

Oncology

Bladder metastasis of gastric signet-ring cell carcinoma

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Introduction

Metastatic lesions in urinary bladder represent less than 2% of all bladder neoplasms.¹ Most of them reach to bladder by direct invasion (the female genital tract, prostate and lower gastrointestinal tract). The other primary tumors originate from the skin, stomach, breast, or lung.² Signet-ring cell carcinomas identified in the bladder are rare entities and may represent metastases from other primary sites, usually from the gastrointestinal tract. Signet-ring cell carcinoma is a subtype of mucin producing adenocarcinomas, and is associated with aggressive clinical course and early metastatic disease.³ We present a case with gastric signet-ring cell carcinoma metastasizing to urinary bladder.

Case report

A 58-year-old woman complaining of dysphagia, diffuse hypogastric pain, a weight loss of 7–8 kg in the past month was diagnosed as having carcinoma of stomach by endoscopic biopsy. Abdominal tomography revealed a malignant tumoral mass in gastric lesser curvature and lymph nodes without any metastasis. Radical gastrectomy and lymph node dissection were performed. The histopathological examination of the resected specimen revealed stomach adenocarcinoma with signet-ring-cell component and 15 metastatic lymph nodes. Lymphovascular and perineural invasion was positive. TNM classification was T3N3M0 (Fig. 1). The patient was given adjuvant chemotherapy (4 cycles of 5-fluorouracil and calcium folinate) and radiotherapy (45 Gy-25 days). Ten months later, she was admitted with pain, anorexia, poor oral intake, nausea and vomiting. On physical examination, a decreased skin turgor tonus was found. There was no defensive rebound and

ascites. There was no anemia in the laboratory tests, and the tumor markers were normal. Gastroscopy was performed and no recurrence was detected. Abdominal magnetic resonance imaging was reported that “a mass lesion was detected (metastasis?, bladder ca?) that can not be distinguished from the bladder wall in the superolateral vicinity of the left bladder.” (Fig. 2) In the presence of microscopic hematuria, cystoscopy showed a solid lesion approximately 5 cm in size at left bladder wall. In the thorax CT there was no metastasis. A complete TUR-B was performed. The histopathological examination of the resected specimen was adenocarcinoma metastasis with neoplastic cells contain focally signet-ring cell components. In immunohistochemical analyses, CK7 (+), CK20 focally (+), Gata 3 (–), Uroplakin (–) and histochemical analyses, mucicarmine (+), PAS/AB (+), intra-extra-cellular mucin (+) (Fig. 3). After TUR-B the patient was given chemotherapy (6 cycles of capecitabine and oxaliplatin). Nine months later, the recurrence was detected in the bladder and TUR-B was performed, three cycles of irinotecan and capecitabine and then three cycles of irinotecan, capecitabine and oxaliplatin was given to the patient. The patient is under follow-up (medical oncology, urology and radiation oncology clinics), and is considered disease free with bone scintigraphy and abdominal computerized tomography in the 6th months after the cessation of last chemotherapy.

Discussion

Urinary bladder is a rare site for malign tumors to metastasize. They represent only 2% of all bladder tumors. Bladder metastases may not only result from direct expansion of the primary tumor, but also result from the implantation of lymphogenic, hematogenous or peritoneal

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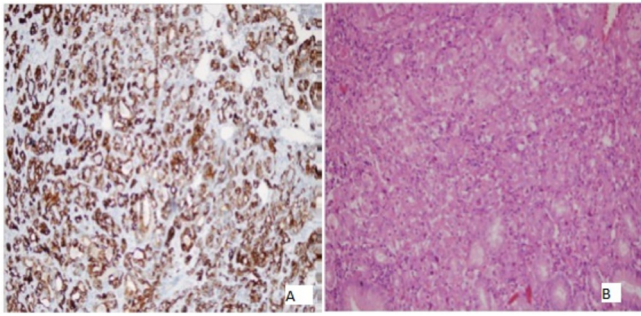


Fig. 1. Histopathologic appearance of gastric adenocarcinoma with ring cells; cytokeratin staining (A), hematoxylin eosin staining(B).

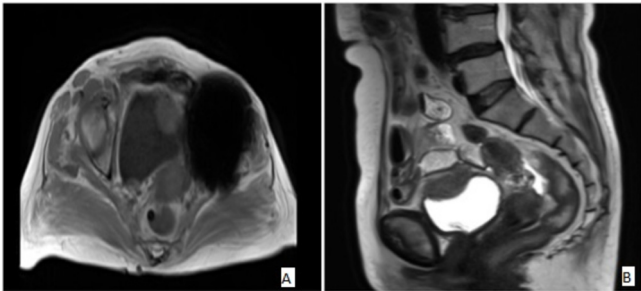


Fig. 2. Lower abdomen MRI: Bladder left superolateral mass that can not be distinguish by bladder wall(A, B).

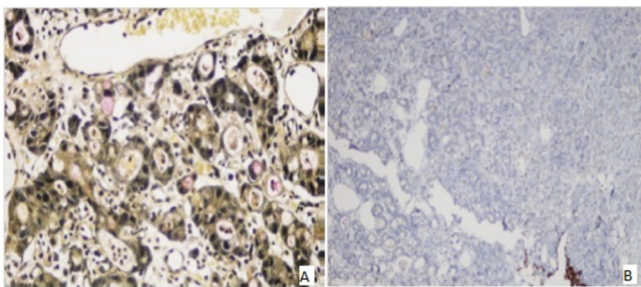


Fig. 3. Histopathological appearance of stomach adenocarcinoma metastasis in bladder transitional cell epithelium; mucicarmine staining, signet ring cells(A), GATA staining(B).

spread from a distant primary neoplasm.⁴ Most of the information about bladder metastatic tumors was obtained from autopsy series. Bates et al. reported on 282 patients series containing bladder secondary tumors, organs that metastasize directly to the bladder; are colon (21%), prostate (19%), rectum (12%) and cervix (11%). The others are gastric cancer (4.3%), melanoma (3.9%), lung (2.8%) and

breast cancer (2.5%). Signet ring cell carcinomas seen in the bladder are rare entities and may represent metastases from other primary sites, usually from the gastrointestinal tract. There are less than 20 cases in the literature.³ The presence of adenocarcinoma in a transurethral resection (TUR) specimen should raise suspicion of secondary involvement.¹ Cystoscopic evaluation might be helpful for the diagnosis: in fact, usually secondary tumors are almost always solitary and are mostly (54%) located in the bladder neck or trigone region unlike primary bladder tumors.³ Immunohistochemical studies may be helpful. Torenbeek et al. reported, at least focally, of CK7 in 82% positive of cases and CK20 in 73% positive, whereas a CK20-positive and CK7-negative profile was detected in only 29% of the cases of primary adenocarcinomas of the bladder.⁴ In gastric cancer, CK7 is usually positive and CK20 is negative. Mucicarmine is positive at a high rate in mucin producing tumors and particularly in gastrointestinal malignancies.³ In our case we obtained CK7(+), CK20 focally (+), Gata 3(-), Uroplakin(-) and histochemical analyses, mucicarmine(+), PAS/AB(+), intraextracellular mucin(+).

The overall outcome for signet-ring cell cancers is very poor.³ Bilici reported that; currently combination chemotherapy regimens as ECX (epirubicin, cisplatin and capecitabine), CX (cisplatin and capecitabine), EOX (epirubicin, oxaliplatin and capecitabine), IC (irinotecan and cisplatin) are preferred. These regimens have been found to be superior to the earlier gold standard of fluorouracil, doxorubicin and mitomycin.⁵ In our case, we used 4 cycles of 5-fluorouracil and calcium folinate and 6 cycles of capecitabine and oxaliplatin in adjuvant setting. Later in the recurrence three cycles of irinotecan and capecitabine and then three cycles of irinotecan, capecitabine and oxaliplatin was given to the patient. In conclusion bladder metastasis from gastric signet-ring cell adenocarcinoma is rare but must be kept in mind.

Conflicts of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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