUSSION

The majority of non-transitional cell epithelial neoplasia of the bladder are leiomyomas or leiomyosarcomas originating from the muscle layer. The first description of a sarcomatous lesion which turned out to be a benign proliferative myofibroblastic tumor was in 1980 by Roth, in a female with recurrent cystitis displaying an ulcerated spindle cell tumor. In 1985, Nochomovitz and Orenstein reported 2 cases of benign mesenchymal tumor arising in bladder

initially clinically diagnosed as sarcomas which histologically resembled nodular fasciitis but without malignant features. They named this entity inflammatory pseudotumor of the bladder.¹ Ro et al. in 1986 performed a detailed immunochemical and clinicopathologic study of the disease and used the term "pseudosarcomatous fibromyxoid tumor" to emphasize the histopathologic feature of these lesions.²

The lesions are usually composed of spindle cells with elongated cytoplasm sparsely embedded in myxoid stroma prominent in vascularity. The stroma are rich in acid-mucopolysaccharides stained intensely by alcian blue, which is sensitive to hyaluronidase. Diffuse infiltration of acute or chronic inflammatory cells can usually be seen. Mitoses are only occasionally found and atypical or bizarre mitoses are notably absent. Staining for vimentin and smooth-muscle actin are sometimes positive whereas, staining for myoglobin, S-100 protein, alpha-1-anti-chymotrypsin, and keratin are usually negative.^{2,3} The result of immunohistochemical staining in our case showing immunoreactivity to vimentin, desmin and smooth muscle actin is consistent with the findings of Ro et al and, together with negative staining for both myoglobin and S-100, suggest a myofibroblastic and nonskeletal muscle origin.²

The highly vascular nature of the tumor and frequency of superficial ulceration may account for the characteristic clinical presentation of gross hematuria.⁴ Condensation of tumor cells, called a cambium layer, and the presence of cytoplasmic cross-striation typically found in rhabdomyosarcoma were also absent.⁵

The pathogenesis of inflammatory pseudotumor (IPT) is still in doubt, although the possibility of an abnormal reparative response of fibroblastic spindle cells and granulation tissues can be postulated.⁶ Inflammatory pseudotumors can occur in any age group and patients as young as 2 years of age have been reported.⁷ The most common presenting symptom is painless gross hematuria and the main mass usually appears as a single intraluminal polypoid or submucosal mass with the size ranging from 2 to 7 cm. The cystoscopic and radiologic findings, including computed tomographic (CT) examinations, are nonspecific and cannot be differentiated from malignant neoplasm.⁸ The lesion shows sex predilection with a 2 : 1 female-to-male ratio. A history of genitourinary disorder, infection, trauma, or surgery is

usually absent.⁶

Clinically inflammatory pseudotumor of the bladder, like similar lesions in other locations, follows a benign indolent course and, after conservative surgery of complete transurethral resection or partial cystectomy, no recurrence of either local or distant metastasis has been reported.^{9,10} Thus it seems to be of the utmost importance for a urologic surgeon to at least consider the possibility of inflammatory pseudotumor of a benign nature in cases of any intravesical tumor mass before carrying out definitive surgery. In our case, after cystoscopic evaluation and curettage, a clinical impression of invasive bladder tumor was established and preparation for a radical cystectomy was contemplated before final histologic diagnosis was confirmed. And although just taking biopsy specimen for histologic examination is sometimes adequate, it may be dangerous to base the final diagnosis on frozen section material alone, as incorrect interpretation could be a possibility.

In summary, inflammatory pseudotumor of the bladder is a benign disease that must be differentiated from primary malignant bladder tumors, such as sarcomas and transitional cell carcinomas. Histological characteristics of sparse elongated myofibroblastic cells in myxoid stroma and infrequent mitotic figures and immunohistochemical stains are adequate for an accurate diagnosis. Clinically, the lesion can be cured by conservative surgical excision, usually transurethral resection or partial cystectomy with the absence of recurrence or metastasis. However, considering the still incomplete knowledge about the clinical behaviour of this entity and its histological similarity to certain malignant tumors, close observation with

regular follow-up should be emphasized.

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