Obscure gastrointestinal bleeding from an ampullary tumour in a patient with a remote history of renal cell carcinoma: A diagnostic conundrum

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Identifying an upper gastrointestinal bleed from a small bowel source is often difficult and frustrating. The source of bleeding is usually beyond the reach of the conventional gastroscope and far proximal to the maximal extent of ileoscopy with a conventional colonoscope. Endoscopic options include enteroscopy with a pediatric colonoscope or ‘Sonde-type’ enteroscopy (1), which is not readily available in most centres. Radionuclide tagged red blood cell scans and angiography will only be of value during active bleeding and may appear to produce a false negative result if the active

Saignement gastro-intestinal obscur d’une tumeur ampullaire chez un patient présentant des antécédents lointains de cancer du rein : méandre diagnostique

RÉSUMÉ : Les métastases du cancer du rein vers l’amoula de Vater sont un phénomène rare. Le cas présenté ici, soit un saignement des voies digestives supérieures, n’est que le huitième du genre signalé dans la littérature de langue anglaise. Il s’agit du plus long intervalle entre la néphrectomie et l’apparition de la métastase ampullaire, après 17 ans et demi. La source ampullaire de l’hémorragie dans ce cas a été difficile à identifier et n’a pu être décélée par gastroscopie classique. Le diagnostic a été posé au moyen d’un endoscope à vue latérale, ce qui souligne l’utilité de cet instrument pour le diagnostic de l’hémorragie active du petit intestin.

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bleeding is only intermittent. Conventional radiographic imaging techniques to search for mucosal abnormalities, such as the small bowel follow-through study and enteroclysis, may not be practical options in hemodynamically unstable acutely bleeding patients.

We present a patient who presented with recurring upper gastrointestinal bleeding from a periampullary metastatic renal cell carcinoma many years after surgical resection. This case is clinically interesting for several reasons. From the diagnostic standpoint, it illustrates the challenge of the obscure upper gastrointestinal bleed. Furthermore, this case is only the eighth case of a periampullary renal cell cancer to be reported in the English language (2-7). This case also comprises the longest reported interval of renal cell carcinoma metastasis at this site after primary surgical 'cure'.

**CASE PRESENTATION**

A 75-year-old Caucasian man presented with a 24 h history of passing maroon-coloured stools and an initial hemoglobin of 53 g/L (normal 133 to 175 g/L). Five weeks previously he had been hospitalized after a similar presentation. During that hospitalization, an emergency gastroscopy revealed esophagitis grade II/IV (8). A follow-up upper endoscopy revealed evidence of a Mallory-Weiss tear.

Past medical history revealed that 17.5 years previously the patient had undergone a left total nephrectomy for renal cell carcinoma. No adjuvant radiation or chemotherapy had been administered, and the malignancy was regarded as being surgically cured with no evidence of recurrence. Other concurrent medical problems included chronic renal failure with a serum creatinine of 335 μmol/L (normal less than 135 μmol/L).

After the patient was resuscitated with intravenous fluids and transfusion of packed red blood cells, upper endoscopy was once again performed. Endoscopy revealed a substantial volume of blood in the fundus. There was a clot on the anterior wall of the stomach near the greater curvature. There was no other evidence of ulceration, and duodenoscopy into the second and third parts of the duodenum revealed only some pooled blood. Following the gastroscopy, a tagged-red cell radionuclide scan was performed. No active bleeding was seen until after 180 mins, when the patient vomited. The source of bleeding appeared to be either the stomach or the jejunum.

The patient was returned to the endoscopy suite and the gastroscopy repeated. This time no evidence of clot was seen in the stomach. Passage of the gastroscope into the duodenum gave the impression of a possible mass in the periampullary area. An endoscopic retrograde cholangiopancreato graphic (ERCP), side-viewing endoscope was then intubated into the upper gastrointestinal tract. By using a short-scope technique, the ampullary region was well-visualized. A large periampullary tumour was clearly seen (Figure 1).

A magnetic resonance imaging scan was then obtained, which revealed a 5 cm periampullary mass extending into the head of the pancreas. The liver was unremarkable, but two lesions were noted in the spleen. The patient was taken to surgery, and a total pancreatectomy, duodenectomy and cholecystectomy and splenectomy were performed.

Histologic examination of the resected specimen showed metastatic renal cell carcinoma of the clear cell type (Figure 2) involving the full thickness of the duodenal wall without extension into the pancreas or the pancreatic duct. Incidental findings included a cystic mucinous pancreatic tumour that was of borderline malignant potential and an epithelioid hemangioendothelioma of the spleen.

The patient was eventually discharged home after a protracted period of convalescence.
DISCUSSION
Renal cell carcinoma comprises only 2% of all cancers (9). The treatment of localized tumours is surgical nephrectomy. Even with a surgical resection with curative intent, 20% to 30% of these tumours will recur (9). The site of recurrence is typically distant from the original nephrectomy site, usually the lung, liver, bone or brain (10). Less common sites of metastasis include the gallbladder, urinary bladder and corpus cavernosum (10). Tumour recurrence most often occurs within three years of the initial nephrectomy (10), and the longer the recurrence-free period from the time of surgery, the better the likelihood of true surgical cure.

Isolated solitary renal cell carcinoma metastases are uncommon, with an incidence of approximately 1% to 2% (10). Surgical resection of these solitary metastases is associated with a five-year survival of 35% (10). Renal cell carcinoma metastases presenting as periampullary masses – indistinguishable endoscopically from primary ampullary carcinomas – are decidedly rare. To our knowledge, our patient is only the eighth reported case in the English language literature of renal cell carcinoma to present as a periampullary tumour. From the eight previously reported cases (2-7) and from our own case, it appears that the primary renal cell carcinoma is typically left-sided (2-6), with men predominantly affected (2,3,5,6). The primary renal cancer stages of these cases were evenly divided between stages 1 and 3 before periampullary presentation (Table 1) (11). The majority of cases, including ours, presented with a gastrointestinal bleed (2,3,5). Other reported presenting symptoms included jaundice (4) and malabsorption (6). The interval between original nephrectomy and periampullary presentation is typically long, median 10 years (range one to 12 years) (2-6). Our patient presented 17 years and six months after the original nephrectomy, which is the longest interval period yet reported, illustrating the insidious nature of these neoplasms.

Metastatic tumours to the periampullary region are very rare as are metastases to the upper gastrointestinal tract in general (12). A recent review series from Johns Hopkins University of 239 pancreatocoduodenectomies for malignant disease found only six periampullary metastatic cancers (2.5%): one each of renal cell carcinoma, squamous lung cancer, small cell lung cancer and breast cancer, and two colonic cancers (7). Surgical options in the treatment of metastatic periampullary metastatic carcinomas include pancreatocoduodenectomy (13) – the standard surgical treatment for primary ampullary carcinomas – and, in one report, posthormonal (megestrol acetate) pancreatotomy (3). Despite the report of success with adjuvant hormonal therapy in this one case, conventional chemotherapy and hormonal agents have little effect on renal cell carcinoma (14). Similarly, the effect of biological immune modifying agents (eg, interferon), which have been reported to be of some value in the treatment of metastatic renal cell carcinoma (10,15,16), is unknown in the setting of gastrointestinal metastases.

Endoscopic nonsurgical therapeutic options in the face of biliary obstruction include percutaneous stenting (4) and standard ERCP, and sphincterotomy with stenting (6). Although a nonsurgical approach to metastatic disease may seem appealing, the patient may have a very favourable postsurgical outcome. The investigators from Johns Hopkins University reported long term survival ranging from 12 to 60 months after resection in 66% of their patients (7). Certainly with active gastrointestinal bleeding, such as our patient experienced, surgical resection seems to be definitive therapy unless the clinical circumstances dictate otherwise.

The interesting aspect of this case was the difficulty identifying a source of upper gastrointestinal bleeding in a patient with intermittent blood loss. The tumour – the source of bleeding – was only unequivocally diagnosed with the use of a side-viewing ERCP endoscope. Although conventional diagnostic imaging modalities such as small bowel follow-through and computed tomographic scan also would have visualized the tumour, these techniques may not be practical in an actively unstable bleeding patient, especially during nonworking hours. Venu and associates (3) have also commented on the necessity of a side-viewing endoscope to assess the ampulla of Vater as a possible source of upper gastrointestinal bleeding.

CONCLUSIONS
A periampullary tumour is a rare but reported presentation of a remote renal cell carcinoma. Our case and those reported in the literature suggest that most with periampullary metastases are males with originally left-sided primary cancers. The staging of the original renal cancer does not correlate with metastasis in this location, and a periampullary recurrence may present many years after nephrectomy. The side-viewing endoscope is an essential instrument in the diagnosis of these tumours, which should be considered in all cases of obscure upper gastrointestinal bleeding.

REFERENCES
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