URETERAL METASTASIS AS THE FIRST MANIFESTATION OF ASYMPTOMATIC GASTRIC CANCER

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Ureteral metastasis from gastric cancer is rare. It is usually diagnosed in the setting of an advanced gastric cancer or on postmortem examination. Isolated ureteral metastasis without involvement of other sites is extremely rare. We describe a 67-year-old man with gastric cancer and right ureteral metastasis. The patient was from Ardabil Province, a high incidence area for gastric cancer in Iran. He presented with right flank pain which was found to be due to ureteral obstruction. Surgical relief of the obstruction was sought and the surgical biopsy specimens showed metastatic undifferentiated carcinoma in the ureteral wall. A search for the primary lesion revealed gastric cancer. He denied any symptoms referable to his upper GI tract. The patient is doing well on chemotherapy 6 months after the initial diagnosis.

Keywords: Gastric cancer • hydronephrosis • hydroureter • ureteral metastasis

Introduction

Ureteral obstruction caused by gastric cancer may occur by any of the following three mechanisms: direct extension from the primary site, peritoneal deposit, or lymph node metastasis. There have been a considerable number of indistinguishable cases. This complication is usually seen in patients with advanced cancer or found at autopsy. A sclerotic reaction induced by cancer cells invading the periureteral region without direct invasion of the ureter, may result in ureteral obstruction. This condition is known as secondary or malignant retroperitoneal fibrosis. Metastasis to the ureter from the primary site through lymphatics and/or blood vessels may also happen but are quite rare. We encountered a patient with gastric cancer who presented with hydronephrosis caused by ureteral metastasis, without any symptoms referable to the primary lesion.

Case Report

A 67-year-old man was referred to the Aras Urology Clinic, Ardabil, Iran because of pain in his right flank and losing 10 kg within a month. There was no hematuria, micturition complaints, or renal colic. Physical examination was within normal limits except for some cachexia. An abdominal ultrasound examination revealed grade-2 hydronephrosis and hydroureter. Abdominal and pelvic CT scan was essentially normal except for the hydroureteronephrosis. Serum creatinine and urea levels were 1.3 mg/dL and 52 mg/dL, respectively. Other laboratory findings were normal except for mild anemia (Hgb: 12.7 g/dL, MCV: 96.6 fl). A slowly excreting right kidney was observed on intravenous urogram (Figure 1). During ureteroscopy, the catheter could not be passed beyond the ureteral stricture. The patient underwent a surgical ureterolysis and ureteroureterostomy. Histopathological examination revealed ureteral wall invasion by undifferentiated carcinoma. On immunohistochemical (IHC) staining, tumor cells were positive for cytokeratin (CK), epithelial membrane antigen (EMA), carcino-embryonic antigen (CEA), and negative for leukocyte common antigen (LCA), cytokeratin 7 (CK7), and cluster designation 20 (CD20). Vimentin as internal control of Ag
preservation was also positive in stroma. Both morphologic features (intact mucosa of the ureter) and IHC findings (negative CK7) were in favor of an undifferentiated carcinoma. The patient was referred to the gastrointestinal (GI) clinic to look for the primary tumor. On endoscopy, there was an infiltrating gastric ulcer starting from the cardia and extending along the lesser curve halfway from the incisura (Figure 2). Biopsy showed a poorly-differentiated adenocarcinoma (Figure 3). He was referred for chemotherapy and is doing well now six months afterwards.

**Discussion**

Distant ureteral metastasis first appeared in the literature in 1909, and Schlagintweit reported the first case of gastric cancer metastasizing to the ureter in 1911. Richie et al found 160 cases in
published the literature up to 1979. Most of the
tumors were diagnosed postmortem. The most
common primary sites were breast, colon, prostate,
and cervix. Distant metastasis from gastric
carcinoma has occasionally been reported.12 – 15
Differentiating between primary and secondary
ureteral tumors may be rather difficult. MacKenzie
and Ratner8 first proposed rigid criteria for true
ureteral metastasis, stating that in metastatic
growths of ureters, malignant cells can always be
demonstrated in the perivascular lymphatic spaces
or in the blood vessels around the ureter. Later,
Presman and Ehrlich9 modified these criteria as
follows: demonstration of malignant cells in a
portion of the ureteral wall along with the absence
of any neoplasm in adjacent tissues.15 This
modified criteria has been widely accepted and
used. A focal stenosis in right mid-ureter without
tumoral lesions around the right ureter or in the
retroperitoneal space during surgery in our patient,
indicates that it was a true ureteral metastasis from
the stomach. There has been no report describing
any effective therapy for this condition.
Chemotherapeutic agents including cisplatin and 5-
fluorouracil are used for these patients with
disappointing results. Finding ureteral metastasis
implies an advanced gastric cancer even if the
primary lesion is not locally advanced.

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