Ureteral cancer first recognized by mechanical ileus due to intestinal metastasis

Shigeyuki Takamatsu · Toshifumi Gabata
Kazuto Kozaka · Humiaki Ueda · Osamu Matsui
Ryo Matsutani · Yoshiyuki Ishiura · Mikio Namiki
Akitaka Nonomura

Abstract We report a case of ureteral transitional cell carcinoma (TCC) first recognized because of mechanical ileus due to intestinal metastasis without definitive evidence of hydronephrosis or ureteral mass on plain computed tomography. We believe this to be the first case of ureteral TCC that was first recognized because of mechanical ileus due to small intestinal metastasis.

Key words Transitional cell carcinoma · Small intestine · Metastasis · Mechanical ileus

Introduction

Malignant tumors often metastasize to the gastrointestinal tract in the terminal stage, but it is rare that such metastases cause the initial symptoms. We report a case of ureteral transitional cell carcinoma (TCC) first recognized because of mechanical ileus due to intestinal metastasis without any findings of definite hydronephrosis or a ureteral mass on plain computed tomography (CT).

Case report

A 76-year-old man was admitted to our hospital with epigastralgia, abdominal pain, and vomiting. The past history included gastrectomy due to a gastric ulcer at 34 years of age and cholecystectomy due to gallstones at 53 years. Clinical examination showed tenderness of the epigastrium. Biochemical investigation showed a slightly elevated white blood cell (WBC) count of 11000/µl. Tumor markers (CEA, CA19-9, CA125, CA15-3, DUPAN-2, PA) were not elevated.

Abdominal X-P showed multiple niveau formation, and obstructive ileus was diagnosed (Fig. 1). Emergent plain CT revealed mechanical ileus caused by localized stenosis due to a thickened wall of the ileum. There was no abnormality in the urinary system. Ultrasonography (US) examination was not done (Fig. 2). The tentative diagnosis was mechanical ileus due to postoperative adhesion.

The patient was initially treated conservatively, but his symptoms remained and imaging findings did not improve. Therefore, partial resection of the small intestine was done 4 weeks after onset. The surgical findings included thickening of the wall with stenosis in the ileum, which was 3.5 cm in length. Pathologically, there was mucosal ulceration and tumor cell proliferation in the submucosa due to metastatic proliferation in lymphatic channels. The tumor was diagnosed as a metastasis of a TCC or poorly differentiated adenocarcinoma (Fig. 3).

On subsequent blood examination, tumor markers (CEA, CA19-9, CA125, CA15-3, DUPAN-2, PA) were not elevated. Urinalysis showed no hematuria, but urine cytology samples were positive (class IV: urothelial carcinoma).
Abdominal enhanced CT was done to check the primary tumor about 3 weeks after the operation for ileus (7 weeks after the onset of ileus). It showed mild hydronephrosis of the right kidney with an old scar and a tumor in the right ureter. The ureteral tumor was close to the duodenal wall and ascending colon, but it was unclear if there was direct invasion of these organs. There was no lymph node swelling, disseminated tumor and ascites (Fig. 4). Magnetic resonance (MR) urography showed right hydronephrosis and right ureteral stenosis (Fig. 5). We diagnosed an advanced right ureteral tumor, for which surgery was performed.

At surgery, the ureteral tumor was found to have invaded the retroperitoneal soft tissue and duodenal wall, and it coalesced with the ascending colon. Nephroureterectomy and right hemicolectomy were performed.

Pathology examination revealed grade 2, invasive TCC, nonpapillary type, T4N2. The tumor size was $4.0 \times 3.5 \times 3.5$ cm and invaded the muscle layer and serosa of the duodenal wall. There was metastatic TCC in retroperitoneal lymph nodes in the tissue sections. Comparison of the intestinal and ureteral tumors (Fig. 6) revealed their tissues to be the same, and the intestinal lesion was finally diagnosed as a lymphogenous metastasis from the ureteral tumor.

Two months after the second operation, ileus due to diffuse peritoneal dissemination occurred. Gastrostomy and gastrointestinal bypass were performed. The ileus was alleviated, but the patient’s general state deterio-