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CASE REPORT

High-Grade Urothelial Carcinoma with Sarcomatoid Differentiation: A Rare Case Presenting with Colonic Metastasis

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Abstract

Objective: Urothelial carcinoma with sarcomatoid differentiation is an uncommon but highly aggressive variant of bladder cancer, often diagnosed at advanced stages and associated with poor outcomes. Colonic metastasis from bladder carcinoma is extremely rare, making this case noteworthy.

Case presentation: A 68-year-old male presented with macroscopic hematuria and dysuria. Imaging revealed a bladder mass invading the perivesical tissue. Transurethral biopsy confirmed high-grade urothelial carcinoma with sarcomatoid differentiation. During preoperative evaluation, colonoscopy revealed an ulcerated mass in the ascending colon, confirmed as metastatic carcinoma with similar sarcomatoid features. The patient underwent radical cystectomy and right hemicolectomy. Despite surgery and planned chemotherapy, the patient died postoperatively due to clinical deterioration.

Conclusions: This case underscores the aggressive nature of sarcomatoid urothelial carcinoma and highlights the potential for rare metastatic patterns, emphasizing the need for multidisciplinary management in atypical presentations.

Keywords: bladder cancer, colonic metastasis, hemicolectomy, radical cystectomy, sarcomatoid tumor, urothelial carcinoma

INTRODUCTION

Bladder cancers are the most common malignancies of the urinary system. Histologically, the most prevalent type is urothelial carcinoma. The sarcomatoid variant is a rare and highly aggressive subtype characterized by epithelial-mesenchymal transition features (1). According to the literature, this variant is frequently associated with advanced-stage diagnosis, early metastasis, and poor survival outcomes (2). In this case, we report the clinical course of a patient with high-grade urothelial carcinoma exhibiting sarcomatoid differentiation, accompanied by the rare occurrence of colonic metastasis.

CASE PRESENTATION

Our patient was a 68-year-old male who presented to our outpatient clinic with complaints of painful macroscopic

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hematuria and dysuria. Physical examination revealed suprapubic tenderness, with no other systemic findings. Pelvic computed tomography (CT) and magnetic resonance imaging (MRI) revealed a solid mass lesion measuring approximately 45 × 35 mm, involving the posterior wall, right lateral wall, dome, and base of the bladder, with invasion into the perivesical adipose tissue (Figure 1).

Histopathological analysis of the transurethral resection specimen confirmed the diagnosis of high-grade, poorly differentiated invasive urothelial carcinoma with sarcomatoid features. Fluorodeoxyglucose positron emission tomography (FDG-PET) revealed no evidence of distant organ or regional lymph node metastasis. During the preoperative evaluation for cystectomy, the patient developed melena. Colonoscopy was performed, revealing an ulcerated, vegetative mass in the ascending colon (Figure 2).

A biopsy was obtained from the lesion, and histopathological examination revealed findings consistent with metastatic carcinoma containing poorly differentiated sarcomatoid features. These findings were similar to those observed in the pathology specimen obtained after transurethral resection. The patient underwent simultaneous radical cystectomy and right hemicolectomy in collaboration with the general surgery team (Figure 3).

No perioperative complications were observed. Pathological evaluation revealed that the tumor was macroscopically infiltrative into the perivesical adipose tissue (pT3b). Invasion of the lamina propria and muscularis propria was also noted. Lymphovascular and perineural invasion were present, along with tumor necrosis and sarcomatoid differentiation. Immunohistochemical staining showed GATA-3 positivity and focal CK7 positivity. GATA-3 positivity strongly supports a urothelial origin of the tumor and helps to rule out the possibility of a primary colonic neoplasm. Right pelvic lymph node dissection revealed one metastatic lymph node out of seven (1/7). A total of 14 lymph nodes obtained from the left pelvic and paracaval regions were evaluated as reactive. In

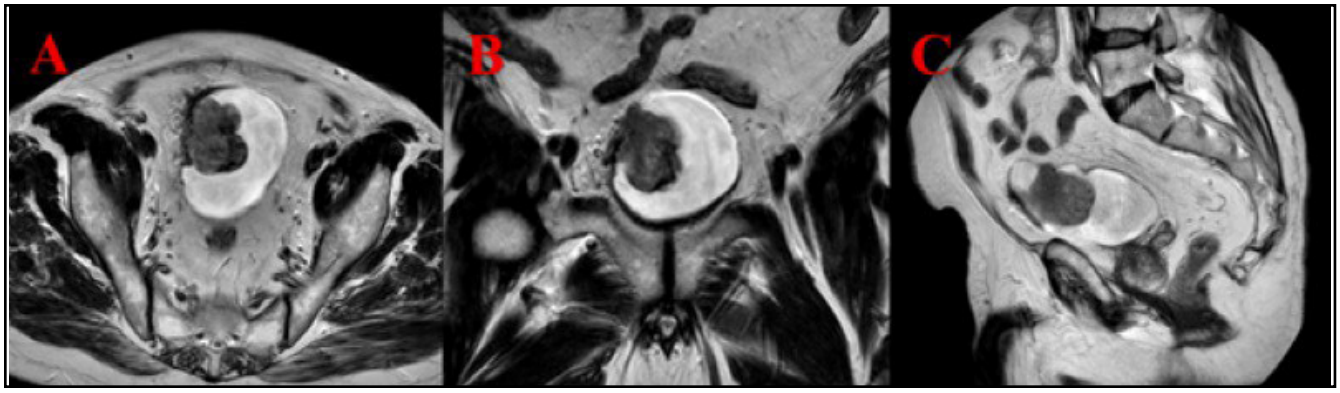

Figure 1. Contrast-enhanced MRI images of the bladder mass prior to TUR resection; axial (A), coronal (B), and sagittal (C) sections.

Figure 2. Endoscopic image of the ulcerative vegetative mass observed during colonoscopy.

the right hemicolectomy specimen, while no adjacent organ invasion from the primary bladder tumor was observed, metastatic foci of carcinoma were noted infiltrating the colonic wall and located within the mesocolon. Although adjuvant chemotherapy was planned during follow-up, the patient developed clinical deterioration and was transferred to the intensive care unit for close monitoring. Despite appropriate management and supportive care, the patient died on postoperative day 28. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

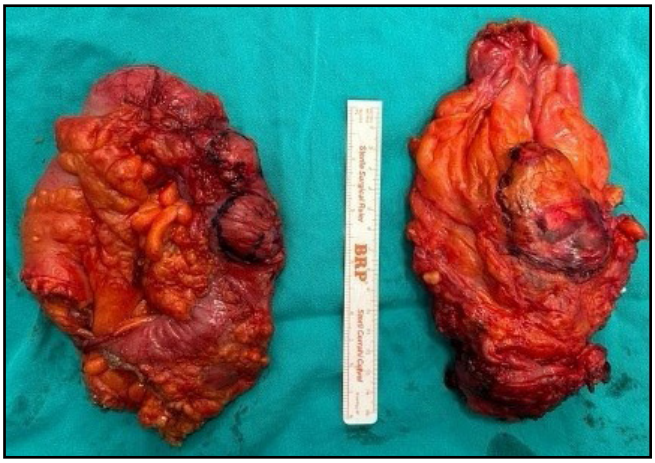

Figure 3. Macroscopic image of the right hemicolectomy specimen removed during surgery. Suspected invasion of the bladder tumor was not observed macroscopically.

DISCUSSION

Urothelial carcinomas, which comprise nearly 90% of bladder tumors, usually appear as superficial or muscle-invasive types; however, rare histological variants such as those with sarcomatoid differentiation tend to follow a significantly more aggressive clinical trajectory (3). Sarcomatoid urothelial carcinomas are biphasic tumors that contain both epithelial and mesenchymal components (4). These tumors are frequently high-grade, tend to invade deep tissues, and are prone to early metastasis (5). Reported incidence in the literature ranges from 0.3% to 1%, with most cases being diagnosed at an advanced stage (pT3–pT4) (2). Variant histology has been reported as an independent factor negatively affecting pathological outcomes and survival in urothelial carcinoma; sarcomatoid differentiation is considered one of the most aggressive subtypes (1). Tumors containing a sarcomatoid component often exhibit adverse histopathological features, such as tumor necrosis, perineural invasion, and lymphovascular invasion, all of which negatively impact overall survival. Studies have shown that this variant is associated with significantly shorter survival compared to conventional urothelial carcinomas (6). The frequent detection of widespread metastasis or locally advanced invasion at the time of diagnosis further underscores the biologically aggressive nature of these tumors. While intravesical therapies remain essential for non–muscle invasive bladder tumors, especially in the setting of BCG failure, where combination strategies such as BCG plus interferon-α2b have been reported, sarcomatoid differentiation typically presents with advanced disease that necessitates radical surgical management. In the present case, the tumor demonstrated perivesical adipose tissue invasion beyond the bladder (pT3b), metastasis in the right pelvic lymph node, and, notably, a rare colonic metastasis. While urothelial carcinomas most commonly metastasize to the liver, lungs, and bones, involvement of the gastrointestinal system is exceedingly rare (7). In particular, reports of invasion into the colon and the presence of metastatic foci within the mesocolon are limited to a small number of cases in the literature. A review of the existing literature suggests that colonic involvement in sarcomatoid urothelial carcinoma has been described in only a limited number of case reports. In one of those reports, a patient who had previously undergone partial cystectomy presented to the emergency department three months postoperatively with abdominal pain, and advanced imaging revealed a mass in the transverse colon. Surgical resection and subsequent pathological analysis identified urothelial carcinoma with sarcomatoid differentiation (8). In another case report, the patient with bladder urothelial carcinoma was found to have an isolated gastric metastasis (9).

The lesion mimicked a primary gastric tumor, highlighting the importance of considering metastatic disease in patients with atypical gastrointestinal findings (1). These findings suggest that the sarcomatoid component may enable metastasis to atypical organs via lymphatic or hematogenous spread.

This case contributes to the literature by highlighting the potential for atypical dissemination patterns in bladder tumors and underlining the worse prognosis associated with the sarcomatoid variant.

CONCLUSIONS

These cases point out that gastrointestinal involvement, including isolated colonic metastasis, can offer further understanding of the behavior and clinical progression of bladder tumors with sarcomatoid differentiation. It emphasizes the requirement for clinicians to adopt a more comprehensive and vigilant approach during both diagnosis and treatment of such aggressive variants. In particular, close postoperative monitoring is of critical importance for the early detection and management of complications.

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