CLINICAL VIGNETTE

Renal Cell Carcinoma: An Uncommon Cause of Gastrointestinal Bleeding

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Introduction

Renal cell carcinoma (RCC) has the potential ability to metastasize to a large number of sites. The most frequent metastatic sites are the lung and lymph nodes, followed by the bones and liver, while duodenal involvement is rare. Intestinal metastases are found in only 2 percent of autopsies and of these, renal cell carcinoma metastases account for 7.1 percent.[1] To our knowledge, there are a limited number of cases reporting duodenal involvement from RCC. We present an unusual patient with gastrointestinal bleeding as the initial clinical manifestation of RCC metastasis.

A 56-year-old male presented to the emergency department with dark stools. Two days prior his bowel movement appeared dark, melanotic and he subsequently passed two similar bowel movements the following day. Associated symptoms included lightheadedness, pre-syncope and increasing fatigue. He denied any abdominal pain, and any significant use of NSAIDs. His past medical history includes hypertension, gout, and previous duodenal ulcer with four clips placed on 1.5-2cm nodular lesion in second part of duodenum near ampulla. Biopsy was deferred due to bleeding. A recent Contrast enhanced computed tomography (CT) of the abdomen and pelvis showed a 7 x 10 x 13cm heterogeneously enhancing solid mass involving majority of the right kidney with loss of tissue plane between the medial aspect of the right renal mass with the second portion of the duodenum. The patient was lost to follow up after discharge despite follow-up appointments with Urology and Nephrology.

The patient was admitted for concern of GI bleed. Laboratory investigations on admission were significant for normocytic hypochromic anemia with hemoglobin 6.4 g/dl, hematocrit 21.3 percent, MCV 87 fl and MCH 26.8 pg/l. Liver enzymes were within normal range.

Esophagogastroduodenoscopy was significant for a large infiltrative, polypoid and submucosal mass with no bleeding in the second part of the duodenum. Endosonographic findings showed an oval, hypoechoic and homogenous mass in the pancreatic tail measuring 18mm by 20mm. The endosonographic appearance of parenchyma and upstream pancreatic duct showed no duct dilation. Fine needle aspiration (FNA) was performed. There was normal vascular flow in the portal vein, splenic vein and superior mesenteric vein with no immediate complications. Pathology of pancreatic tail lesion showed no evidence of malignancy. General surgery service performed a right radical nephrectomy and adrenalectomy with partial duodenectomy with resection of duodenal mass and falciform pedicle transfer to the duodenal repair.

Chest CT with contrast demonstrated multiple pulmonary nodules suspicious for metastases within both lungs. A right upper lobe nodule measured 8mm in length. A central right lower lobe suspicious pulmonary nodule measured 5mm in length. A left upper lobe anterior segment dominant nodule measured 8mm in length with additional smaller nodules visualized. Interventional radiology biopsied a left lung lesion.

Surgical pathology for duodenal mass showed metastatic renal cell carcinoma, involving the right kidney and adrenal. Nephrectomy showed clear type RCC, grade III/IV measuring 15cm. Left lung core biopsies showed focal area of carcinoma, morphologically and immunologically consistent with renal cell carcinoma with immunohistologic stains positive for PAN-CK – AE1/AE3 Pancytokeratin, PAX 2 antibody stain, PAX 8 antibody stain which collectively support renal origin.

Postoperatively patient tolerated the procedure well.

Discussion

Many patients are asymptomatic until RCC is advanced. At presentation, approximately 25 percent have either distant metastases or advanced disease.[2] The classic triad of RCC (flank pain, palpable abdominal mass, hematuria) occurs in less than 10% of patients, but when present, strongly suggests locally advanced disease.[3] RCC arises from the proximal tubular epithelium of the kidney with a mean presentation between 50-70 years and male to female ratio of 3:2. Most are sporadic with 4% of cases familial.[4] RCC spreads via lymphatic, transcoelomic, hematogenous or by direct invasion.[4] Sites of RCC metastasis in descending order include the lung (75 percent), soft tissue (36 percent), bone (20 percent), liver (18 percent), cutaneous sites (8 percent), and central nervous system (8 percent).[5]

The duodenum is a very rare site of metastasis in RCC, which is counterintuitive given retroperitoneal proximity to the right kidney, and a majority (around 70%) occur from the right kidney.[6] The most common clinical presentation of gastrointestinal (GI) metastasis of RCC is GI bleeding from neoplastic invasion of intestinal vessels and/or intestinal obstruction.[7] On endoscopy, the lesion can be seen as a submucosal mass with

ulceration, raised plaques or multiple nodules of varying sizes.[8] Biopsy of suspicious lesions provides histologic diagnosis and can help differentiate primary GI cancer from metastatic disease.

This report highlights the importance of high degree of suspicion in patients with suspected RCC presenting with new clinical symptoms, including anemia and GI bleeding with timely recognition and aggressive evaluation in patients with RCC.

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