

A Journey from Renal Cell Carcinoma to Intestinal Metastasis: A Case Report

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ABSTRACT

Renal cell carcinoma (RCC) is one of the most common primary renal cancers. Its metastasis to the duodenum is a rare occurrence. Commonly reported symptoms are bleeding, anaemia, and flank pain. This report discusses a case of a 74-year old male with no known comorbidities, who was diagnosed with clear cell RCC in 2008. The patient underwent a left radical nephrectomy in 2008, followed by a right partial nephrectomy in 2016. In 2023, he presented with an ulcerated polyp located in the D1 region during an oesophagogastroduodenoscopy (OGD) examination. It is essential to assess RCC for any distant metastases. Additionally, when a patient is presented with severe multiple symptoms, prompt diagnosis and early intervention should be prioritised for effective management.

Key Words: Renal cell carcinoma, Cancer, Metastasis, Duodenum, Prognosis.

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INTRODUCTION

Renal cell carcinoma (RCC) is the most common form of renal cancer.¹ Approximately 25-30% of patients diagnosed with RCC develop metastatic disease.² The most frequently involved sites of metastasis are the lungs, lymph nodes, bones, liver, and adrenal glands.³ While metastasis of RCC to small intestine and pancreas is rare, gastrointestinal bleeding may occur in such patients, which can serve as an early potential indication of the involvement of these organs.⁴ The case of a 74-year old male patient, with no known comorbidities, diagnosed with clear cell RCC, who later presented with a large D1 ulcerated polyp in the small intestine on oesophagogastroduodenoscopy (OGD), is discussed in detail.

CASE REPORT

A debilitated 74-year old patient from Peshawar, with no known comorbidities, came to the outpatient clinic on a wheelchair. In his past medical history, in May 2008, he had presented to the emergency department (ED) with a high-grade fever (101-102F). After conducting out baseline investigations, abdominal ultrasound (US) was performed, which showed a large left renal mass. CT abdomen and pelvis showed a large irregular mass at the renal pelvis with no distant metastasis. Then, he underwent a left radical nephrectomy in June 2008. In 2017, the patient again experienced fever spikes and haematuria. Thus, he came to the walk-in clinic at our hospital.

CT abdomen and pelvis showed a right renal mass with an intermediate solitary nodule in the right lower pole. TNM staging was T2N0M0, indicating no nodal involvement or metastasis. A PET scan was not advised. A diagnosis of primary RCC was made. The patient was discussed in a multidisciplinary tumour board (MDT), where a partial nephrectomy was advised. He underwent a right partial nephrectomy on 17 August 2017. On 22 April 2021, he presented to the ED with one episode of gross haematuria. CT abdomen and pelvis showed no acute findings. On 11 February 2023, he had a second episode of gross haematuria. Later, during the same year, in October, he presented with postural hypotension, body aches, and melena. His haemoglobin (Hb) levels dropped to 4.7 g/dl. He was discharged after a blood transfusion of 3 units and Hb of 6.6 g/dl. OGD showed a large D1 ulcerated polyp that bled early upon contact (Figure 1). CT scan also showed a mass in the first part of the duodenum (Figure 2A-B).

Endoscopic biopsy came back negative for any malignancy. It was rediscussed in an MDT meeting, and a high-risk polypectomy was recommended. At that time, the patient was severely anaemic and wheelchair-bound. On February 1, 2024, he underwent a distal gastrectomy with D1 resection. Postoperatively, the patient showed remarkable functional improvement. Post-operative histopathology examination of the duodenal wall revealed infiltration by sheets of atypical polygonal cells with clear cytoplasm (clear cells) and sarcomatoid features. The resection margins were tumour-free.

DISCUSSION

RCC arises from the epithelial cells of the renal tubules and represents more than 90% of primary kidney tumours.⁵ The classic triad of flank pain, haematuria, and a palpable abdominal mass is rarely seen in practice, occurring in only 4-17% of patients. More commonly, patients exhibit vague symptoms, such as abdominal discomfort, fever, fatigue related to anaemia, haematuria, weight

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reduction, or signs linked to metastatic spread, such as bone pain or respiratory issues.⁶

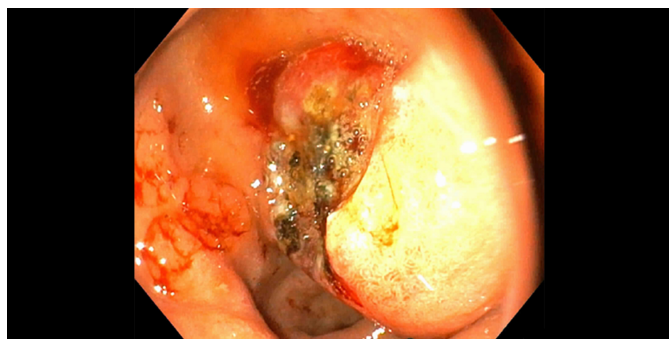


Figure 1: Upper gastrointestinal endoscopy showing an ulcerated tumour in the first part of the duodenum with minor bleeding.



Figure 2: CT scan abdomen. (A) A sagittal view showing a mass lesion in the first part of the duodenum. (B) Coronal section from CT image showing the mass lesion as in A. The mass approximately measured 2x1.8x2.2 cm.

Metastasis to the small intestine from RCC is extremely rare due to the retroperitoneal location of the kidneys. The most frequent sites of metastasis include the lungs, lymph nodes, liver, bones, adrenal glands, and brain. When the small bowel is involved, it typically affects the jejunum or ileum and results from haematogenous spread or direct invasion. Clinical signs in these cases often present significant gastrointestinal bleeding or symptoms of obstruction.⁷

This case determines the significance of patient awareness and the effectiveness of diagnostic tools such as imaging and endoscopy in the ongoing evaluation of RCC. Considering the tumour's capability for unusual metastatic patterns, a thorough and detailed diagnostic strategy is essential. Importantly, the patient's active participation, adherence to medical recommendations, and trust in the healthcare team are key factors in achieving a positive outcome.

Prompt diagnostic assessment and early therapeutic intervention play a key role in optimal disease control and clinical recovery among patients diagnosed with RCC.

PATIENT'S CONSENT:

An informed written consent was taken from the patient in the presence of an attendant as a witness.

COMPETING INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

MA: Data collection and manuscript writing.

AUK: Images and commentary under images.

SIK: Proofreading and manuscript writing.

MW: Data collection.

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