Case Report

Metastatic Bladder Cancer Presenting as Duodenal Obstruction

Katherine Hawtin,[1]*FRCR*, Alex Kent,[2]*MRCP*, Carole Collins,[2]*FRCP*, Dominic Blunt,[1]*FRCR*

Abstract

Introduction: Bladder cancer is a common malignancy but presentation with metastatic disease is rare. This is the first reported case of duodenal obstruction as a presentation of metastatic bladder cancer. Clinical Picture: A middle-aged woman presented with nausea, vomiting, weight loss and intermittent haematuria. Radiology and histology confirmed metastatic bladder cancer to the retroperitoneum encasing the duodenum and causing obstruction. Treatment: Insertion of a duodenal stent relieved the obstruction and palliative chemoradiotherapy was initiated. Outcome: The patient died 15 months after diagnosis. Conclusions: Clinicians and radiologists should be aware of atypical presentations of common malignancies.

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Key words: Duodenum, Malignancy, Transitional cell carcinoma

Introduction

Bladder cancer is the most common malignancy of the urinary tract. Peak incidence is in the 6th and 7th decades although recent trends have shown an increase among younger patients.[1] The majority of patients present with lower urinary tract symptoms, the most frequent of which is painless haematuria. Presentation with metastatic disease is rare and is most likely in association with aggressive invasive tumours. We report a case of duodenal obstruction as a first manifestation of metastatic bladder cancer. To our knowledge this is the first case reported in the literature.

Case Report

A 42-year-old lady presented to gastroenterology outpatients with a 2-month history of nausea, vomiting, abdominal discomfort and weight loss of approximately 6 kg. There was no previous history of malignancy and the only relevant past medical history was an appendicectomy. Direct questioning revealed 2 episodes of haematuria over the preceding week. On examination she was cachectic and dehydrated with a succussion splash in the upper abdomen.

An endoscopy demonstrated gastric outlet obstruction; the second part of the duodenum was distorted and erythematous but there was no frank ulceration nor mucosal tumour. No malignancy was seen on biopsies taken from the area of greatest narrowing. A barium meal showed an abrupt stricture at the junction of the second/third part of the duodenum suggestive of extrinsic compression (Fig. 1). Computed tomography showed an infiltrative soft tissue mass in the retroperitoneum around the duodenum (Fig. 2), calcification in an enhancing thickened bladder wall but no significant pelvic lymphadenopathy or additional evidence of metastatic disease. A cystoscopy demonstrated a solid bladder tumour with involvement and obstruction of the right ureteric orifice and a fine needle aspirate of the retroperitoneal mass was obtained (Fig. 3).

Histology of the bladder tumour confirmed an aggressive micropapillary variant of a poorly differentiated transitional cell carcinoma with infiltration of the lamina propria and detrusor muscle. There was lymphovascular, perineural and intraneural permeation by tumour cells with further areas of carcinoma-in-situ in the urothelium.

Cytology of the retroperitoneal aspirate showed a moderately cellular sample with morphological features consistent with malignancy. The immunohistochemical profile of the retroperitoneal aspirate was consistent with urothelial origin, with metastases from lung, colon or mesothelium extremely unlikely. This cytological profile was considered diagnostic of metastatic transitional cell carcinoma from the bladder to the retroperitoneum.

Further patient management included endoscopic insertion of a duodenal stent to relieve the symptoms of outflow obstruction, and bilateral ureteric stents to treat the renal obstruction. Due to the palliative nature of the patient's therapy, no local treatment of the bladder lesion was undertaken. The patient received radiotherapy to the periduodenal mass and palliative gemcitabine and carboplatin chemotherapy. Following an initial response

[1] Department of Radiology, Imperial College NHS Trust, Charing Cross Hospital, London, UK
[2] Department of Gastroenterology, West Middlesex University Hospital, Isleworth, UK.
Address for Correspondence: Dr Katherine Hawtin, Department of Radiology, Charing Cross Hospital, Fulham Palace Road, London, W6 8RF, United Kingdom.
Email: katehawtin@doctors.org.uk

Fig. 1. Barium meal showing a stricture at the junction of the second/third part of the duodenum which was suggestive of extrinsic compression due to the smooth tapering obstruction and no mucosal irregularity.

Fig. 2. Computed tomography demonstrating a retroperitoneal soft tissue mass encasing the second/third part of the duodenum, and corresponding to the images obtained from the barium meal.

Fig. 3. Ultrasound image at the same position as Figure 2, showing an ill-defined hypoechoic lesion consistent with the soft tissue mass seen on computed tomography.

to chemotherapy, the patient relapsed and died 15 months after diagnosis.

Discussion

Metastatic tumours to the gastrointestinal tract are rare. The stomach and small bowel are the most common organs to be involved. Disease can either be intrinsic within the bowel wall or extrinsic in the surrounding tissues. Primary duodenal malignancy is rare with adenocarcinomas comprising the majority of tumours with a smaller proportion of gastrointestinal stromal tumours, carcinoid or lymphomas. The most common primary tumours to metastasise to the duodenum are lung cancer, renal cell carcinoma, malignant melanoma and breast cancer, especially the lobular subtype. Isolated case reports exist of obstruction secondary to metastases from ovary, prostate, colon, caecum, synovial sarcoma, germ cell tumour of the testis and other tumours of the genital tract. Extrinsic malignant obstruction of the duodenum commonly results from contiguous spread from adjacent organs such as the pancreas and gallbladder. While secondary involvement of retroperitoneal nodes around the duodenum is common in metastatic disease, a resulting obstruction is not. Such presentation is usually in the context of multiple metastatic or peritoneal deposits, and not as a consequence of isolated disease as demonstrated in our case.

The majority of patients with bladder cancer present with superficial tumours, while approximately 20% present with muscle-invasive disease and only 5% with clinically evident metastases which usually occur late in the natural history of the disease.[2,3] Lymph node metastases are rare in superficial tumours but increase in frequency with deep muscle involvement and extra-vesical invasion. The presence of nodal metastases is prognostically important – invasive tumours with nodal involvement have a 5-year survival of approximately 11% in comparison with 28% survival in patients without nodal involvement.[4] Metastatic spread is predominantly to bone, lungs, brain and liver. Lymphatic spread is via local pelvic nodes, followed by common iliac and paraaortic nodes with lymph nodes above the diaphragm occasionally being involved. Although uncommon, as illustrated in our case, distant metastases may be present in the absence of any regional lymph node involvement.

Metastatic spread from bladder cancer to the gastrointestinal tract is uncommon and tends to be a local manifestation involving the rectum[5-7] although metastases to the duodenum and oesophagus have been reported in an autopsy study.[8] In all these cases, the gastrointestinal spread was a manifestation of disease recurrence and not a presenting feature.

In conclusion, this is the first description of metastatic bladder cancer presenting with duodenal/gastric outlet obstruction. The case demonstrates a novel presentation of a common malignancy, and should raise awareness in clinicians and radiologists that bladder cancer can present with distant metastases in the absence of any local lymphadenopathy.

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