Synchronous Haematogenous Colonic Metastasis from a Primary Renal Cell Carcinoma: An Unusual Cause of Colonic Haemorrhage: (Case Report)

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Abstract

Background: Renal cell carcinoma (RCC) represent 2-3% of all malignant tumors in adults. Clear cell carcinoma is the most frequent histological type, and 25-30% of renal carcinoma have metastasis at the time of diagnosis. RCC very rarely metastasize to the colon. The objective of the present study is to report synchronous haematogenous solitary colonic metastasis that presented as severe recurrent lower gastrointestinal haemorrhage which required right hemicoloectomy and right nephrectomy plus chemotherapy.

Clinical Case: We report the case of a 46-year old male patient who presented with multiple episodes of severe haemotochezia and anemia. He had a right flank mass. CT scan of the abdomen showed a large right kidney mass together with a lesion in the ascending colon, not connected to the renal mass. It also showed hepatic metastasis, lung metastasis and ascites. Colonoscopy revealed an ascending colonic mass. The patient was managed by right nephrectomy and right hemicolectomy. The pathology report of the colonic mass showed clear cell carcinoma with involvement of the colon from serosa to mucosa. It indicated the presence of haematogenous spread of the RCC as the mechanism of metastasis. The colonic haemorrhage did not recur. the patient survived close to a year after surgery.

Conclusion: RCC metastasis to the colon is very rare and can be synchronous with the primary renal tumor and can be metachronous after nephrectomy. Also, it can be the result of direct invasion, haematogenous spread or after local recurrence following nephrectomy. Metastatic RCC requires surgery, immunotherapy, tyrosine kinase inhibitors, and mammalian target rapamycin inhibitors. Surgery is the first step for disease control and control bleeding from colonic metastasis. Metastectomy is indicated in localized disease and when surgically accessible.

Keywords: Colonic Metastasis, Renal Cell Carcinoma, Colonic Haemorrhage.

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Introduction

Renal-Cell Carcinoma (RCC) accounts for 2-3% of all cancers[(1)]. Its incidence has been rising steadily[(1)], and the increased incidence has been accompanied by a small but

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significant improvement in five-year survival[1]. Clear cell carcinoma makes up 75 to 85 percent of RCC[2].

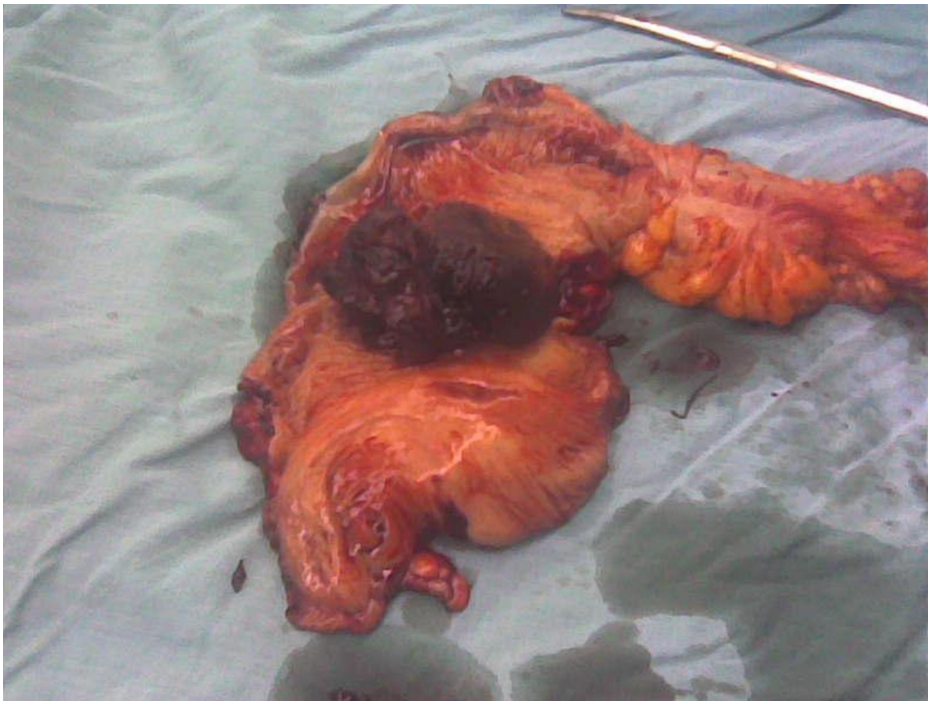

Figure 1: Ct scan of the abdomen revealing a huge (13X 10 cm) renal mass that shows irregular enhancement pattern and large necrotic Component. The mass extended to involve the perinephric Fascia

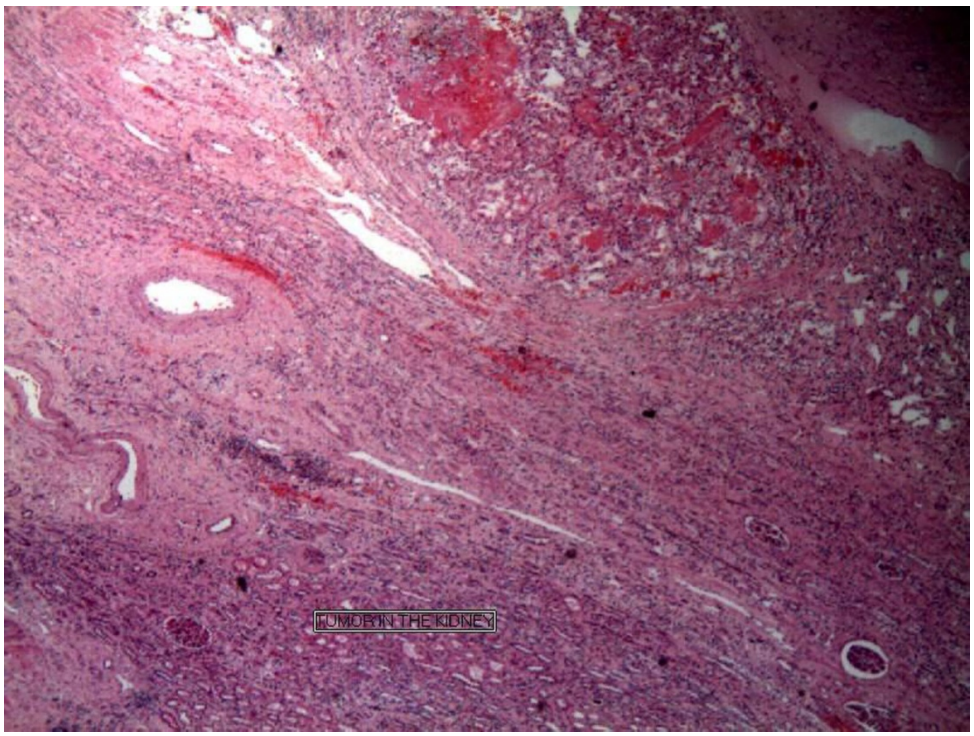

Figure 2: CT scan of the abdomen showing a soft tissue lesion infiltrating the right colon

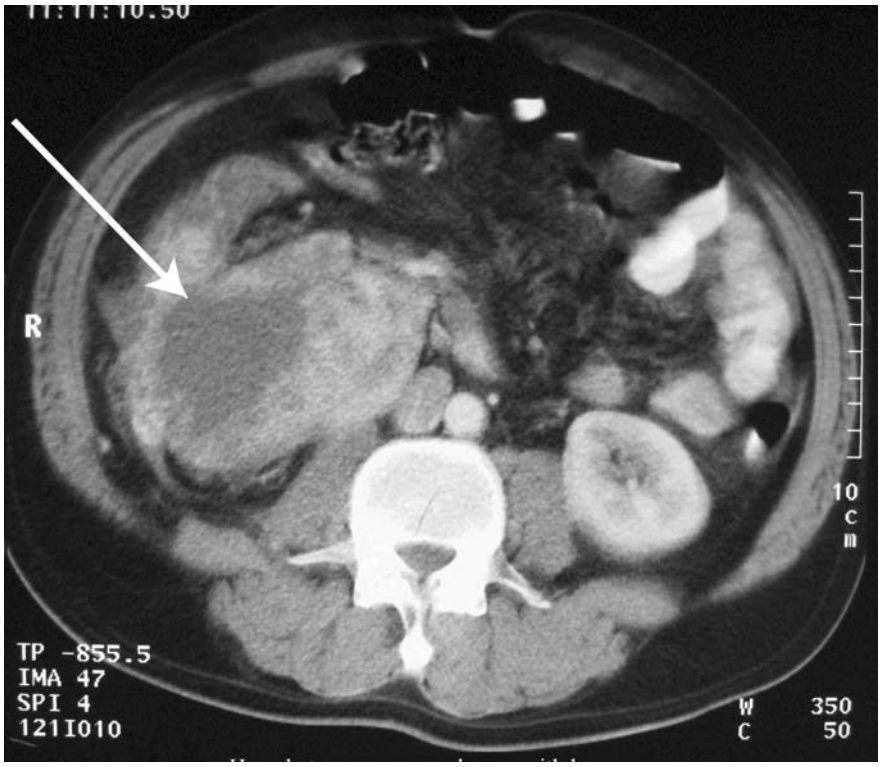

Figure 3: Surgical specimen showing a purpulish coloured mass on the right colon

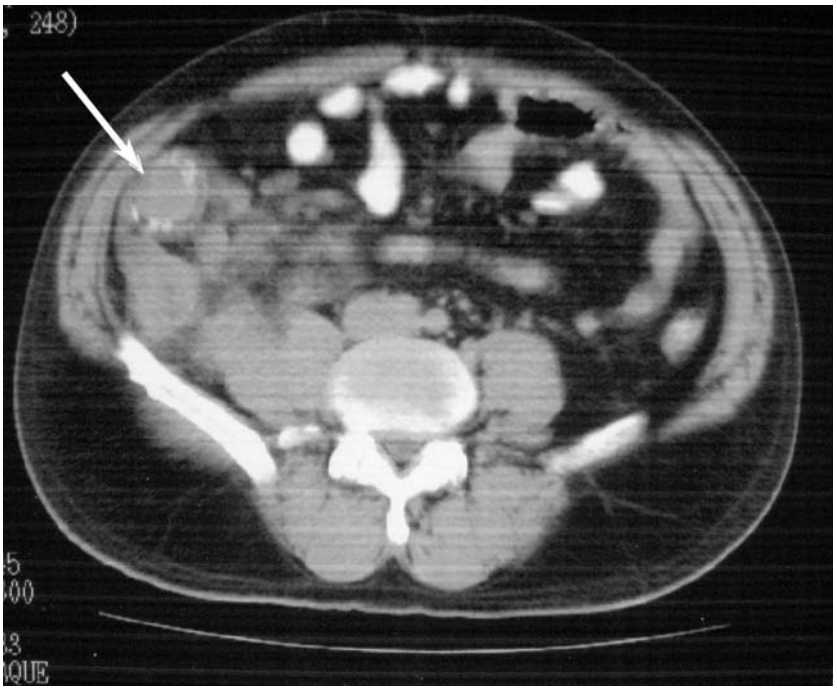

Figure 4: Histological findings of the resected renal tumour show a clear cell carcinoma (Haemotoxylin-Eosin x 400)

Renal-Cell Carcinomas have been known to present clinically in peculiar ways. While the majority of patients present with a primary renal mass, as many as one third presents

initially with metastasis[3]. They tend to metastasize to numerous sites, particularly the lungs, bone, liver and brain[4]. There are only few reported cases of clinically significant haematogenous metastasis to the colon. We present a case of RCC producing a symptomatic haematogenous metastasis causing severe recurrent lower gastrointestinal haemorrhage that required a right hemicolectomy.

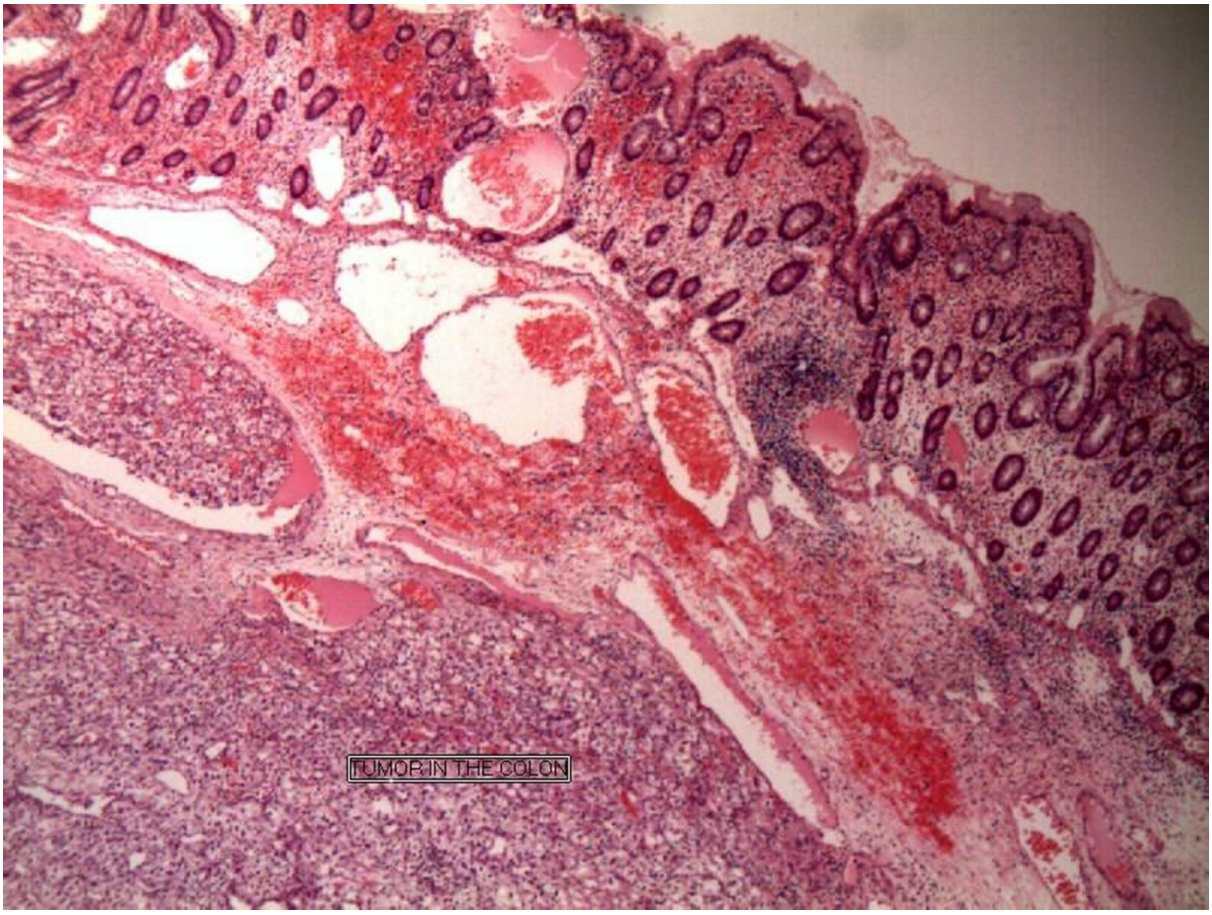

Figure 5: Histologic examination showing clear-cell proliferation predominantly in the submucosal layer of the colon without mucosal invasion. (haematoxylin & Eosin)

Case Report

A 46-year old male patient was admitted to Jordan University Hospital in October 2008 with multiple episodes of lower gastrointestinal bleeding resulting in severe anaemia (haemoglobin 7.2 g/dl). He had significant weight loss and loss of appetite, together with pain in the right abdomen. On examination, a palpable mass in the right flank was noted. He had hepatomegaly, ascites and jaundice.

Computed tomography of the chest, abdomen and pelvis revealed a markedly abnormal right kidney containing a mass measuring 13x 10cm. The left kidney was normal. The scan also showed extensive hepatic metastasis, multiple pulmonary nodules, and ascites. In addition, it revealed a lesion in the lumen of the ascending colon unconnected to the right renal mass. Colonoscopic examination revealed a large exophytic very friable mass protruding into the

lumen of ascending colon. The endoscopically obtained biopsies of the mass were negative for malignancy. During a course of three weeks, the patient continued to bleed per rectum and required multiple transfusions of a total of 16 units of blood to maintain his hemoglobin around 10mg/dl. Considering the location of his colonic lesion and recurrence of his lower GI bleeding, the patient was managed by right nephrectomy and right hemicolectomy Intraoperatively, it was evident that his colonic tumor was not the result of a direct invasion by the renal mass.

His postoperative course was uneventful except for the progressive increase of his ascites. The patient was referred to the medical oncology clinic for chemotherapy. The patient improved for the first eight months, then his disease progress, and died 11.5 months after surgery.

The primary tumour in the right kidney invaded through the Gerota's fascia and was not associated with lymph node metastasis. Histologically, the tumour was a Fuhrman grade 4 renal cell carcinoma of the clear cell type. Microscopic analysis of the colonic lesion and the liver biopsies showed features that were strongly consistent with metastatic renal cell carcinoma (Figure 5).

Discussion

The colon is among the unusual sites of metastasis for RCC. In an autopsy study, 9 percent of 1173 patients with multiple metastasis from RCC had intestinal involvement[5]. However, there are few reports in the literature of clinically evident colorectal and anal metastasis from RCC[5-14].

Metastasis to the colon from RCC may be caused by direct extension, lymphatic spread, and dissemination through the Batson's venous plexus, peritoneal or haematogenous dissemination. In the present case, the tumour protruded into the lumen of the ascending colon. It reached the outer covering of the colon but it did not invade the pericolic fat. Inspite of the presence of liver and lung metastasis plus ascites, no other colo-rectal metastasis was found by colonoscopic examination or after through searching during the operation. We think that this case represent a clinically significant synchronous solitary colonic metastasis in a patient with multiple liver, and pulmonary metastasis plus ascites. This presentation has only been reported by Zerbib F, et al.[9], and by Valdespino-Casteillo VE & Ruiza Jaime A.[13].

Metachronous metastatic disease is common and may develop in 50 Percent of patients who undergo curative nephrectomy. Recurrence manifested as a solitary colonic metastasis is extremely unusual and the recurrence can present many years, (up to 17 years) after nephrectomy[6]. Haematochezia is the presentation in the majority of reported cases [7,9,10,13]. It may also present as intestinal obstruction or as an abdominal mass. Colonoscopy usually reveals a polypoid mass which is purplish in colour and hypervasuclar as in this case. A hypervascular colonic mass can be demonstrated on arterial-phase helical CT using water enema. Colonic metastasis from RCC should be considered when endoscopic or CT studies show a hypervascular colonic mass in a patient with previous history of RCC.

Lower gastrointestinal bleeding can be the initial presenting symptoms of RCC[15]. Also, it has been described in RCC secondary to

metastasis in the upper gastrointestinal tract, and in few cases of local invasion [15]. Any patients presenting with gastrointestinal bleeding after nephrectomy for RCC should undergo a contrast enhance CT scan of the abdomen and an upper and lower gastrointestinal endoscopic evaluation for the possibility of RCC metastasis, regardless of the time interval from nephrectomy.

In addition any patient with a kidney mass plus upper gastrointestinal bleeding should undergo full endoscopic and imaging evaluation to exclude colonic metastasis or local invasion of the colon.

Prognosis of metastatic RCC has markedly improved in the recent years [16] . Surgery is the first step for disease control and for management of complications of gastrointestinal metastasis. Metastectomies are indicated in localized disease or when organ is affected and surgically accessible [13]. Drug therapy for metastatic RCC has been more successful in recent years [17] . In addition to chemotherapy, the list include immunotherapy, tyrosine kinase inhibitors. and mammalian target of rapamycin inhibitors. From 2006 to 2014, seven druges have been approved for metastatic RCC. Among these two are recommended as the second line of therapy with a grade 1 evidence[16,17]. Results of drug therapy for metastatic RCC are encouraging and may be translated into routine clinical practice in the near future[16,17].

In conclusion, clinically significant synchronous haematogenous colonic metastasis from a primary RCC may cause severe lower gastrointestinal haemorrhage and severe anaemia. Gastrointestinal endoscopy and abdominal imaging studies are very helpful in conforming the presence of RCC metastasis as a cause of haemorrhage. Surgery can be effective for management of metastatic RCC associated with gastrointestinal bleeding. Drug therapy for metastatic RCC is promising and the prognosis is improving.

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نقيلة قولونية وحيدة ودموية المنشأ، مزامنة لسرطانة خلايا كلوية أولية: سبب استثنائي لنزف قولوني: تقرير عن حالة

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الملخص

الخلفية: تشكل سرطانة الخلايا الكلوية ما مجموعه 2-3% من الأورام التي تصيب البالغين. وتعد سرطانة الخلايا الصافية أكثر الأنواع النسيجية شيوعاً، ويكون لدى 25-30% من سرطانة الخلايا الكلوية نقائل عند التشخيص. ونادراً جداً ما ترسل نقائل إلى القولون. والهدف من هذه الدراسة هو كتابة التقرير عن نقيلة قولونية وحيدة ودموية المنشأ مزامنة لسرطانة خلايا كلوية برزت كنزيف معدي معوي رجيع وشديد. وهذا مما تطلب العلاج باستئصال نصف القولون الأيمن واستئصال الكلية اليمنى بالإضافة للعلاج الكيماوي.

الحالة السريرية: نسجل تقريراً عن حالة مريض ذكر عمره 46 عاما. برز على شكل نوائب عدة من تغوط دموي مصحوب بفقر دم. وكان لديه كتلة محسوسة في خاصرته اليمنى. وأظهر تصويره بالرنين المغناطيسي وجود كتلة في الكلية اليمنى مع آفة في القولون الصاعد، ليست متصلة بالكتلة الكلوية. وأظهر كذلك وجود نقائل كبدية ورئوية، مع استقساء. أما تنظير القولون فبين وجود كتلة في القولون الصاعد. وتم علاج المريض جراحياً باستئصال القولون الأيمن والكلية اليمنى. وأشار تقرير علم الأمراض إلى وجود سرطانة الخلايا الصافية مع إصابة القولون ما بين المصل والغشاء المخاطي. وهذا يعني أن سرطانة الخلايا الكلوية كانت قد انتشرت للقولون عن طريق منشأ دموي. هذا ولم يعاود النزف المعدي المعوي المريض بعد الجراحة، وعاش المريض لمدة تقارب العام بعد الجراحة.

الاستنتاج: إن حدوث نقائل من خلايا سرطانة الكلى إلى القولون نادراً جداً. ويمكن أن يكون مزامنا لسرطانة الكلية الأولية. ويمكن حدوثه لاحقاً لاستئصال الكلية. فكذلك يمكن حدوثه نتيجة الغزو المباشر للقولون أو بوساطة الانتقال الدموي أو بعد الرجوع الموضعي لسرطانة الكلية. ويحتاج علاج نقائل خلايا سرطانة الكلية لاستعمال الاستئصال الجراحي، المعالجة المناعية، استعمال مثبطات الكاينيز، أو استعمال مثبطات البراميسين الموجه. أما الجراحة فتعتبر الخطوة الأولى في طريق علاج النقائل، فهي تمكن من السيطرة على المرض مع السيطرة على النزف. ويمكن استعمال الجراحة إذا كان المرض متوضعاً ويمكن الوصول إليه جراحياً.

الكلمات الدالة: السرطنة، الخلايا الكلوية، نقيلة قولونية، نزف قولوني.