

Endoscopic Mucosal Resection of a Large Gastric Metastasis from Renal Cell Carcinoma

Richa Chibbar, MD¹, Julinor Bacani MD², and Sergio Zepeda-Gómez, MD¹

¹Division of Gastroenterology, University of Alberta, Edmonton, Canada

²Division of Anatomical Pathology, University of Alberta, Edmonton, Canada

Abstract

Gastric metastasis from renal cell carcinoma (RCC) occurs in less than 1% of cases. A variety of management options have been described for this condition, however, total or partial gastrectomy is the most common therapeutic approach. We present a case of a large gastric metastatic lesion from a RCC diagnosed 10 years before. This was treated with endoscopic mucosal resection (EMR) without evidence of residual lesion after 10 months of follow-up.

Introduction

Renal cell carcinoma (RCC) accounts for 3% of all adult malignancies and 25–30% of RCC patients have metastatic disease at presentation.¹ A low percentage of patients present with metastatic disease up to 25 years after initial presentation and treatment. The usual sites of metastasis for RCC include lung (50–70%), liver (30–40%), bone and soft tissue (10%), and brain (5%).² Gastric metastasis from RCC occurs in less than 1% of cases. A variety of management options have been described for this condition, including endoscopic resection. We present a case of a patient with a large polypoid metastatic lesion in the stomach from RCC diagnosed 10 years before. This lesion was treated with endoscopic mucosal resection (EMR) without evidence of residual lesion after 10 months of follow-up.

Case Report

A 69-year-old female presented for endoscopic evaluation with recent iron-deficiency anemia. The patient had a radical left nephrectomy as definitive treatment for a renal cell carcinoma (pT3a pN0) in 2002. She noticed increasing fatigue and lightheadedness, but denied overt gastrointestinal bleeding. She was found to have a hemoglobin level of 10.6 g/dL with an iron level of 5 µmol/L (normal: 8–25). The gastroscopy showed an atypical 2.5-cm sessile polypoid lesion in the gastric body. It was friable with erosions in the mucosal surface, but without active bleeding (Figure 1). We injected the base of the polypoid lesion with saline solution, methylene blue, and diluted epinephrine (1:10,000). There was adequate lifting and subsequent EMR was performed with a combination of coagulation and cutting current (ENDO CUT® Q, Effect 3, ERBE Elektromedizin, GmbH, Tübingen, Germany). No immediate complications were observed at the EMR site (Figure 2). The patient reported no symptoms after the procedure and was discharged. The histopathologic examination of the specimen showed metastatic clear cell renal carcinoma, with free margins of resection (Figures 3 and 4).

Subsequent CT scan of the chest, abdomen, and pelvis 1 month after the procedure did not show evidence of other site of metastasis. The patient was started on oral iron and the hemoglobin level increased to normal range. A follow-up gastroscopy was performed 8 weeks later. This showed scar tissue at the EMR site without

ACG Case Rep J 2013;1(1):10–12. doi:10.14309/crj.2013.6. Published online: October 8, 2013.

Correspondence: Sergio Zepeda-Gómez, MD, Division of Gastroenterology, 1-20A Zeidler Ledcor Centre, 130 University Campus, University of Alberta, Edmonton, Canada T6G2X8 (zepedago@ualberta.ca)

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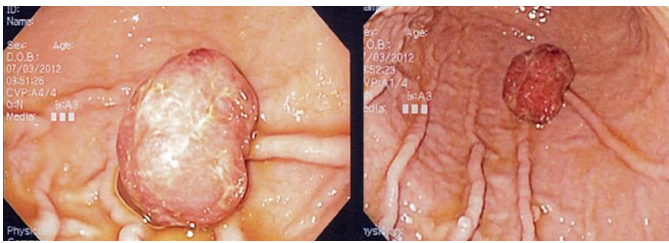


Figure 1. Endoscopic view of a 2.5-cm polypoid lesion in the body of the stomach corresponding to a gastric metastasis from a RCC.

macroscopic evidence of residual disease. Biopsies from the resection site confirmed normal gastric mucosa (Figure 5). The patient has remained asymptomatic and a follow-up CT scan of the abdomen 10 months after the EMR showed stable findings without evidence of metastatic disease.

Discussion

Gastric metastasis from renal cell carcinoma is a rare occurrence and confers a poor prognosis.¹ It can present as an incidental finding or associated with anemia, abdominal pain, or gastrointestinal bleeding.³ There is no standard approach to management, but surgical excision (either total or partial gastrectomy) is the most common therapeutic approach. Endoscopic therapy has been reported as an alternative treatment of these lesions, either with EMR or endoscopic submucosal dissection (ESD). There are 48 cases of gastric metastasis from RCC reported in the literature; however, only 11 patients have been treated with endoscopic resection and one with ESD.⁴⁻¹⁰ A summary of the cases that have been treated endoscopically is presented in Table 1. Unfortunately, in the majority of the cases reported, the endoscopic resection technique is not described in detail. In one report, the lesion size was 3 cm, an endloop snare was placed at the base, and polypectomy was performed; however, this was an incomplete resection.⁶ Another report describes 3 polypoid lesions actively bleeding in the body of the stomach. The lesions were 2–3 cm in size and resected with epinephrine injection and snare polypectomy, but it is unclear if this was a complete resection.¹⁰ There is one report of ESD for a 6-mm flat metastatic lesion in the stomach.⁹

To our knowledge, our case is the largest gastric metastasis from a RCC to be completely resected endoscopically

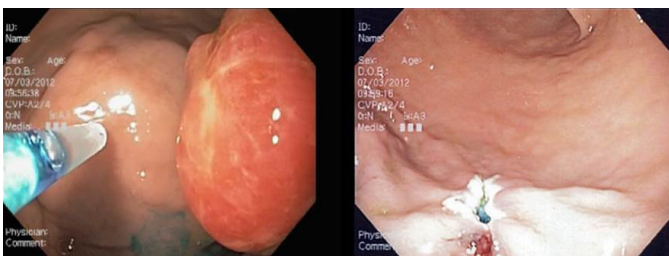


Figure 2. Adequate lifting of the polypoid lesion with combination of saline solution, methylene blue, and dilute epinephrine (left), and post-EMR result (right).

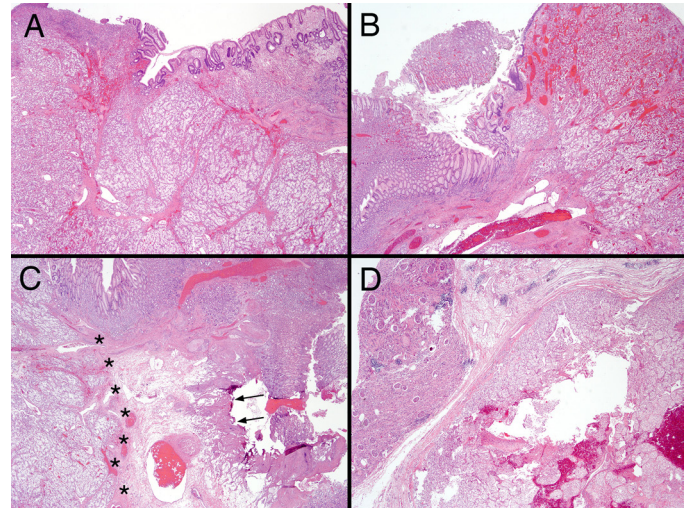


Figure 3. Hematoxylin and eosin (H&E) of gastric polypectomy at 2x magnification. (A) Gastric mucosa with underlying submucosal metastatic clear renal cell carcinoma (RCC) causing grossly polypoid appearance. (B) Gastric mucosal erosion and ulceration by underlying clear-cell RCC morphologically identical to prior RCC in D. (C) Well-visualized cauterized margins without evidence of malignancy. Cauterized margin on right side denoted by arrows is 2 mm away from closest metastatic RCC tumor front (asterisks). (D) Prior clear-cell RCC. Normal renal parenchyma in upper left corner.

by EMR. The endoscopic resection was carried out without complications, and a repeat gastroscopy after 8 weeks showed no evidence of residual lesion. There were no other metastatic lesions identified on a subsequent CT scan. The patient remains without evidence of disease by endoscopic or radiologic criteria at almost 1 year of follow-up.

In cases with high diagnostic suspicion of invasive gastric metastasis from RCC, prior assessment of depth of invasion by endoscopic ultrasound would be appropriate. However,

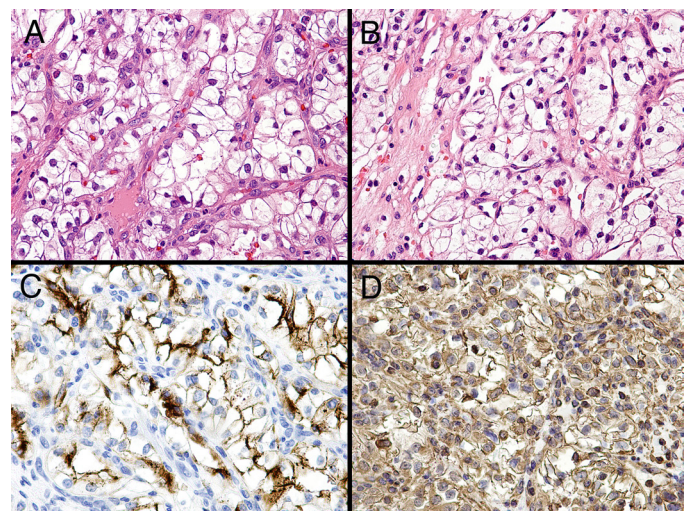


Figure 4. H&E and confirmatory immunostains showing strong co-expression for renal cell carcinoma markers at 40x magnification. (A) H&E of metastatic clear cell RCC to stomach. (B) H&E primary clear cell RCC. (C) RCC immunostain. (D) Vimentin immunostain.

Table 1. Summary of Case Reports of Gastric Metastatic Lesions from RCC Treated Endoscopically

Country	Cases	Age, y	Interval, y	Technique	Size	Complete Resection	Outcome
Japan ⁴	4	Mean: 56	Mean: 8.25	Not specified	NS	NS	2 Patients lived more than 6 mo after resection
Austria ⁵	3	Mean: 72	Mean: 8	Standard polypectomy + APC	Mean: 1.5 cm	NS	2 Patients died within 6 mo after resection; The other alive after 2 y with disease
Australia ⁶	1	65	9	Endoloop + polypectomy	3 cm	No	Alive 6 y after resection with disease
UK ⁷	1	71	3	EMR	1.2 cm	Yes	Alive after 15 mo
US ⁸	1	60	6 mo	Not specified	6 mm	Yes	Died 8 mo after resection
S. Korea ⁹	1	79	At RCC diagnosis	ESD	6 mm	Yes	Alive 6 mo after resection
Italy ¹⁰	1	78	5	Epinephrine injection + snare polypectomy (3 lesions identified)	2–3 cm	NS	Died 6 mo after resection
Canada*	1	69	10	EMR	2.5 cm	Yes	Alive 10 mo after resection

*Current study. APC=argon plasma coagulation; EMR=endoscopic mucosal resection; ESD=endoscopic submucosal dissection; NS=not specified; RCC=renal cell carcinoma.

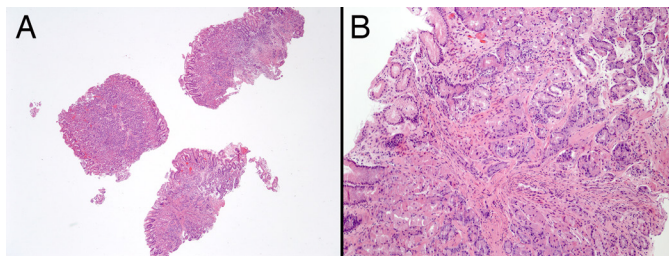


Figure 5. H&E follow-up post gastric polypectomy. (A) 3 benign gastric mucosal biopsies at polypectomy site taken at 2X magnification. (B) Representative H&E 10X magnification. There is no evidence of residual metastatic RCC.

polypoid lesions that lift well with submucosal injection, such as the one reported here, have low risk of deep mucosal and lymphatic invasion, thus low risk of bleeding and/or perforation after EMR. Currently, there are no guidelines for the endoscopic follow-up after a gastric metastasis resection from RCC. Such patients should be followed closely for any sign of recurrence. In our patient, we will perform a yearly gastroscopy, in addition to standard oncologic surveillance. Our experience shows that gastric metastasis from RCC that appear to be amenable to endoscopic resection can be resected safely and effectively in expert hands.

Disclosures

Author contributions: R. Chibbar wrote the first draft, collected the data for the article, and conducted the literature research; J. Bacani completed the histopathological analysis and description of the histopathology, and reviewed the final draft; S. Zepeda-Gómez reviewed and wrote the final draft, conducted the literature research, and is the guarantor of the article.

Financial disclosure: The authors disclose no financial relationship relevant to this publication.

Received: July 18, 2013; Accepted: September 19, 2013

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