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Case Report

Sarcomatoid Variant of Bladder Carcinoma: A Case Report

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Keywords
Sarcomatoid variant · Bladder tumor · Bladder cancer · Cisplatin · Gemcitabine

Abstract
A 59-year-old man was referred to our hospital complaining of asymptomatic gross hematuria. Cystoscopy revealed a papillary tumor 8 cm in diameter filling the bladder. The patient underwent transurethral resection of the bladder tumor. The pathological findings revealed the sarcomatoid variant of urothelial carcinoma with a heterologous osteosarcomatous element. He had no metastasis according to our imaging analyses; thus, we planned radical cystectomy after two courses of neoadjuvant chemotherapy (gemcitabine and cisplatin). Following chemotherapy, enlarged pelvic lymph nodes were noted, and extremely aggressive local progression of the bladder tumor was confirmed. The patient ultimately died 6 months after his initial visit to our hospital.

Introduction

Urinary bladder cancer is one of the most commonly diagnosed malignancies [1]. Two-thirds to three-fourths of patients with bladder tumor initially present with non-muscle-invasive (pTa or pT1) disease that can often be treated with conservative approaches;

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however, many patients suffer from recurrence, occasionally with grade and/or stage progression [2].

The sarcomatoid variant of bladder carcinoma is an uncommon histological variant with an epithelial component and a nonepithelial sarcoma component. It accounts for less than 1% of all urothelial carcinomas [3]. Sarcomatoid-variant bladder carcinoma has been associated with a rapid growth rate and an advanced stage at presentation. However, limited information is available regarding its treatment, such as viable chemotherapy regimens, and the outcome of this disease.

We herein report on a case of sarcomatoid-variant bladder carcinoma with rapid progression during neoadjuvant chemotherapy.

Case Presentation

A 59-year-old man presenting with asymptomatic gross hematuria was referred to our hospital for further examination. Cystoscopy revealed a nodular tumor 8 cm in diameter filling the bladder (Fig. 1). CT and MRI revealed that the tumor occupied the bladder (Fig. 2, 3). He had a smoking history, but his family had no remarkable medical history. Laboratory examinations showed almost normal values. Transurethral resection of the bladder tumor was performed. Histologically, the carcinomatous element consisted of urothelial carcinoma with squamous differentiation, and the sarcomatous element consisted of osteosarcoma and high-grade spindle cells (Fig. 4). He rejected radical cystectomy initially, instead undergoing a second transurethral resection of the bladder tumor. The resected specimen showed the same elements with muscle invasion. Therefore, he was scheduled to undergo 2 courses of neoadjuvant chemotherapy (gemcitabine 1,000 mg/m^2 on days 1 and 8 and cisplatin 70 mg/m^2 on day 2) and then radical cystectomy. After neoadjuvant chemotherapy, CT showed bilateral enlarged pelvic lymph nodes and left hydronephrosis without distant metastasis. He was unable to undergo radical cystectomy and ultimately died of cancer 6 months after the initial visit.

Discussion

Sarcomatoid-variant urothelial carcinoma is an uncommon histological variant of urothelial carcinoma [4]. The majority of sarcomatoid-variant urothelial carcinomas is found in the bladder, accounting for less than 1.0% of all bladder cancer cases [5, 6]. Generally, sarcomatoid carcinoma is a biphasic malignant tumor exhibiting morphological and/or immunohistochemical evidence of epithelial and mesenchymal differentiation. The epithelial elements react with cytokeratin or epithelial membranous antigen, whereas the stromal elements react with vimentin, actin, or specific biomarkers. Sarcomatoid-variant urothelial carcinoma has a very poor prognosis compared with other types, due to the aggressive nature of this neoplasm [7]. We herein reported on a rare case of sarcomatoid-variant bladder tumor.

Statement of Ethics

Written informed consent to participate and for publication was obtained from the patient for ethics approval.

Disclosure Statement

We declare no conflicts of interest.

Funding Sources

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Availability of Data and Material

Due to ethical restrictions, the raw data underlying this paper are available upon request from the corresponding author.

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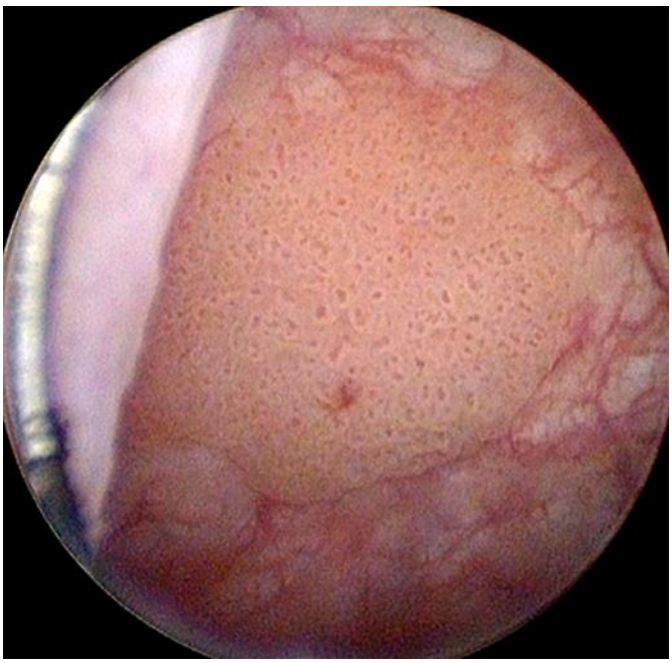

Fig. 1. Cystoscopic findings.

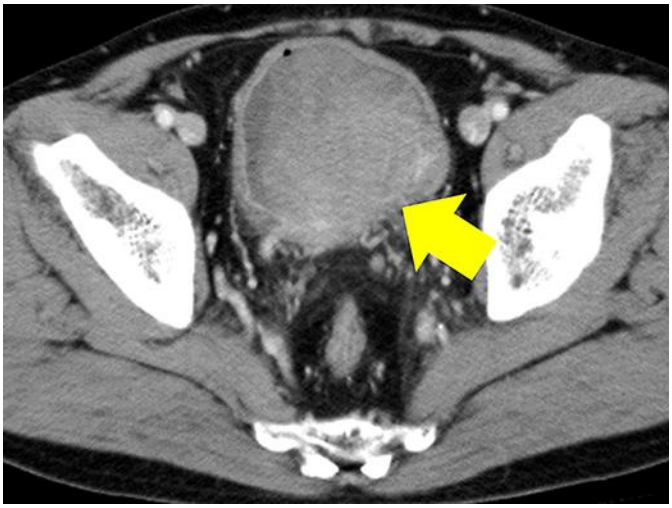

Fig. 2. Contrast-enhanced CT image. The arrow indicates the tumor.

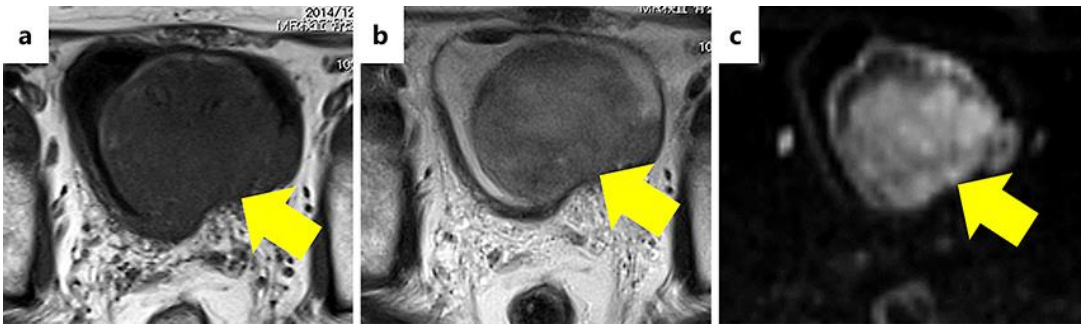

Fig. 3. MR images. **a** T1-weighted image. **b** T2-weighted image. **c** Diffusion-weighted image. The arrows indicate the tumor.

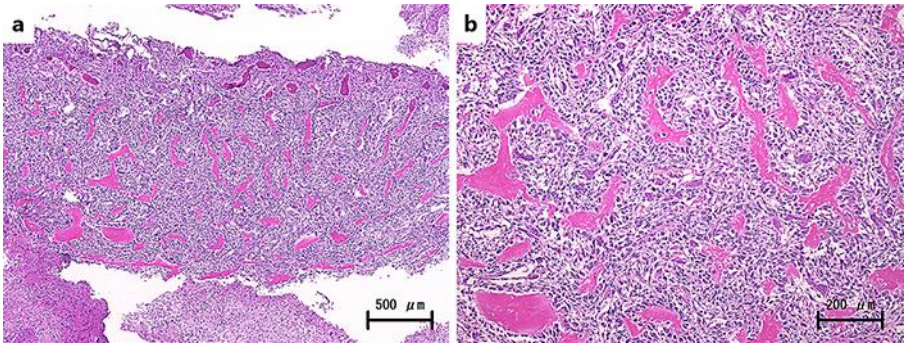

Fig. 4. **a**, **b** HE findings. The carcinomatous element consisted of an urothelial carcinoma with squamous differentiation.