CLINICAL VIGNETTE

Renal Cell Carcinoma Metastatic to the Pancreas: A Rare Cause of Gastrointestinal Bleeding

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Case Presentation

A 64-year-old male with hypertension and history of renal cell carcinoma status post nephrectomy presented to his primary care physician with fatigue and shortness of breath over the past month. Laboratory evaluation revealed a hemoglobin of 3.8, mean corpuscular volume of 59.3 with iron level of 16, total iron binding capacity of 527, saturation of 3% and ferritin of 10. He was referred to the emergency room for hospitalization and gastroenterology consultation. He denied any bright red blood per rectum or melenic stools. He was free of abdominal pain or weight loss. His past medical history was significant for left sided renal cell carcinoma 13 years prior which was treated with laparoscopic left nephrectomy. Other past medical history includes hypertension, gout and renal insufficiency. He was not taking any non-steroidal anti-inflammatory drugs or anti-coagulants. His examination was unremarkable, except for skin pallor. Abdominal ultrasound done 2 weeks prior revealed an indeterminate lobulated heterogeneously hypoechoic structure identified in the left nephrectomy surgical bed.

Based on his iron deficiency anemia, upper endoscopy and colonoscopy were scheduled. Upper endoscopy showed a 5 cm hiatal hernia, as well as a 1 cm duodenal ulcer without stigmata of hemorrhage that was biopsied and revealed small intestinal mucosa with normal villous architecture showing no significant histopathologic abnormality. Colonoscopy showed an 8 mm polyp in the descending colon that was removed by hot snare polypectomy with biopsy revealing an inflammatory polyp. The patient was then discharged with pantoprazole twice a day with hemoglobin at 8.4. MRI abdomen performed prior to discharge and revealed a right hepatic lobe mass, measuring 3.5 x 3.7 x 3.2 cm. He subsequently underwent IR guided biopsy of the liver mass, with pathology confirming renal cell carcinoma.

Two weeks later, the patient started having melena again and went to the emergency room. Laboratory evaluation showed a hemoglobin of 6.5. An upper endoscopy was performed and showed a 3 cm duodenal ulcer with visible vessel that was oozing blood. The visible vessel was injected with 8 ccs of 1:10000 epinephrine and 2 hemoclips were placed with appropriate hemostasis. MRI of the liver was then performed to further evaluate the mass. MRI of the liver showed a liver segment 7 T2 hyperintense enhancing lesion measuring up to 4.1 cm and peripancreatic masses subsuming the gastroduodenal artery and abutting the main portal vein and IVC.

Interventional radiology performed angiography which showed tumor blush from branches of the gastroduodenal artery, splenic artery and inferior pancreaticoduodenal artery. Coil embolization was performed of the gastroduodenal artery and inferior pancreatioduodenal artery. The patient then stopped having any further melena and was discharged for follow up with his oncologist.

Discussion

Metastatic tumors to the pancreas are uncommon. Renal cell carcinoma is one of the few tumors known to metastasize to the pancreas.[1] At presentation, approximately 25% of individuals with renal cell carcinoma either have distant metastases or advanced loco-regional disease.[2] The most common sites of involvement include the lungs, lymph nodes, bone, liver, and brain. Pancreatic metastases occur with a reported incidence varying from 1.6% to 11% in autopsy studies of patients with advanced malignancy.[3]

In clinical series, the frequency of metastases to the pancreas ranges from 2% to 5% of all pancreatic malignant tumors. The tumors that metastasize most commonly to the pancreas are renal cell carcinoma, lung cancer, lobular breast carcinoma, and colorectal cancer, followed by melanoma, soft-tissue sarcoma and a large number of other neoplasm.[4] Renal cell carcinoma may spread to the pancreas as the only secondary site causing an isolated pancreatic metastasis.[5] Multiple lesions throughout the pancreatic gland have been more frequently detected in patients with renal cell carcinoma than in those with other primary tumors.[6]

In terms of clinical presentation, approximately 55% of patients with renal cell carcinoma affecting the pancreas are asymptomatic and the disease may only manifest after a long period.[7] Most studies report mean time intervals of greater than 10 years during which the patient may be disease free. Isolated pancreatic metastases are often discovered during surveillance imaging for primary lesions as an incidental finding. Therefore, it is essential to have long term follow-up for renal cell carcinoma. For patients who have clinical manifestations the more common symptoms include: weight loss, abdominal pain, gastrointestinal bleeding caused by duodenal involvement, jaundice, and pancreatitis due to pancreatic duct obstruction.

The diagnosis of pancreatic metastasis is usually made on radiological or endoscopic criteria as most patient do not present with symptoms. Imaging features of metastatic pancreatic tumors point to their primary origin. Renal cell carcinoma metastases are usually hypervascular and show intense homogenous contrast enhancement in the arterial phase. Endoscopic ultrasound is a highly sensitive diagnostic method to detect pancreatic lesions. Pancreatic metastases appear as solid intraparenchymal space-occupying lesions with an internal structure that is much more hypo echoic than the normal pancreatic tissue.[8]

Surgical treatment is recommended for the management of isolated pancreatic metastasis, if possible. Surgical management is adapted to the location of the tumor in terms of partial pancreaticoduodenectomy, distal pancreatectomy and total pancreatectomy. Seven of twelve studies reported a 5-year survival rate of higher than 80% from the time of pancreatic metastasectomy. In the case of unresectable disease, endoscopic palliation with chemotherapy and radiotherapy can improve quality of life but not survival.

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