Gastric Cancer With Bladder Metastasis: Case Report and Literature Review

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Bladder cancer is the eighth most common cancer in Taiwanese men, and the incidence of primary bladder cancer is more common than that of metastatic bladder cancer. Metastatic bladder cancers most commonly occur secondary to skin melanomas, followed by breast and gastric cancers. Therefore, bladder adenocarcinoma is rare and should be considered due to its metastatic origin. Its clinical course is aggressive and the prognosis is bad. We report a case of gastric cancer with bladder metastasis in a middle-aged man. We review the literature and discuss the clinical course, pathological characteristics, treatment, and prognosis of this disease.

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1. Introduction

Bladder cancer is the eighth most common cancer in the Taiwanese male population.1 Primary bladder urothelial carcinoma is the most common type, followed by squamous cell carcinoma and adenocarcinoma. A neoplastic metastatic urinary bladder tumor should be considered as having another origin such as a melanoma, or breast or gastric adenocarcinoma. Primary bladder adenocarcinoma is uncommon and urachal cancer should be suspected. One of the most common forms of bladder adenocarcinoma is metastatic cancer. Therefore, bladder adenocarcinoma should be investigated with a high index of suspicion as metastatic cancer from a distant focus. The clinical course of metastatic adenocarcinoma is usually aggressive and the prognosis is always very poor. We present a case of gastric cancer with bladder metastasis.

2. Case Report

A 51-year-old man visited our urology department with the chief complaint of painless gross hematuria persisting for 1 month. The patient had a history of a gastric adenocarcinoma with lymph node metastasis (at stage T3N2M0) for which he had undergone a subtotal gastrectomy 2 years previously (Figure 1A). The patient reported that he had since had regular outpatient follow-up visits. Cystoscopy revealed an ulcerative tumor located over the bladder dome (Figure 2). Renal ultrasonography showed that he had left-sided hydronephrosis. Therefore, he was admitted for further evaluation and management.

On admission, the patient’s vital signs were stable. A urine analysis revealed hematuria (red blood cells > 100/high-power field). Laboratory results disclosed some abnormal findings (hemoglobin was 11.5 g/dL, platelets were 159/μL, and creatinine was 1.7 mg/dL). The findings of urine cytology were negative. Abdominal and pelvic computed tomographic (CT) (Figure 3) scans revealed a localized tumor arising from the bladder dome. A partial cystectomy with en bloc bladder tumor excision was undertaken. Histological analysis showed that the tumor was a poorly differentiated adenocarcinoma. This finding was consistent with a history of gastric cancer with tumor cells infiltrating all layers of the bladder (deep muscle and serosa) except for the urothelial...
Figure 1 (A) Poorly differentiated gastric adenocarcinoma (hematoxylin and eosin stain; original magnification, 100×). (B) Histologically, the tumor is composed of a metastatic adenocarcinoma (hematoxylin and eosin stain; original magnification, 100×).

Figure 2 Cystoscopy shows an ulcerative tumor located over the bladder dome.

Figure 3 Abdominal and pelvic computed tomography show a localized bladder dome tumor.

Figure 4 Retrograde pyelography shows that obstructive hydronephrosis is due to stricture of the left upper ureter.

3. Discussion

Hematuria is frequently the main symptom of a bladder tumor. A series of investigations including urine cytology, imaging studies, or even cystoscopic biopsy should be undertaken. Urachal cancer should be considered for a bladder dome tumor, especially if associated with bloody or mucoid discharge from the umbilicus or a palpable mucocele. Patients with primary gastric cancer should be evaluated under the suspicion of bladder metastasis and investigated accordingly. Generally, the most common tumors metastasizing to the bladder are melanomas, followed by breast cancers and gastric adenocarcinomas.²
The management of metastatic bladder cancer is usually complex. It is important to distinguish a primary bladder adenocarcinoma from metastatic cancers because the treatment strategies for the two entities are very different. For patients with primary bladder cancer, a radical cystectomy usually provides a good prognosis. On the other hand, surgical treatment plays a limited role in treating metastatic bladder cancer, with chemotherapy or radiotherapy providing some benefit. In this case, the tumor had spread to the bladder and the left urinary tract. A pathological examination confirmed the diagnosis of a bladder metastatic adenocarcinoma, and a biopsy sample of the left ureter showed tumor invasion. Although courses of chemotherapy were administered, the response rate was poor. Eventually, the patient died of a pulmonary embolism 7 months after the partial cystectomy.

Metastasis to the urinary bladder usually develops many years after the diagnosis of a primary cancer (mean, 7 years).\(^2\) Urinary symptoms are infrequent in cases of secondary bladder cancer, unlike cases with primary bladder malignancy. Only 3 of 21 bladder metastasis cases reported by Sheehan et al. were symptomatic.\(^2\) Similarly, Klinger et al. reported that 27 of 142 cases of urogenital tract metastasis had urinary symptoms.\(^2\) It is difficult to determine whether bladder metastasis exists in clinical practice. However, once urinary symptoms develop in a patient who has malignant disease, bladder involvement should be highly suspected. CT and magnetic resonance imaging are useful techniques for diagnosing bladder cancers. Metastatic lesions are usually solitary with focal thickening of the bladder wall but sometimes show diffuse thickening of the wall.\(^3\) Ultrasonography is more useful for evaluating upper urinary tract function and obstruction. Generally, it is difficult to distinguish between primary bladder adenocarcinoma and metastatic adenocarcinoma solely on the basis of the histological findings. A metastatic tumor should be suspected if the tumor extends from the bladder serosa to the mucosa, especially in cases with a history of tumor origin from another site. In our case, the bladder tumor was pathologically determined to be a poorly differentiated adenocarcinoma with glandular cell infiltration and intact urothelial epithelium, which was consistent with the diagnosis of metastatic cancer. Fornage et al. reported a case of bladder wall metastasis from stomach cancer that was diagnosed by abdominal and pelvic sonography.\(^4\) In patients with hematuria or lower-urinary-tract symptoms, cystoscopy is mandatory for tumor diagnosis, as performed in our case. Furthermore, almost all cases of bladder metastasis from gastric cancer have peritoneal dissemination; therefore, the prognosis in such cases is very poor.\(^5\) Generally, treatment with curative intention is impossible because of the metastatic nature of the disease, and adjuvant chemotherapy is indicated, although its results are not entirely satisfactory.\(^6\) Apart from the bladder, the ureter is another less common site for metastases of a gastric malignancy, which result in severe but rare complications such as acute disseminated intravascular coagulation.\(^7\)

In conclusion, the bladder is an uncommon site for distant cancer metastasis. The presence of bladder adenocarcinoma should raise the suspicion of a primary cancer focus at some other site. For patients in whom the primary cancer site is known and urinary tract symptoms are present, cystoscopy or an upper-urinary-tract investigation is necessary. In general, the survival rate in such cases is poor, and the clinical course is aggressive in patients with bladder metastasis.

References