CASE REPORT

Renal cell carcinoma presenting as an upper gastrointestinal bleeding

Mohamed Osama Mohamed,¹ Sinan Al-Rubaye,² Ian William Reilly,³ Stephen McGoldrick⁴

¹Queen Elizabeth Hospital Birmingham, Birmingham, UK

²Department of Gastroenterology, Aintree University Hospitals, Lower Lane, Liverpool, Liverpool, UK

³Department of Gastroenterology, Wirral University Teaching Hospital NHS FT, Wirral, UK

⁴Department of Gastroenterology, Mid Cheshire Hospitals NHS Foundation Trust, Crewe, UK

Correspondence to

Dr Mohamed Osama Mohamed, mohamedosama@hotmail.co.uk

Accepted 28 July 2015

SUMMARY

An 80-year-old man presented with melaena and anaemia of 1 week duration. This was associated with shortness of breath and an indigestion-type pain for the preceding 8 weeks. General physical examination revealed epigastric tenderness, but an otherwise soft abdomen with no organomegaly. The patient had a gastroscopy, showing a polypoidal lesion in the second part of duodenum (D2) as the bleeding point, which was managed with epinephrine injection and endoclips. This was followed by CT of the abdomen, revealing a lobulated 8 cm mass arising from the lower pole of the right kidney and invading the duodenum. The case report aims to acknowledge the possibility of direct duodenal involvement in renal cell carcinoma, which is a rare occurrence.

BACKGROUND

In the UK, kidney cancer is the eighth most common cancer, of which 35% of cases present in the 75 years or older age group. The condition has always been implicated with typical presentations comprising one or a combination of the following: macroscopic haematuria, weight loss and a palpable loin mass. A rare mode of presentation that has previously been described in the literature is direct duodenal invasion. It is important to note that only the second part of the duodenum has direct anatomical relation to the right kidney anteriorly. We report a case of an 80-year-old man presenting with an unusual form of duodenal involvement secondary to a renal cell tumour.

CASE PRESENTATION

An 80-year-old man was admitted due to passing black stools over the week preceding admission, associated with indigestion-type abdominal pain for the same duration. He had a marked anaemia, which was symptomatic with shortness of breath as the main feature. He denied any weight loss or increased appetite. The patient's vital signs were stable, apart from a compensatory sinus tachycardia.

His medical history of note was hiatus hernia; type II diabetes mellitus; chronic obstructive pulmonary disease and essential hypertension. The patient was an ex-smoker with a 30 pack-year smoking history.

On admission, he had further melaena, and thus an urgent gastroscopy was performed, which revealed a polypoidal mass arising from anterior second part of duodenum as the source of bleeding.

This was injected with epinephrine and endoscopically clipped.

Further to the gastroscopy, a contrast-enhanced CT of the abdomen/pelvis was requested to ascertain the nature of the mass. This surprisingly revealed an 8 cm mass arising from the lower pole of right kidney, with no fat plane to anatomically separate it from the duodenum, as what would be expected, indicating direct invasion into the duodenum.

The patient's case was discussed with the surgical team, who were in agreement that, in view of the patient's comorbidities and poor prognosis of the cancer staging, a palliative approach should be undertaken.

INVESTIGATIONS

Routine blood tests demonstrated normocytic normochromic anaemia and raised urea, which were consistent with our suspicion of upper gastrointestinal bleeding in this case. Liver functions were normal.

An oesophagogastroduodenoscopy was performed, revealing a bleeding polypoidal mass within the second part of the duodenum (D2). This was treated endoscopically with epinephrine injections and three endoclips. The appearance of the lesion was suspicious of a gastrointestinal stromal tumour (GIST) or polyp, but duodenal varix was an important differential diagnosis to consider. However, the latter was felt less likely in appearance, particularly after endotherapy (figure 1).

Figure 1 Gastroscopy revealing a polypoidal mass protruding from the anterior second part of the duodenum.

CrossMark

To cite: Mohamed MO, Al-Rubaye S, Reilly I W, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2015-211553

Further to this, a contrast-enhanced CT of the abdomen and pelvis was performed to further assess the nature of the mass. It revealed a lobulated 8 cm mass arising from the lower pole of the right kidney with no clear fat plane between the second part of the duodenum and right kidney mass. This was a picture of duodenal invasion by renal cell tumour. Additionally, it showed a distended right renal vein and inferior vena cava (IVC), with low attenuation within the IVC, which was highly suspicious of a tumour thrombus. There was no radiological evidence of duodenal varix (figure 2).

An oesophagogastroduodenoscopy was carried out, revealing a bleeding polypoidal mass within the second part of the duodenum. This was treated endoscopically with epinephrine injections and three endoclips. The appearance of the lesion was suspicious of a GIST or polyp, but duodenal varix was an important differential diagnosis to consider. The latter, however, was felt less likely in appearance, particularly post endotherapy (figure 1).

Further to this, a contrast-enhanced CT of the abdomen and pelvis was performed to further assess the nature of the mass. It revealed a lobulated 8 cm mass arising from the lower pole of the right kidney with no clear fat plane between the second part of the duodenum and right kidney mass. This was a picture of duodenal invasion by renal cell tumour. Additionally, it showed a distended right renal vein and IVC, with low attenuation within the IVC, which was highly suspicious of a tumour thrombus. There was no radiological evidence of duodenal varix (figure 2).

DIFFERENTIAL DIAGNOSIS

Peptic ulcer disease prior to endoscopy was the most suspected working diagnosis.

Given the appearance of the mass during gastroscopy, other differential diagnoses such as an intestinal polyp versus GIST were raised. Furthermore, considering the patient's significant history of alcohol intake, the possibility of a duodenal varix remained an important differential for exclusion.

OUTCOME AND FOLLOW-UP

The patient was treated supportively as part of a palliative approach, based on the expected prognosis in view of his staging, and his personal wishes. He therefore did not proceed with assessment for chemotherapy and preferred discharge with supportive treatment from the hospital-at-home team.

Figure 2 CT of the abdomen section showing the mass arising from the lower pole of the right kidney and invading into the duodenum with endoscopic clips applied to the protruding portion of the duodenum.

DISCUSSION

Kidney cancer is the eighth most common cancer in the UK.^{1 2} Worldwide, it comprises 2–3% of all malignancies. In the past 10 years, kidney cancer incidence rates in the UK have increased by almost a third.

Risk factors identified include smoking, obesity and hypertension, long-term renal dialysis, tuberous sclerosis, renal transplant recipients, acquired renal cystic disease and von Hippel-Lindau disease.²

Currently, more than 50% of renal cell carcinoma (RCCs) are detected incidentally when non-invasive imaging is used to investigate a variety of non-specific symptoms and other abdominal diseases.³

The classical triad of loin pain, haematuria and flank mass has now become increasingly uncommon. Additionally, 30% of patients with symptomatic RCC display features of a paraneoplastic syndrome.³

Spread of RCC could be lymphatic, haematogenous, transcoelomic, or through direct invasion. The most common sites of metastases in decreasing frequency include lung, lymph nodes, bone and liver, and, rarely, pancreatic metastases.

Treatment options depend, as with all tumours, on the stage and spread at the time of diagnosis. With the only curative treatment being radical nephrectomy in suitable patients, options range from radical or partial nephrectomy and nephron-sparing surgery for localised disease to palliative approaches such as chemotherapy, immunotherapy or radiotherapy in metastatic RCC.³

In this case, we present a patient whose initial presentation was due to upper gastrointestinal bleeding (melaena) with no classical features of RCC. To the best of our knowledge, this is one of few cases of direct duodenal involvement in RCC, as our search has yielded to matching cases.^{4–7} The vast majority of relevant case reports describe the more recognised metastatic route.^{8–14}

This report and the supporting literature search demonstrate that by investigating those patients presenting with GI bleed, we may in fact find an index presentation for an advanced malignancy such as RCC, as in this case. We acknowledge this is rare and present this case as an interesting differential for upper GI haemorrhage.

Learning points

- ▶ Renal cell carcinoma should be recognised as a possible rare cause of gastrointestinal bleeding when a duodenal mass is found on endoscopy.
- ▶ We would advocate proceeding directly to CT imaging of the abdomen in such a case to quickly clinch the diagnosis, and to avoid delay in further definitive management via liaison with the surgical team.
- ▶ The classical triad of loin pain, haematuria and flank mass as a mode of presentation for renal cell carcinoma has become increasingly rare, and we should expect more incidental findings with the increased use of cross-sectional imaging.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Cancer Research UK Statistical Information Team. Kidney cancer statistics. http://publications.cancerresearchuk.org/downloads/Product/CS_KF_KIDNEY.pdf (accessed 9 Jun 2014).
- 2 Tidy C. Patient.co.uk—Doctor—Kidney cancer. <http://www.patient.co.uk/doctor/renal-cancer> (accessed 9 Jun 2014).
- 3 Ljungberg B, Bensalah K, Bex A, *et al.* Guidelines on renal cell carcinoma. *Eur Association Urol* 2013.
- 4 Street R, Brady J, Slobodav G. Renal cell carcinoma presenting with Melena from direct invasion into the duodenum: a case report and a review of literature. *J Okla State Med Assoc* 2013;106:477–9.
- 5 Chang WT, Chai CY, Lee KT. Unusual upper gastrointestinal bleeding due to late metastasis from renal cell carcinoma: a case report. *Kaohsiung J Med Sci* 2004;20:137–41.
- 6 Schluskel AT, Fowler AB, Chinn HK, *et al.* Management of locally advanced renal cell carcinoma with invasion of the duodenum. *Case Rep Surg* 2013;2013:596362. <http://www.hindawi.com/journals/cris/2013/596362/cta/> (accessed 3 May 2015).
- 7 Bekci T, Aydin R, Aslan K. A unique presentation of renal cell carcinoma: both upper and lower gastrointestinal bleeding. *Am J Emerg Med* 2013;31:1622.e3–4. [http://www.ajemjournal.com/article/S0735-6757\(13\)00399-9/abstract](http://www.ajemjournal.com/article/S0735-6757(13)00399-9/abstract) (accessed 21 Jul 2015).
- 8 Roumen RM, Corten RL, Meijer JW. Rectal bleeding as the first clinical symptom of renal cell carcinoma. *Neth J Surg* 1989;41:117.
- 9 Janzen RM, Ramj AS, Flint JD, *et al.* Obscure gastrointestinal bleeding from an ampullary tumour in a patient with a remote history of renal cell carcinoma: a diagnostic conundrum. *Can J Gastroenterol* 1998;12:75–8.
- 10 Pompa DJ, Carethers JM. Occult gastrointestinal bleeding and colonic mass lesion as initial presentation of renal cell carcinoma. *J Clin Gastroenterol* 2002;35:410–12.
- 11 Loualidi A, Spooren PF, Grubben MJ, *et al.* Duodenal metastasis: an uncommon cause of occult small intestinal bleeding. *Neth J Med* 2004;62:201–5.
- 12 Ando S, Fukuhara Y, Miyazaki J, *et al.* [Renal cell carcinoma with bilateral adrenal and small intestinal metastases: a case report]. *Nihon Hinyokika Gakkai Zasshi* 2006;97:64–7.
- 13 Zhao H, Han K, Li J, *et al.* A case of wedge resection of duodenum for massive gastrointestinal bleeding due to duodenal metastasis by renal cell carcinoma. *World J Surg Oncol* 2012;10:199.
- 14 Hwang SM, Kuyava JM, Grande JP, *et al.* Metastatic renal cell carcinoma mimicking diverticulitis in a patient with chronic lymphocytic leukaemia. *BMJ Case Rep* 2015. <http://casereports.bmj.com/content/2015/bcr-2014-206101.full> (accessed 21 Jul 2015).

Copyright 2015 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow