Two Cases of Metastatic Bladder Cancers Showing Diffuse Thickening of the Bladder Wall

Tomonori Ota¹, Mitsuru Shinoara¹, Kenji Kinoshita¹, Takaaki Sakoma², Masatsugu Kitamura³ and Yoshiharu Maeda⁴

Departments of ¹Urology, ²Pathology and ³Surgery and ⁴Division of Internal Medicine and Chemotherapy, Tokyo Metropolitan Komagome Hospital, Tokyo, Japan

Metastatic bladder cancer showing diffuse thickening of the bladder wall is very rare. We report two cases of metastatic bladder cancer arising from a stomach cancer and acute lymphocytic leukemia. Hydronephrosis and diffuse thickening of the bladder wall were revealed by ultrasonography and computed tomography. Transurethral biopsy and percutaneous whole wall needle biopsy of the bladder were useful for diagnosis. The possibility of metastasis or recurrence of prior and other malignancies should therefore be considered when the clinical features described here are encountered.

Key words: metastatic bladder cancer – stomach cancer – acute lymphocytic leukemia

INTRODUCTION

Metastatic bladder cancer is rare. Most cases can be visualized endoscopically. We demonstrate here an atypical type of metastasis to the urinary bladder with diffuse wall thickening rather than a papilloma phenotype. We also review the literature on metastatic bladder cancers with special reference to the phenotype that can be classified into two types, protuberant and diffuse type, on the basis of radiological findings.

CASE REPORTS

CASE 1

A 43-year-old male initially presented with acute lymphocytic leukemia. Systemic chemotherapy and bone marrow transplantation were performed in 1991. Two years later, pain on urination and gross hematuria appeared. Urine cytology disclosed no malignancy. Whereas an intravenous urogram showed bilateral hydronephrosis, cystoscopy revealed no tumor. However, computed tomography demonstrated diffuse wall thickening of the bladder (Fig. 1A) and transurethral and percutaneous whole wall needle biopsies were performed. From the results of pathological examination a diagnosis of bladder metastasis of acute lymphocytic leukemia was concluded (Fig. 2). After systemic chemotherapy and radiation therapy, the wall thickening of the bladder was improved (Fig. 1B), but he died 2 years later because of relapse.

Figure 1. (A) Computed tomography shows diffuse thickening of the urinary bladder wall. (B) The wall thickening of the bladder was improved after chemotherapy and radiation therapy.
Figure 2. (A) The specimen of whole wall biopsy in Case 1 (x4). Widespread leukemia cells were observed. (B) Leukemia cells (x120).

with multiple metastasis of skin, right retroperitoneal space, right testis, stomach and mediastinum.

CASE 2

A 57-year-old female underwent surgery for a Borrmann IV-type poorly differentiated adenocarcinoma of the stomach. Two years after gastrectomy, a sense of residual urine and incontinence appeared. Hematuria was not detected on urinalysis and urine cytology disclosed no malignancy. An intravenous urogram showed right hydronephrosis. Ultrasonography (Fig. 3A) and computed tomography (Fig. 3B) revealed diffuse thickening of the bladder wall and hydronephrosis. We performed transurethral and percutaneous whole wall needle biopsies. The pathological examination demonstrated bladder metastasis from the previous stomach cancer (Fig. 4). No other metastatic lesion was detected. After systemic chemotherapy with 5-FU and CDDP, the wall thickening of the bladder was slightly improved radiologically (Fig. 3C). After 12 months, she is still alive and well. The chemotherapy is performed reiteratively.

DISCUSSION

Metastatic neoplasms in the bladder are unusual, accounting for less than 2% of all bladder tumors (1). The most common associated primaries are malignant melanoma and stomach and breast cancers (2).

The metastatic bladder cancer can be classified into two types radiologically and macroscopically: protuberant and diffuse type. Most are protuberant in which gross hematuria is generally observed, greatly facilitating diagnosis. In contrast, the diffuse type is very rare and only two cases have been reported (3,4). These cases were characterized by irritable bladder symptoms without gross hematuria and presented diagnostic difficulties. As
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Figure 4. Adenocarcinoma resembling prior stomach cancer infiltrates into muscle layer of the bladder (x80).

demonstrated here, ultrasonography and computed tomography are useful for visualizing diffuse thickening of the bladder wall.

The mechanism of cancer spread to the bladder is controversial. Three theories have been proposed for metastatic renal cell carcinoma cases (5-9): direct extension, implantation and retrograde venous embolism of tumor cells from the renal vein into the numerous venous connections of the left renal vein. With stomach cancer and leukemia, intraperitoneal dissemination, hematogenous or lymphatic spread to the urinary tract must be considered. Our cases indicate that whole wall biopsies of the bladder greatly aid diagnosis, in addition to transurethral biopsy.

Chemotherapy for management of diffuse-type lesions was performed in all cases. The prognosis of metastatic bladder cancers is poor in general, and determination of the best approach for control of the diffuse type awaits more cases.

References