



## Case Report

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# Gastric Metastasis from RCC Presenting as Hematemesis

Sonu Sharma\*, Rajinder Yadav, Puneet Bansal, Shobhna Sharma

\*Fortis Hospital, Shalimar Bagh, India

\*Corresponding author: Sonu Sharma, Fortis Hospital, Shalimar Bagh, India

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## Abstract

**Introduction:** Gastrointestinal metastasis is an exceptionally uncommon occurrence, representing a mere 0.2–0.7% of gastric neoplasms. Metastatic disease is frequently documented in association with breast cancer (27%), lung cancer (23%), and melanoma (7%). Nevertheless, occurrence of gastric metastasis from RCC is an infrequent phenomenon.

**Case Presentation:** A 57-year-old male presented with a 7-day history of haematuria and abdominal pain. His medical history included diabetes mellitus and coronary artery disease and receiving anticoagulants. USG abdomen revealed a 64\*54mm mass in the left lower pole. MRI KUB suggested 66\*71\*69mm from the lower pole abutting renal vein, PCS, proximal ureter, and descending colon, with no renal vein thrombus. Subsequently, he underwent a laparoscopic radical nephrectomy and HPE revealed clear cell carcinoma. Later, he presented with hematemesis. CT scan indicated a 25\*20mm polypoidal endophytic lesion with central non-enhancing area seen arising from the fundus of stomach for which upper gi scopy was done which revealed large gastric polyp at fundus biopsy taken which revealed adenocarcinoma, IHC supported the diagnosis of metastatic RCC. He underwent lap-wide excision of the polyp, biopsy suggested deposits of CCC with clear surgical margins.

**Conclusion:** Clinical manifestations resulting from gastric metastases include blood loss, anemia, melena, pain in abdomen, and dyspepsia. Endoscopy plays a crucial role in both diagnosis and formulation of treatment plans. Typically, metastatic disease is predominantly located in the submucosal layer with clear-cell histology as the most common form. In patients of RCC, gastric metastasis is often observed as a late event. Localized treatment, such as endoscopy and surgery, contemplated by systemic approaches could improve survival, especially in the era of immunotherapy in combination with or associated with TKI.

**Keywords:** RCC; metastasis; gastric; solitary; hematemesis

## Abbreviations

RCC: Renal Cell Carcinoma

CCC: Clear Cell Carcinoma

MRI: Magnetic Resonance Tomography

KUB: Kidney-Ureter-Bladder

PCS: Pelvicalyceal System

HPE: Histopathological Examination

CT: Computed Tomography

IHC: Immunohistochemistry

H &amp; E: Hematoxylin and Eosin

PET: Positron Emission Tomography

GI: Gastrointestinal

CK: Cytokeratin

CEA: Carcinoembryonic Antigen

CD: Cluster of Differentiation

TKI: Tyrosine Kinase Inhibitor

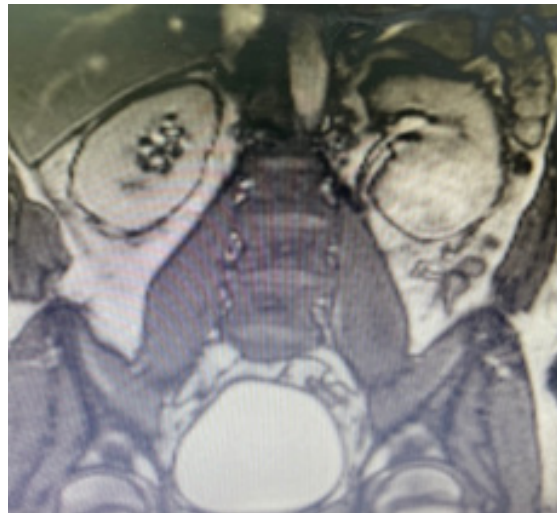
## Background

Gastrointestinal metastasis is an exceptionally uncommon occurrence, representing a mere 0.2–0.7% of gastric neoplasms [1,2]. Metastatic disease is frequently documented in association with breast cancer (27%), lung cancer (23%), and melanoma (7%). Nevertheless, occurrence of gastric metastasis from RCC is an infrequent phenomenon. We report a rare case of gastric metastasis from RCC causing hematemesis.

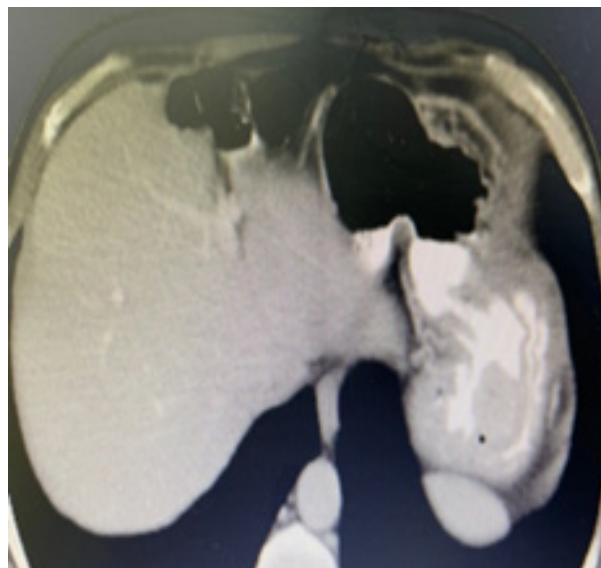
## Case Presentation

A 57-year-old male presented with a 7-day history of haematuria and abdominal pain. His medical history included diabetes mellitus and coronary artery disease and receiving anticoagulants. USG

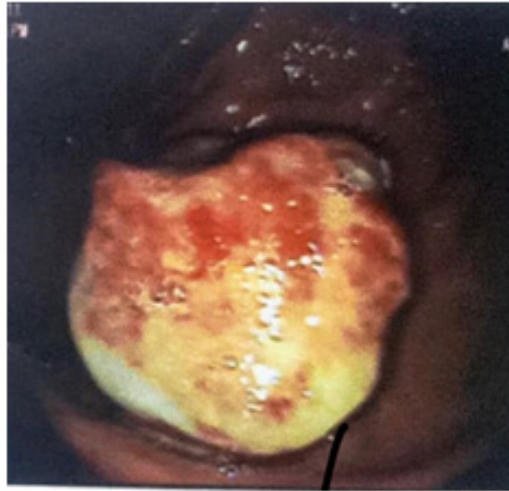
abdomen revealed a 64\*54mm mass in the left lower pole. MRI KUB suggested 66\*71\*69mm from the lower pole abutting renal vein, PCS, proximal ureter, and descending colon, with no renal vein thrombus (Figure 1). Subsequently, he underwent a laparoscopic radical nephrectomy and HPE revealed clear cell carcinoma. Later, he presented with hematemesis. CT scan indicated a 25\*20mm polypoidal endophytic lesion with central non-enhancing area seen arising from the fundus of stomach (Figure 2) for which upper gi scopy was done which revealed large gastric polyp at fundus (Figure 3) biopsy taken which revealed adenocarcinoma, IHC supported the diagnosis of metastatic RCC (Figure 4). He underwent lap-wide excision of the polyp (Figure 5), biopsy suggested deposits of CCC with clear surgical margins. Follow-up PET CT and upper GI scopy was normal.



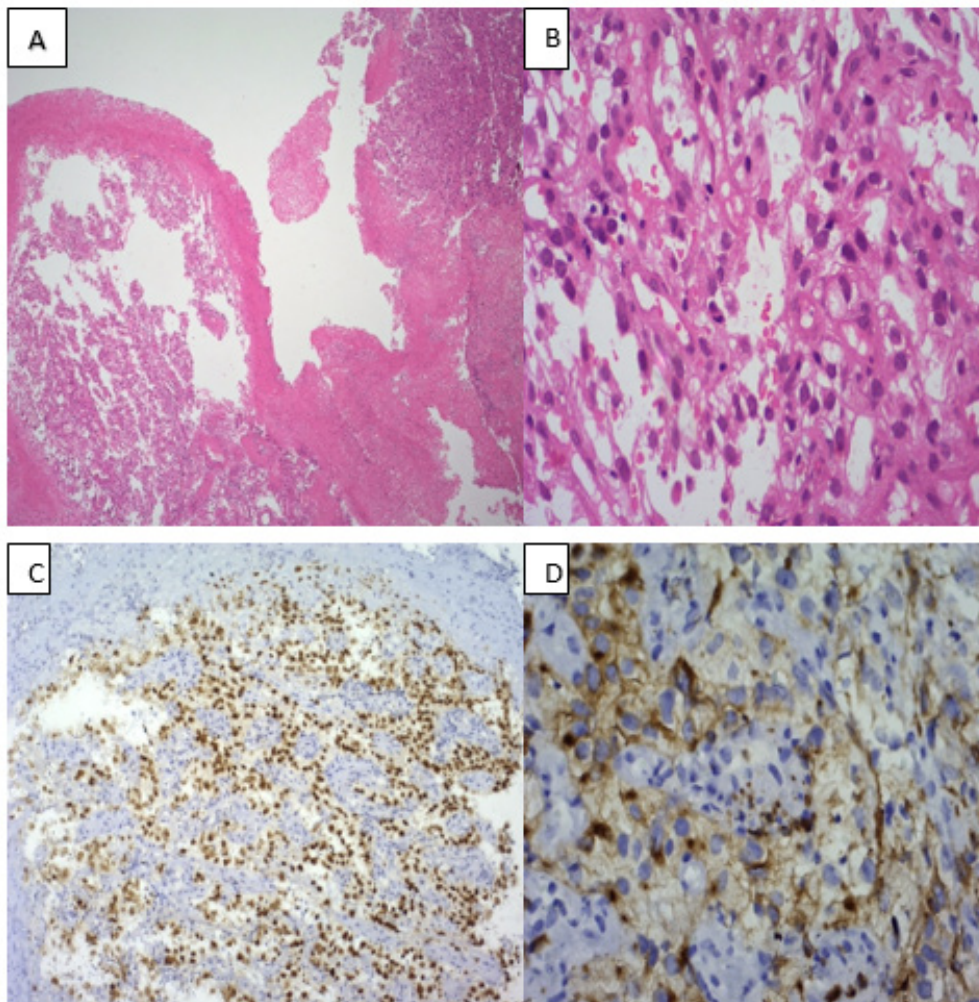
**Figure 1:** Left lower pole mass on MRI.



**Figure 2:** Mass in stomach on CT scan.

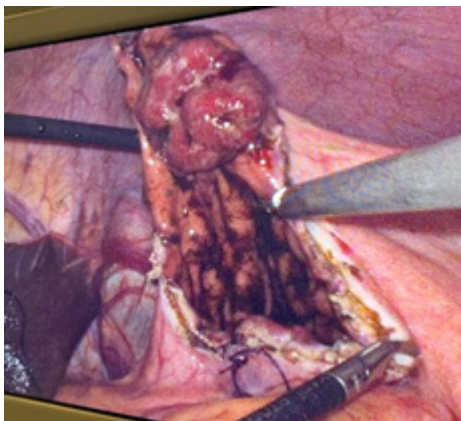


**Figure 3:** Large gastric polyp.



**Figure 4:** (A) polypoid tissue fragments with surface ulceration (H&E x40), (B): Nests of malignant epithelial cells showing hyperchromatic nuclei with prominent nucleoli and moderate clear cytoplasm (H&E x400), (C): Positive nuclear staining for PAX8 (IHC x100), (D): Positive cytoplasmic and membranous staining for CD10 (IHC x400).





**Figure 5:** Intraoperative excision of gastric polyp.

## Conclusion

More often, metastatic disease has been commonly labelled in association with breast cancer (27%), lung cancer (23%), and melanoma (7%). However, gastric metastasis from RCC is a rare occurrence [3,4]. Gastric metastases are often associated with spectrum of clinical manifestation, including blood less, anemia, melena, abdominal pain and dyspepsia. In our case, patients were presented with hematemesis and anemia [5,6]. In the evaluation of gastric metastases, endoscopy emerges as a pivotal diagnostic tool with implications for subsequent treatment strategies. The majority of reported cases underscore the prominence of metastatic lesions manifesting as a distinctive, single, large polypoid lesion situated within gastric body [7] In our case endoscopy showed a single polypoidal mass in fundus of stomach. Metastatic disease is most found in the submucosal layer with clear-cell histology as the predominant form.

Our case exhibited tumor cells in submucosa with free surgical margins [8]. Immunohistochemistry plays a pivotal role in the accurate diagnosis of renal cell carcinoma (RCC), with specific markers shedding light on the histopathological characteristics of the tumor. Vimentin and PAX-2 serve as essential aids in this diagnostic process. Vimentin, an intermediate filament protein normally expressed in renal tissues, and PAX-2, a transcription factor crucial for the development and proliferation of renal tubules, are key markers for identifying RCC. CD10, a cell surface marker, and PAX-8, a marker associated with renal epithelial differentiation, are consistent with the histopathological features observed in clear cell RCC. Conversely, the tumor was negative for CK20, CK7, and CEA, aligning with the expected immunoprofile of metastatic clear cell RCC [9,10]. The occurrence of gastric metastasis in RCC usually occurs later in the disease course.

Associated metastases to other organs are often reported, and therefore, findings of gastric disease may serve as a marker of RCC progression and severity. Overall, the outcome of metastatic RCC is poor with 5-year survival rates of 12% [11]. Optimal treatment for gastric metastasis from RCC remains controversial. Namikawa et

al reported that patients with solitary metastasis arising from RCC had good outcomes following treatment compared with those with multiple metastases [12]. We propose that surgical resection stands as the preferred treatment modality for solitary metastasis and symptomatic cases, particularly those presenting with bleeding, with the overarching goal of preserving the patient's quality of life. Gastric metastasis in the context of RCC typically emerges as a late-stage event, often diagnosed due to bleeding; however, the manifestation of anemia may also prompt consideration. In the contemporary landscape of RCC management, the integration of local treatment strategies, such as endoscopy and surgical resection, alongside systemic therapies, has the potential to significantly impact patient outcomes.

Notably, the advent of immunotherapy, either in combination or association with tyrosine kinase inhibitors (TKIs), introduces promising avenues for improving survival in patients with gastric metastasis. As we navigate the era of immunotherapy and targeted treatments, the proposed treatment approach emphasizes the need for a multidisciplinary collaboration, involving oncologists, surgeons, and gastroenterologists. By harmonizing local and systemic interventions, we aim to optimize the management of gastric metastasis in RCC, offering patients a comprehensive and tailored therapeutic strategy that aligns with contemporary advancements in oncological care.

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