

Hematochezia due to a renal cell carcinoma metastasis to the rectum: A case report and review of the literature

Evan S. Dellon, M.D.,* Lisa M. Gangarosa, M.D.*

*Department of Medicine, University of North Carolina School of Medicine, Chapel Hill, N.C.

Correspondence: Evan S. Dellon, M.D. University of North Carolina School of Medicine. Division of Gastroenterology and Hepatology, CB #7080. Bioinformatics Bldg, Rm 1140. 130 Mason Farm Rd. Chapel Hill, NC 27599-7080. Phone: 919-966-2514. Fax: 919-966-6842. E-mail: edellon@unch.unc.edu

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SUMMARY. While primary tumors of the GI tract are a frequent cause of gastrointestinal bleeding, metastatic lesions to the bowel uncommonly present with hematochezia, and rectal involvement is particularly rare. We describe the case of a 70-year-old man with an exceedingly late recurrence of renal cell carcinoma who presented with hematochezia due to a metastasis in the rectum. This is the first report to include both endoscopic and endoscopic ultrasound images of such a lesion. In the correct clinical setting, metastatic disease to the rectum should be included on the differential diagnosis of lower gastrointestinal bleeding.

Key words: Renal cell carcinoma, GI bleeding, metastasis, endoscopic ultrasound.

CASE REPORT

A 70-year-old man was admitted to the hospital with painless hematochezia and a hematocrit of 26%. His past medical history was notable for renal cell carcinoma (RCC) diagnosed at the age of 42. He underwent a left nephrectomy, and did well until the age of 68. At that time, however, he experienced vertigo and was found to have a cerebellar lesion which proved to be metastatic RCC. Further staging revealed tumor in the right lung with mediastinal lymphadenopathy; the remaining kidney was normal. The patient was treated with interleukin-2 and interferon alpha. He initially responded, but three months prior to the current admission he developed anemia with occult blood detected in his stool. No significant abnormalities were seen on colonoscopy. On EGD, a four cm, ulcerated, oozing mass was found in the duodenum. Biopsies were consistent with metastatic RCC, radiation therapy was instituted, and another course of immunotherapy was prescribed.

RESUMEN. Mientras que los tumores primarios del tubo digestivo son una causa frecuente de hemorragia gastrointestinal, las lesiones metastásicas al intestino se presentan raramente como hematoquezia y la afección rectal es particularmente infrecuente. Describimos un caso de un hombre de 70 años con una recidiva muy tardía de un carcinoma renal que se manifiesta como hematoquezia secundaria a metástasis en el recto. Éste es el primer informe que incluye tanto imágenes de endoscopia como de ultrasonido endoscópico de esta lesión. En un contexto clínico correcto, la enfermedad metastásica al recto debe incluirse en el diagnóstico diferencial de la hemorragia del tubo digestivo bajo.

Palabras clave: carcinoma renal, hemorragia gastrointestinal, metástasis, ultrasonido endoscópico.

Given the patient's history, the differential diagnosis on this admission included bleeding from the known duodenal mass, possible radiation enteritis, or another process. Digital rectal exam revealed a firm, rubbery mass. On colonoscopy, a two cm, subepithelial lesion was visualized adjacent to the dentate line; on retroflexion, active oozing from an ulcerated area was seen (*Figure 1A and 1B*). EUS was performed with a 12 MHz miniprobe prior to biopsy to characterize this lesion further. The mass was largely hyperechoic, and appeared within the submucosa (*Figure 2*). A snare was used to remove a representative portion. Histologic examination revealed large, irregularly shaped cells with abundant clear cytoplasm, nuclear atypia with prominent nucleoli, and mitotic figures consistent with metastatic renal cell carcinoma (*Figure 3A and 3B*). The patient again responded to local radiation therapy and did not have any further GI bleeding. His disease progressed, however, and eight months after this admission he expired in a hospice care setting.

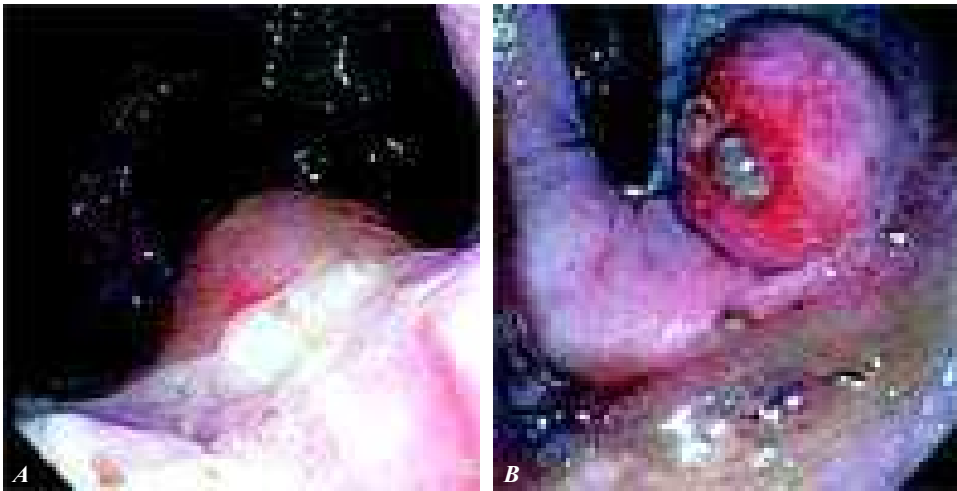


Figure 1. *A) Colonoscopic view of the ano-rectal junction showing a submucosal mass. B) Retroflexed view revealed the entire mass and the ulcerated area which was the source of hematochezia.*

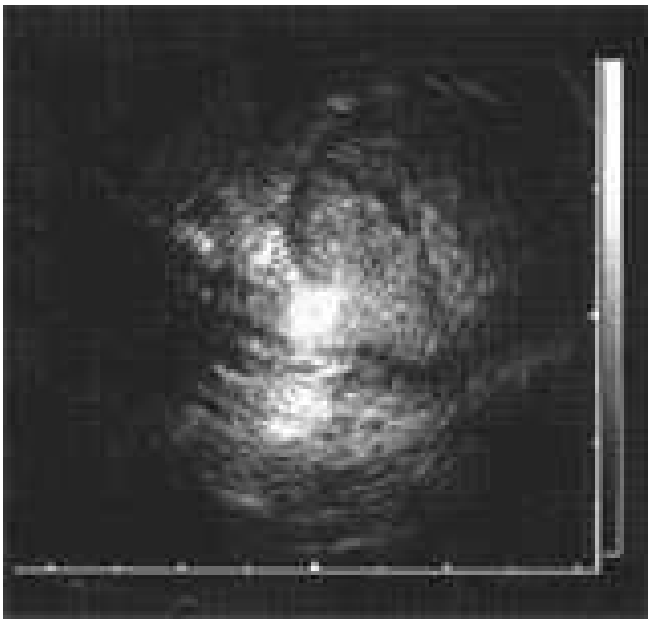


Figure 2. *Endorectal ultrasound (12 MHz miniprobe) showing a hyperechoic, submucosal mass measuring 21.5 x 16.1 mm.*

DISCUSSION

This paper describes a patient with an exceedingly late recurrence of renal cell carcinoma manifest by widespread metastatic disease, including lesions in the GI tract. It is the first reported characterization of a rectal RCC lesion by EUS. Renal cell carcinoma is often considered to be one of the great medical mimics because of the wide variety of ways in which it may present.¹ In this case, the patient's disease mimicked a stroke as well as two types of GI bleeding.

While it is uncommon for any tumor to metastasize to the GI tract, it is more common with melanoma, ova-

rian, and bladder carcinoma; RCC is only rarely found to spread there.^{2,3} There are, however, several case reports describing GI tract involvement in RCC. Some are by direct extension from the kidney or IVC,^{4,5} though most go to the duodenum, stomach, or pancreas.⁶⁻¹⁰ Less frequently reported is RCC metastasizing to the colon and causing GI bleeding, either as an initial presentation of RCC¹¹⁻¹³ or as a harbinger of recurrence.^{14,15} There has been one previously described case of RCC metastasizing to the rectum and presenting as rectal bleeding, though the patient described proceeded directly to surgery, and no endoscopic or sonographic images were reported.¹⁶

Endoscopic ultrasound is useful for characterizing rectal lesions, though it is most commonly used to stage rectal adenocarcinoma.¹⁷ While EUS has not been reported to be specifically applied in the few reports of RCC lesions metastatic to the GI tract, it has been used on several occasions to characterize and access mediastinal and pancreatic metastases for diagnostic purposes.¹⁸⁻²⁰ These lesions were described as round and well circumscribed, but ranged from hypoechoic to hyperechoic depending on the features of the surrounding tissue. When an RCC is still located in the kidney, it is often hypoechoic to isoechoic compared to the surrounding renal parenchyma.²¹

In conclusion, we present a case of a patient with a rare cause of hematochezia: metastatic RCC to the rectum. It is important to consider the possibility of a metastatic lesion to the GI tract as a cause of GI bleeding. While reports of RCC involving the GI tract have been published, this is the first to include an endosonographic image of the lesion. While a range of echogenicities has been found for RCC, we found that RCC appears hyperechoic in the rectum.

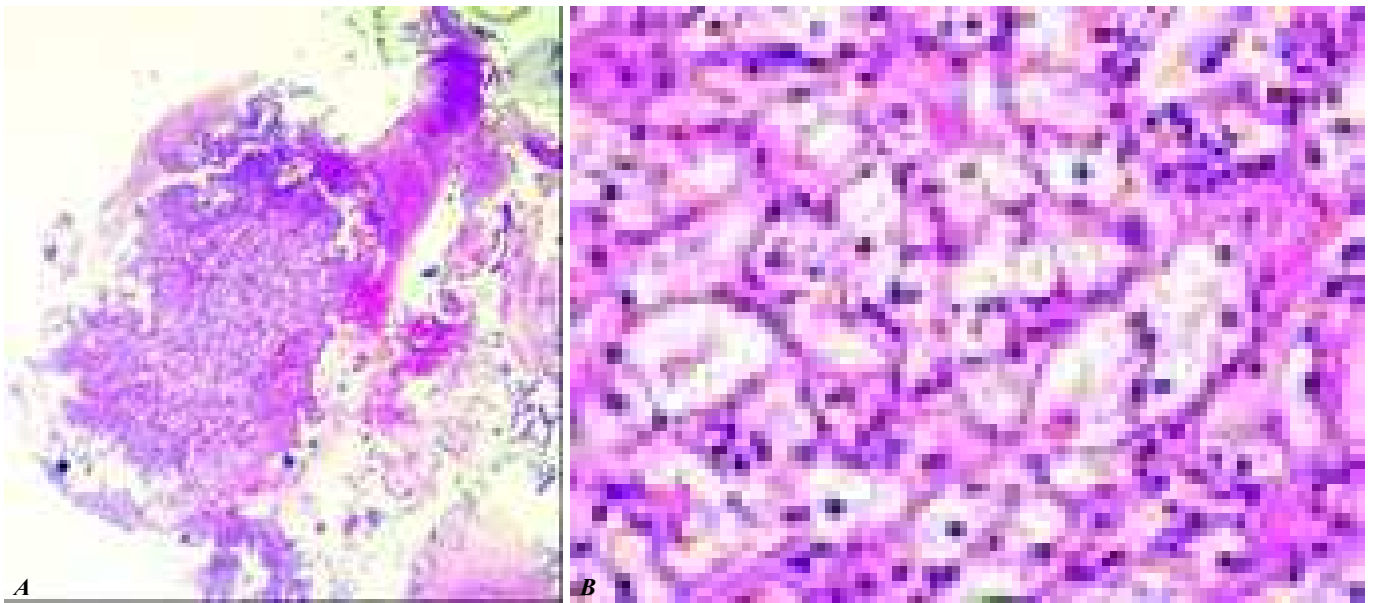


Figure 3. *A)* Low power (40x) photomicrograph of the biopsy specimen with H&E staining notable for nest of cells and areas of focal necrosis. *B)* High power (1000x) shows irregularly shaped cells with abundant clear cytoplasm, nuclear atypia with prominent nucleoli, and mitotic figures consistent with metastatic renal cell carcinoma.

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REFERENCES

- Papac RJ, Poo-Hwu W. Renal cell carcinoma: a paradigm of lanthanic disease. *Am J Clin Oncol* 1999; 22: 223-31.
- Weiss L, Harlos JP, Torhorst J, Gunthard B, Hartveit F, Svendsen E, Huang WL, Grundmann E, Eder M, Zwicknagl M. Metastatic patterns of renal carcinoma: an analysis of 687 necropsies. *J Cancer Res Clin Oncol* 1988; 114: 605-12.
- Washington K, McDonagh D. Secondary tumors of the gastrointestinal tract: surgical pathologic findings and comparison with autopsy survey. *Mod Pathol* 1995; 8: 427-33.
- Ohmura Y, Ohta T, Doihara H, Shimizu N. Local recurrence of renal cell carcinoma causing massive gastrointestinal bleeding: a report of two patients who underwent surgical resection. *Jpn J Clin Oncol* 2000; 30: 241-5.
- Benjamin DS, Ruckle HC, Hadley HR. Local recurrence of renal cell carcinoma causing duodenal-inferior vena caval fistula: case report and review of the literature. *Urol* 1996; 48: 636-8.
- Lynch-Nyhan A, Fishman EK, Kadir S. Diagnosis and management of massive gastrointestinal bleeding owing to duodenal metastasis from renal cell carcinoma. *J Urol* 1987; 138: 611-13.
- 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.
- Picchio M, Paoletti A, Santini E, Iacoponi S, Cordahi M. Gastric metastasis from renal cell carcinoma fourteen years after radical nephrectomy. *Acta Chir Belg* 2000; 100: 228-30.
- Mascarenhas B, Konety B, Rubin JT. Recurrent metastatic renal cell carcinoma presenting as a bleeding gastric ulcer after a complete response to high-dose interleukin-2 treatment. *Urol* 2001; 57: 168.
- Sugiyama M, Katsura M, Yamamoto K, Nouchi W, Abe N, Hatano N, Atomi Y. Pancreatic metastasis from renal cell carcinoma causing massive gastrointestinal bleeding in von Hippel-Lindau disease. *Hepatogastroenterology* 1999; 46: 1199-201.
- Roumen RM, Corten RL, Meijer JW. Rectal bleeding as the first clinical symptom of renal cell carcinoma. *Neth J Surg* 1989; 41: 117.
- Perez VM, Huang GJ, Musselman PW, Chung D. Lower gastrointestinal bleeding as the initial presenting symptom of renal cell carcinoma. *Am J Gastroenterol* 1998; 93: 2293-4.
- 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.
- Tokonabe S, Sugimoto M, Komine Y, Horii H, Matsukauma S. Solitary colonic metastasis of renal cell carcinoma seven years after nephrectomy: a case report. *Int J Urol* 1996; 3: 501-3.
- Tomason PA, Peterson LS, Staniunas RJ. Solitary colonic metastasis from renal-cell carcinoma 17 years after nephrectomy: report of a case. *Dis Colon Rectum* 1991; 34: 709-12.
- Rosito MA, Damin DC, Lazzaron, AR, Cartell A, Schwartzmann G. Metastatic renal cell carcinoma involving the rectum. *Int J Colorectal Dis* 2002; 17: 359-61.
- Hunerbein M. Endorectal ultrasound in rectal cancer. *Colorectal Dis* 2003; 5: 402-5.
- Fritscher-Ravens A, Sriram PV, Topalidis T, Jaeckle S, Thonke F, Soehendra N. Endoscopic ultrasonography-guided fine-needle cytodagnosis of mediastinal metastases from renal cell cancer. *Endoscopy* 2000; 32: 531-5.
- Eloubeidi MA, Jhala D, Chhieng DC, Jhala N, Eltoun I, Wilcox CM. Multiple late asymptomatic pancreatic metastases from renal cell carcinoma: diagnosis by endoscopic ultrasound-guided fine needle aspiration biopsy with immunocytochemical correlation. *Dig Dis Sci* 2002; 47: 1839-42.
- Bechade D, Palazzo L, Fabre M, Algayres JP. EUS-guided FNA of pancreatic metastasis from renal cell carcinoma. *Gastrointest Endosc* 2003; 58: 784-8.
- Helenon O, Correas JM, Balleyguier C, Ghouandni M, Cornud F. Ultrasound of renal tumors. *Eur Radiol* 2001; 11: 1890-901.