Clinics in Surgery

Case Report
Published: 13 Jan, 2021

Multiple Gastrointestinal Metastases, Small-Bowel Intussusception, and Stomach Polyps in Advanced Renal Cell Carcinoma: A Case Report and Literature Review

Sheng-Rui Yang[1,2], Wen-Liang Fang[3,4], Anna Fen-Yau Li[4,5] and Kuo-Hung Huang[3,4]*

[1]*Department of Surgery, Division of General Surgery, Tao-Yuan General Hospital, Taiwan*

[2]*School of Medicine, National Defense Medical Center, Taiwan*

[3]*Department of Surgery, Division of General Surgery, Taipei Veterans General Hospital, Taiwan*

[4]*School of Medicine, National Yang-Ming University, Taiwan*

[5]*Department of Pathology, Taipei Veterans General Hospital, Taiwan*

Abstract

Gastrointestinal (GI) metastases from Renal Cell Carcinoma (RCC) are rare. RCC with GI tract metastasis generally manifests with bleeding and obstruction, but RCC with small-bowel metastases-related intussusception accompanied by multiple GI tract involvement is an extremely rare pathology. A 62-year-old woman presented to our hospital with melena and anemia caused by GI bleeding and recent acute abdominal pain with obstruction. Abdominal ultrasound and computed tomography revealed small-bowel intussusception and stomach polyp. The patient was diagnosed with RCC with lung and brain metastases and subsequently underwent gamma knife radiosurgery and sunitinib therapy. Intraoperative findings included a 3 × 3 cm^2 intramural mass 50 cm distal to the Treitz ligament, determined to be the leading point of the intussusception, two other small-bowel lesions with intramural polypoid masses, and serosa erosion distal to the ileocecal valve (40 cm and 100 cm, respectively). Three small-bowel segmental resections with end-to-end anastomosis were performed. The postoperative course was uneventful. Pathologic results confirmed the diagnosis of metastatic RCC. RCC with small-bowel metastases is relatively rare. Most small intestinal metastases are associated with malignant melanomas. However, GI tract metastasis may occur in patients with a known history of RCC who present with GI symptoms and signs. Our patient presented with small-bowel intussusception and stomach polypoid. The final pathology revealed stomach and small-bowel metastases and clear cell-type RCC. This is an unusual finding among cases of bowel metastasis from RCC reported in the literature from 2006 to the present.

Keywords: Gastrointestinal metastases; Gamma knife radiosurgery; Renal cell carcinoma; Small-bowel; Metastases, Small-bowel intussusception; Stomach polyp

OPEN ACCESS

Correspondence:
Kuo-Hung Huang, Department of Surgery, Taipei Veterans General Hospital, No. 201, Sec. 2, Shipai Rd., Beitou District, Taipei City, 11217, Taiwan, Tel: +886-2-2875-7652; Fax: +886-2-2875-7537; E-mail: khhuang@vghtpe.gov.tw

Received Date: *15 Dec 2020*
Accepted Date: *06 Jan 2021*
Published Date: *13 Jan 2021*

Citation:
Yang S-R, Fang W-L, Fen-Yau Li A, Huang K-H. Multiple Gastrointestinal Metastases, Small-Bowel Intussusception, and Stomach Polyps in Advanced Renal Cell Carcinoma: A Case Report and Literature Review. Clin Surg. 2021; 6: 3026.

Introduction

Renal Cell Carcinoma (RCC) may metastasize to almost any organ, but Gastrointestinal (GI) tract metastases are unusual. Common sites of metastasis in RCC are the lungs, lymph nodes, bone, brain, and liver. The involvement of the small bowel is rare [1-5]. Adult intussusception is rare, representing only 5% of all cases of intussusception [5]. Metastases from various malignancies can cause intussusception but are uncommon. Small-bowel metastases are most commonly associated with malignant melanoma, with 2% to 5% incidence in malignant melanoma of the skin [2]. Here, we report a case of small-bowel intussusception and melena simultaneously induced by clear cell RCC (ccRCC) with small-bowel and stomach metastases.

Case Presentation

A 62-year-old woman presented to the Taipei Veterans General Hospital with slurred speech and the inability to type correctly. Imaging revealed a 1-cm metastasis lesion on the left frontal lobe. Computed Tomography (CT) of the chest/abdomen showed bilateral lung metastases and a heterogeneous mass of the left kidney, which measured 6.7 cm × 5.4 cm and had a protrusion at the upper pole, and was considered renal tumor growth. A biopsy confirmed RCC, clear cell type (Figure 3a). The patient subsequently underwent sunitinib treatment and received gamma knife

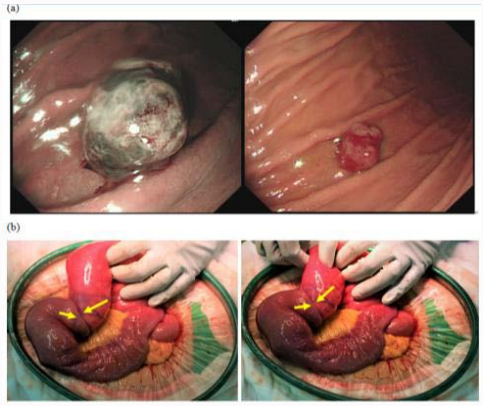

Figure 1: (a) UGI endoscopic showed a 1.5 cm red polyp with mild oozing at GCS of middle body. (b) Operative finding showed intussusception of small intestine.

Figure 2: Abdominal CT with contrast. Axial (a) and conoral (b) view. Intestinal intussusception is noted, with relatively collapsed distal intestine.

radiosurgery. Four months later, Magnetic Resonance Imaging (MRI) revealed new metastatic lesions in the left cerebellar hemisphere and right temporo-occipital area of the brain with marked perifocal edema. The patient underwent a second gamma knife surgery. This time, the patient complained of melena and abdominal pain within the past three months. A decreased serum hemoglobin level (6.8) was noted under OPD follow-up; CT showed multiple muscle, intestinal, retroperitoneal, and lung metastasis, with intestinal intussusception, a relatively collapsed distal intestine, and partial obstruction (Figure 2a and 2b). Upper GI panendoscopy revealed a 1.5-cm red polyp with mild oozing at the GCS of the middle body (Figure 1a). We performed an exploratory laparotomy and intussusception with proximal dilated small intestines at 50 cm from the Treitz ligament, which showed a related intraluminal tumor (about 3 × 3 cm^2; Figure 1b). There were two lesions with an intraluminal tumor (1 × 1 cm^2) with serosa invasion, at 40 cm and 100 cm from the ileocecal valve. Three small-bowel segmental resections were performed. The pathology report of the three small-bowel specimens indicated metastatic carcinoma, which favored the renal primary (Figure 3c) and was compatible with the finding of stomach polypoid (Figure 3b). The patient's postoperative course was uneventful, and she experienced no complications.

Discussion

Renal cell carcinoma is the most frequent kidney malignancy [5], encompassing a heterogeneous group of cancers derived from renal tubular epithelial cells; it is among the 10 most common cancers

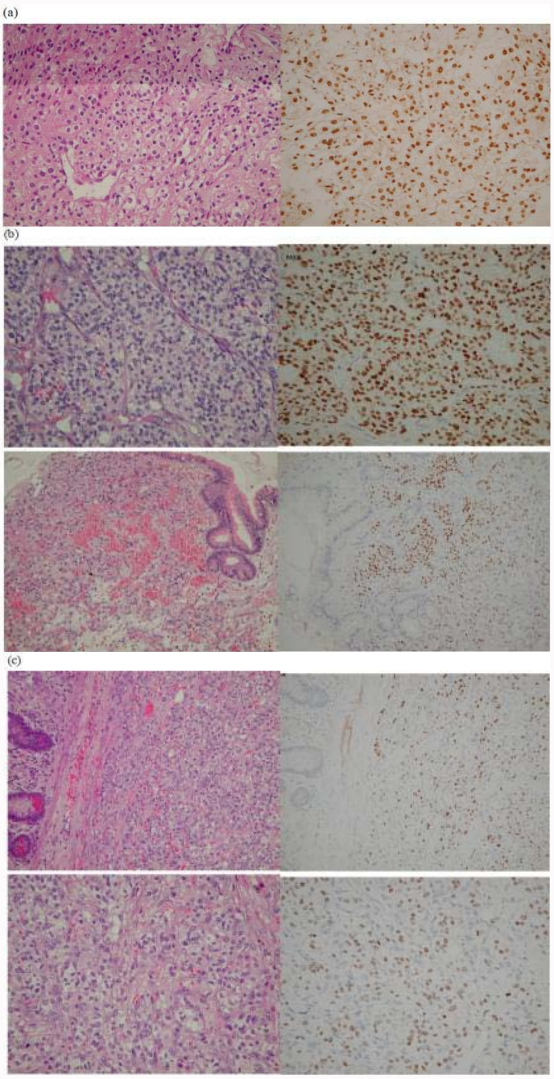

Figure 3: (a) Kidney, left, needle biopsy --- Renal cell carcinoma, clear-cell type. BAP1 shows intact nuclear expression. (b) Stomach, polypectomy --- Metastatic carcinoma, favor renal primary. Immunoreactive for PAX8. (c) Jejunum, segmental resection --- Metastatic carcinoma, favor a renal primary. Immunoreactive for PAX8.

worldwide [1]. Most kidney cancer deaths are caused by ccRCC, the most common subtype of RCC, which is attributable to the predominance of clear cell histology in metastatic disease (83% to 88%) [1]. Most renal cancer cases are asymptomatic and diagnosed incidentally through extensive diagnostic imaging. The classic triad of hematuria, flank pain, and palpable abdominal mass rarely constitute the first symptoms of presentation, occurring in only 4% to 17% cases [3,4]. Overall, <50% RCC patients have metastatic disease at diagnosis. Approximately 50% patients treated with nephrectomy for RCC report metachronous disease, which may occur years after primary disease [3]. Common sites of metastasis in RCC are the lungs, lymph nodes, bone, brain, and liver. Literature search indicated that RCC is rarely metastatic in the small intestine. In those instances, the most common presentation is GI bleeding [2,3,5]. Our case of multiple bowel metastases with intussusception and gastric metastasis is rare. We searched the literature for cases of bowel metastasis from RCC, published from 2006 to the present, and identified only 25 case reports. There were no reports of simultaneous stomach and small bowel metastasis [4]. Rare cases present with obstructive symptoms

in the form of intussusception. The finding of multiple polypoid metastases, as seen in our case, is rare [6,7]. Intussusception in elderly patients is usually associated with an underlying neoplasm. A few instances of intussusception caused by small intestinal metastasis of RCCs have been reported, but multiple polypoid metastases causing intussusception is uncommon [3]. Malignancy as a cause of small-bowel intussusception is unusual, accounting for 15% cases. The most common cause among the malignancies is melanoma metastases to the small bowel. Metastases resulting from various malignancies can cause intussusception but are uncommon [2]. Our patient suffered from tarry stool and obstructive symptoms, which was attributable to multiple polypoid-related intussusceptions (three small-bowel segments). The diagnosis is usually strongly confirmed with imaging studies, although RCCs can have a variable radiographic appearance. The typical radiologic features for ccRCC include exophytic (outward) growth, heterogeneity due to intratumoral necrosis or hemorrhage, and high uptake of contrast-enhancement agents [1]. Barium enema examination may be performed, in which the meniscus sign and coiled spring sign are considered classic signs of intussusception. Ultrasonography is also a reliable method with high sensitivity and specificity. The bowel-in-bowel appearance, called the target sign, on axial sonograms, and the sandwich sign on longitudinal sonograms have been described. However, CT examination has a good risk-benefit ratio in adult patients presenting with acute symptoms and can have a positive effect on the prognosis [2]. CT findings of intussusception include an intraluminal soft-tissue density within the bowel lumen, representing the herniated intussusceptum and referred to as the "target" sign associated with the presence of eccentric mesenteric fat and vessel [2]. The stage of RCC reflects the tumor size, extent of invasion outside the kidney, the involvement of the lymph nodes, and whether the tumor has metastasized. CT imaging with contrast enhancement of the chest, abdominal cavity, and pelvis is required for optimal staging. It enables assessment of the primary tumor, regional lymph node involvement, and distant metastases. MRI can provide additional information, especially for determining whether the tumor extends into the vasculature (vena cava tumor thrombus). Bone scan, 18F-fluorodeoxyglucose positron emission tomography, and imaging of the brain are not routinely recommended for initial staging [1]. Localized RCC can be treated with partial or radical nephrectomy or ablation. Among patients receiving nephrectomy with curative intent, ~30% patients with ccRCC who have localized disease eventually develop metastases, a situation that requires systemic therapies and is associated with high mortality. Targeted therapies against vascular endothelial growth factor and mammalian target of rapamycin pathways have been developed, but the treatment response varies, and most patients eventually progress [1]. For our surgeon practice, the whole small bowel needs to exactly examine intra-operatively. After check pathology, three segments of small bowel involvement were found, so three times small bowel resection with anastomosis was done for preservation adequate small bowel function. The final pathology showed stomach and small bowel metastases, clear cell type renal cell carcinoma; it is very extremely rare finding in the past case report for case of bowel metastasis from RCC published from 2006 to present.

Conclusion

RCC with small-bowel metastases is relatively rare, and the most common primary tumors that cause small intestinal metastases are malignant melanomas and carcinomas of lung, breast and ovary. However, for patients with a known history of RCC who present with GI symptoms and signs, the possibility of GI tract metastasis remains. In our case, the patient suffered from small bowel intussusception and melena simultaneously, it is extremely rare presentation for RCC metastases.

Acknowledgment

This study was supported by grant from Taipei Veterans General Hospital (V110C-105).

References

1. Hsieh JJ, Purdue MP, Signoretti S. Renal cell carcinoma. Nat Rev Dis Primers. 2017;3:17009.
2. Hegde RG, Gowda HK, Agrawal RD, Yadav VK, Khadse GJ. Renal cell carcinoma presenting as small bowel obstruction secondary to a metastatic ileal intussusception. J Radiol Case Rep. 2014;8(4):25-31.
3. Vani M, Ajit N, Geetha K, Byju K. Metastatic renal cell carcinoma causing small intestinal polyps with intussusception: A report of two cases. J Clin Diagn Res. 2017;11(4):ED13-ED15.
4. Claudia T, Maria GV, Biagio T, Maria LLG, Mariarosa C, Giacomo C, et al. Severe blood loss anaemia and recurrent intussusceptions as first presentation of bowel metastatic renal cell carcinoma: A case report and review of the literature. Mol Clin Oncol. 2017;7(4):654-60.
5. Gabriele B, Tommaso C, Gladiola K, Roberto D, Biagio C, Marina B. Small bowel intussusception from renal cell carcinoma metastasis: A case report and review of the literature. J Med Case Rep. 2016;10(1):222.
6. Anne-Sophie MB, Veronika N, Sandra H, Jürg M. Triple jejuno-jejunal intussusception due to metastatic renal cell carcinoma. J Surg Case Rep. 2015.
7. Alissa A, Kherifech M, Alouini R, Hajji H, Stita W. Multiple intussusceptions revealing metastases from renal carcinoma to the small intestine. J Visc Surg. 2012;149(3):e223-4.