Case report

Carcinosarcoma of the Urinary Bladder with Rapid Growth: A Case Report

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Abstract

Carcinosarcoma of the bladder is a rare malignancy characterized by an intimate admixture of malignant epithelial elements (carcinoma) and malignant soft tissue elements (sarcoma). Patients with carcinosarcoma usually present with high-stage malignancy. Cystectomy or transurethral resection of the bladder tumor (TUR-Bt) is the preferred treatment, often followed by radiation therapy, but the prognosis is very poor¹–⁷. To our knowledge, almost 80 cases have been reported in Japan, usually as case reports or small series⁶,⁷. In almost all cases, the chief complaint was gross hematuria. We herein report a case of carcinosarcoma of the urinary bladder in a patient whose chief complaint was abdominal pain. His pain worsened, and the occurrence of hydronephrosis indicated that extremely rapid tumor growth may have occurred. No evidence of recurrence was noted 30 months after the performance of cystectomy.

Key words: carcinosarcoma, bladder, radical cystectomy

Case Report

A 57-year-old man visited our hospital complaining of pollakusuria and lower abdominal pain. Ultrasonography revealed a broad base tumor in the bladder, and hydronephrosis was not observed at that time. Computed tomography (CT); (Figure 1) and magnetic resonance imaging (MRI); (Figure 2) also revealed a broad base tumor in the bladder, and the clinical diagnosis was cT2N0M0. Urine cytology showed urothelial carcinoma G2-G3, and the possibility of invasion into deep muscle layers was considered, therefore, a radical cystectomy was scheduled after obtaining informed consent.

Eight days after admission (16 days after the first visit), the patient’s lower abdominal pain worsened, and a pain-killer was needed frequently. Ultrasonography revealed the occurrence of bilateral hydronephrosis, suggesting the possibility of rapid tumor growth.

Introduction

Because of the rarity of carcinosarcoma, uncertainty exists regarding the treatment and prognosis. The optimal treatment is uncertain, although a very small number of patients have experienced prolonged survival with the combination of surgery and radiation or chemotherapy. We herein report a case of carcinosarcoma of the urinary bladder with rapid growth in which we achieved pathologically complete resection by surgery.

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Ten days after admission (18 days after the first visit), radical cystourethrectomy and pelvic lymph node dissection with cutaneous ureterostomy were performed. No malignancy was found in the surgical margin of the ureter by pathological examination during the operation. The cystourethrectomy specimen (Figure 3) contained a thick, gray 30 × 30 × 25 mm tumor that extended from the right bladder wall through the bladder dome and into the posterior bladder wall. Microscopic examination (Figure 4) of the tumor showed two elements of urothelial carcinoma localized within the submucosa and rhabdomyosarcoma. Immunohistochemical examination (Figure 5) showed that the area of the epithelium component was positive for cytokeratin, and the non-epithelium area was positive for myoglobin, vimentin and desmin, with there being no relationship between the two. The elements of urothelial carcinoma were limited to within the submucosa, so we diagnosed the tumor as completely resected. The pathological stage was urothelial carcinoma G2-3 pT1N0M0 and rhabdomyosarcoma pTxN0M0. We did not perform any additional therapies, because of the noneffectiveness of chemotherapy and radiation therapy for carcinosarcoma patients. The patient showed no evidence of disease 30 months after the operation.

Discussion

Carcinosarcoma of the bladder is a rare malignancy characterized by an intimate admixture of malignant epithelial elements (carcinoma) and malignant soft tissue elements (sarcoma). In previous reports, various terms have been used for such tumors, such as sarcomatoid carcinoma, carcinosarcoma, spindle cell carcinoma, and malignant mixed mesodermal tumor. Although there is no unified opinion or agreement on the histogenesis and nomenclature, the terms carcinosarcoma and sarcomatoid carcinoma have recently been used in such cases. Sometimes, carcinosarcoma arises in patients with a history of radiation therapy, chemotherapy
or other conditions that cause cell replication abnormalities. Previous treatment with cyclophosphamide and radiation therapy may result in transformation of the usual urothelial carcinoma into carcinosarcoma.

The histological features of carcinosarcoma of the bladder vary. Tumors are usually large and polypoid or nodular. Lopez et al. reported 41 cases of carcinosarcoma and sarcomatoid carcinoma of the bladder. Carcinosarcoma and sarcomatoid carcinoma are more common in men than women. The epithelial component has been reported to be urothelial carcinoma in 60% of the cases, small cell carcinoma in 20%, and squamous cell carcinoma or mixed forms in 6.7%. The most common sarcomatous elements in the carcinosarcoma are chondrosarcoma, leiomyosarcoma and malignant fibrous histiocytoma in 20% of cases each, followed by osteosarcoma in 13% of cases, osteosarcoma with leiomyosarcoma in 13% of cases, fibrosarcoma in 7% of cases and rhabdomyosarcoma in 7% of cases. Diagnosis of carcinosarcoma of the bladder is usually present with high-stage malignancy. Radical cystectomy or transurethral resection is the preferred treatment, often followed by radiation therapy, although the results vary. When complete resection of the tumor is performed, the prognosis is favorable according to some reports.

The clinical course of patients is sometimes quite aggressive. Atsuko et al. reported one case of sarcomatoid carcinoma of the urinary bladder with spontaneous perforation. In our patient, the initial chief complaint was lower abdominal pain; many other potential causes were investigated, and no other reason for the pain was determined. Therefore, we scheduled the operation for as soon as possible. The pain worsened after admission, and a painkiller was

**Figure 4** Microscopy shows a mixture of urothelial carcinoma and rhabdomyosarcoma.
frequently needed. Ultrasonography revealed bilateral hydronephrosis that had not been noted on CT, so we strongly suspected that rapid tumor growth had occurred. We performed the operation two days after observation of hydronephrosis, and fortunately there were no invasive elements. If a tumor found to be locally advanced with signs of rapid growth, radical cystectomy should be considered as soon as possible. In addition, we selected the cutaneous ureterostomy as a urinary diversion because of the occurrence of hydronephrosis.

Patients rarely achieved prolonged survival with conservative therapy. Chemotherapy provides no apparent survival advantage, but Froehner et al.\textsuperscript{12}) reported a patient with complete local and pulmonary remission of metastatic sarcomatoid carcinoma of the bladder who was treated with gemcitabine and cisplatin. Seiji et al.\textsuperscript{13}) reported one case of a patient who achieved a pathologically complete response by neoadjuvant chemoradiotherapy. Concerning the treatment of soft tissue sarcoma, preoperative chemoradiotherapy is recommended\textsuperscript{4)}. Hensley et al.\textsuperscript{15}) reported that a 53% response rate was obtained with a combination therapy of gemcitabine, docetaxel and irradiation in unresectable leiomyosarcoma patients. Neoadjuvant chemotherapy was also a possible therapy, but we considered the possibility of tumor rapid growth and that the prognosis has been reported to be better in some reports\textsuperscript{5–8, 10}). Therefore, we performed radical cystectomy in a localized phase and achieved complete resection.

This was a rare case of carcinosarcoma of the urinary bladder with rapid growth. Pathological complete resection was achieved by a radical operation in a localized phase. Further collaborative large-scale studies are needed for better understanding of the major prognostic determinants of these tumors and to identify specific treatments.

References


Figure 5  Immunohistochemically, the epithelial component was positively stained for keratin (AE1/AE3), and the sarcomatous component was positively stained for vimentin, desmin, and myoglobin (not shown).


