A Rare Paraneoplastic Dermatomyositis in Bladder Cancer with Fatal Outcome

Ran Xu, Zhaohui Zhong, Hongyi Jiang, Lei Zhang, Xiaokun Zhao

The Second Xiangya Hospital, Central South University, Changsha, Hunan, China

Corresponding Author:

Hongyi Jiang, MD
Department of Urology, The Second Xiangya Hospital, Central South University, Changsha, Hunan, China

Tel: +86 138 7480 3788
Fax: +86 073 185 294 082

E-mail: ddf20@sina.com

Received January 2011
Accepted April 2011

KEYWORDS: paraneoplastic syndromes, dermatomyositis, urinary bladder neoplasms

INTRODUCTION

Dermatomyositis is an uncommon inflammatory myopathy characterized by pain and weakness in the proximal muscles and cutaneous manifestations. The association of this disease with malignancy is well known; there is a higher incidence of malignancy in dermatomyositis compared to the general population. Only a small number of cases of dermatomyositis associated with urogenital malignancies have been reported, and bladder cancer with dermatomyositis is extremely rare.[1]

We report a case of bladder cancer with dermatomyositis, which had a fatal outcome, and reviewed all the articles available about their association in English literature.

CASE REPORT

A 60-year-old man presented with a history of 40-day macroscopic hematuria to our institution. His past medical history included bladder cancer for 5 years, for which he had undergone a partial cystectomy and five transurethral resections with intravesical chemotherapy. Dermatomyositis was diagnosed one year previously, which caused him difficulty arising and walking up or down stairs in spite of systemic corticosteroids.

We performed transurethral cystoscopy, which demonstrated a 2 × 3 cm^2 solid tumor on the

Association between dermatomyositis and bladder cancer in the English literature.[£]

Reference	Age, y	Gender	Initial diagnosis Time interval	Treatment	Pathology	Prognosis
1*	79	male	BC 24 m	TURBT + intravesical immunotherapy	G1 BTCC	death
2	60	male	BC 2 w	Chemotherapy	G3T3N2 BTCC	metastasis death
3	61	male	BC 2 w	Surgery + radiotherapy	T2 BTCC	metastasis death
4	68	male	BC 13 m	Surgery + radiotherapy	G4 BTCC	metastasis death
5*	62	male	concurrent	Radical cystectomy + ileal conduit + radiotherapy	T3 BTCC	metastasis death
6	64	male	DM 12 m	Surgery + chemotherapy	G3T2N2 BTCC	metastasis death
7*	75	male	concurrent	Surgery + radiotherapy	G3T1b BTCC	
8	63	male	DM 2 m	Surgery	BTCC	

[£]BC indicates bladder cancer; DM, dermatomyositis; TURBT, transurethral resection of bladder tumor; BTCC, bladder transitional cell carcinoma; m, months; and w, weeks.
*Symptoms of DM improved after treatment of bladder cancer.

posterior wall of the bladder. Routine laboratory analysis was unremarkable. The creatine phosphokinase (CPK) level was 583.9 U/L (normal, 24 to 195 U/L), serum lactate dehydrogenase (LDH) was 578 U/L (normal, 109 to 245 U/L), and myoglobin was 1052.6 ug/L (normal, 20 to 70 ug/L). Immunological tests, including anti-double-stranded DNA antibodies, anti-Jo-1, and proliferating cell nuclear antigen were negative. Fluorine-18 fluorodeoxyglucose positron emission tomography (F-18 FDG PET) revealed regional advanced bladder cancer expanding out of the bladder, with no apparent metastatic disease.

Radical cystectomy was performed, which demonstrated bladder cancer infiltrating to the entire bladder wall. This was confirmed by pathological examination, which showed transitional cell carcinoma grade III extending to extravesical adipose tissue. There was no evidence of involvement of the rectum or pelvic lymphatics. Because of concern for healing impairment due to long-term corticosteroid administration, we performed bilateral cutaneous ureterostomy instead of forming an intestinal neobladder.

Postoperative course was satisfactory, with improvement in muscle weakness as well as normalization of CPK, LDH, and myoglobin levels. Therefore, corticosteroids were discontinued. In January 2010, the patient developed abdominal pain from multiple metastases and expired 2 weeks later.

DISCUSSION

In order to elucidate the association between dermatomyositis and bladder cancer, we analyzed all the reports in English literature. Twelve case reports were retrieved; data of 8 subjects were available,[1-8] which are summarized in Table.

All the patients were men; however, dermatomyositis usually affects women more than men. The mean age of onset was 66.5 years (range, 60 to 79 years). In 4 patients, blad-

der cancer appeared first; in 2 cases, dermatomyositis was discovered prior to the diagnosis of bladder cancer; and in the two remainders, bladder cancer and dermatomyositis were diagnosed concurrently. The type of bladder cancer was transitional cell carcinoma in all the subjects. Improvement of clinical symptoms of dermatomyositis after treatment of bladder cancer was noted in 2 patients.[1,5]

These observations suggest dermatomyositis as a paraneoplastic syndrome. Malignancies may occur before, concurrently with, or after the onset of dermatomyositis. Table shows the time interval between dermatomyositis and bladder cancer, ranging from 2 weeks to 2 years. Compared to dermatomyositis, symptoms of bladder cancer are relatively latent. A thorough urologic evaluation should be undertaken for dermatomyositis patients with hematuria, especially those with a history of bladder cancer.

In available prognosis data, 6 patients had died when reported, and all of them had high-risk bladder cancer.[1-6] This finding is in agreement with the observation that patients with dermatomyositis associated with malignancy have a poor prognosis. One possible explanation of this association is that too much attention is paid to the dermatomyositis, which delays treatment of latent malignancy. Alternatively, dermatomyositis itself may be a marker of poor prognosis in malignancy.

In conclusion, we report a rare case of dermatomyositis secondary to bladder cancer. Through our report and review of the literature, we get the following information: First, patients with bladder cancer-associated dermatomyositis are typically men and over the age of 60 years. Second, bladder cancer associated with dermatomyositis is transitional cell carcinoma, and indicates a poor prognosis. Third, a thorough urologic evaluation should be undertaken for dermatomyositis patients with hematuria, and dermatomyositis patients with a history of bladder cancer should be evaluated carefully for bladder cancer recurrence.

CONFLICT OF INTEREST

None declared.

REFERENCES

1. Sabio JM, Vargas-Hitos JA, Jimenez-Alonso J. Paraneoplastic dermatomyositis associated with bladder cancer. Lupus. 2006;15:619-20.
2. Garcia-Donoso C, Sanchez-Munoz A, Lopez-Medrano F. Dermatomyositis and transitional cell carcinoma of the bladder: a rare paraneoplastic syndrome associated with tumor recurrence. Eur J Intern Med. 2003;14:397-8.
3. Robinson AJ, Alcock CJ. Dermatomyositis in association with transitional cell carcinoma of the bladder. Clin Oncol (R Coll Radiol). 2001;13:50-1.
4. Federman DG, Radonich M, Kirsner RS. Fatal bladder cancer and dermatomyositis. South Med J. 2000;93:492-3.
5. Talanin NY, Bushore D, Rasberry R, Rudolph T, Tuli M, Friedman-Musicante R. Dermatomyositis with the features of inclusion body myositis associated with carcinoma of the bladder. Br J Dermatol. 1999;141:926-30.
6. Rankin WR, Herman JR. Rapidly progressive transitional cell carcinoma associated with dermatomyositis. J Urol. 2002;167:639-40.
7. Mallon E, Osborne G, Dinneen M, Lane RJ, Glaser M, Bunker CB. Dermatomyositis in association with transitional cell carcinoma of the bladder. Clin Exp Dermatol. 1999;24:94-6.
8. Apaydin R, Gul U, Bahadir S, Siviloglu C, Ofluoglu I. Dermatomyositis without muscle weakness associated with transitional cell carcinoma of the bladder. J Eur Acad Dermatol Venereol. 2002;16:172-4.