



Case Report

Synchronous colorectal and renal cancers: Case report and literature review



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ABSTRACT

Introduction: Even though colorectal cancer is one of the most frequent in the world, its simultaneous presence with other neoplasms, such as renal, is still rare in incidence. This article aims to report and expose a literature review of the synchrony of colorectal cancer and renal carcinoma.

Presentation of case: A 57-year-old female patient complaining of diffuse abdominal pain that worsened with food and improved with evacuation, especially in the periumbilical region and right iliac fossa, from moderate to strong intensity, starting 1 year ago, worsening in the last 3 months. An abdominal CT scan was performed, showing a lesion in the right kidney and a narrowing of the ascending colon lumen. Due to the possibility of cure, we opted for right colectomy and right nephrectomy at the same surgery.

Discussion: Synchronous tumors are neoplasms in which the diagnostic interval is up to 6 months, and must be differentiated from metachronic neoplasms and even metastases between tumors. The incidence of synchronous colorectal and renal cancer is rare but appears to be divergent.

Conclusion: The presence of synchronous tumors can be evidenced in imaging tests, such as CT scan, but appropriate diagnostic tests for each neoplasm, such as colonoscopy, should not be ruled out. The treatment of choice must be surgery, when possible, with the options of conventional access, videolaparoscopic and robotic surgery.

1. Introduction

Colorectal cancer (CRC) is the most common malignancy of the gastrointestinal tract. It is estimated that approximately 145,600 new cases of large bowel cancer are diagnosed annually in the United States, including approximately 101,420 colon and 44,180 rectal cancers. Although the mortality from CRC has progressively declined since 1990, at a current rate of approximately 1.7–1.9% per year, it remains the third most common cause of cancer death in the United States in women and the second leading cause of death in men. In Brazil, CRC is the fifth most diagnosed malignant neoplasm (ranking second in the Southeast region) and the fourth cause of death from cancer [1].

Renal cell carcinoma represents between 1% and 3% of the cases of visceral malignant neoplasms and is the ninth most common in women,

taking into account the different histological forms and subtypes. Clear cell-type renal carcinoma and signet-ring cell adenocarcinoma of the colon are tumors, in isolation, quite frequent. However, the synchrony between the aforementioned cancers is of very rare incidence [2].

This article aims to report and expose a literature review of the synchrony of colorectal cancer and renal carcinoma. This case follows 2020 SCARE guidelines for reporting of cases in surgery [3].

2. Presentation of case

A 57-year-old female patient complaining of diffuse abdominal pain of the colic type that worsened with food and improved with evacuation, especially in the periumbilical region and right iliac fossa, starting 1 year ago, worsening in the last 3 months. She often had diarrhea or feces in a

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foul-smelling tape. She denied weight loss or any kidney symptoms. Previous surgeries submitted to 02 cesareans, conventional cholecystectomy in 1994, hysterectomy with bilateral oophorectomy in 2006. She denied familial neoplasm. On physical examination, the patient was in good general condition. Flat, flaccid abdomen, slightly distended, painful on palpation in the iliac fossa and right flank.

Abdominal CT scan was performed first due to the ease of performing this exam at the time of the first assessment, showing an expansive, contrast-enhancing lesion measuring 7 × 6.7cm in the inferior pole of right kidney, observing central hypodense area, not capturing contrast. Apparent narrowing of the intestinal lumen of the intestinal colon of the ascending colon, in its distal third (Fig. 1). Magnetic resonance imaging (MRI) for evaluation of kidney tumor and colonoscopy for better evaluation and biopsy of colon tumor were requested. MRI showed an expansive lesion involving lower and middle third of right kidney, measuring 7.2x7.2 × 7.3cm with an estimated volume of 189.2cm³ (Fig. 2).

In a colonoscopy, an ulcerative-infiltrative lesion of circumferential, subocclusive, friable, and bleeding to the touch, which prevents the passage of the device, can be seen at the level of the hepatic angle (Fig. 3). The biopsy result was moderately differentiated adenocarcinoma of the colon. We requested laboratorial preoperative exams, without alterations, initial CEA 3.8ng/ml. Chest CT scan was requested for staging, without tumors or lymph nodes alterations.

The patient submitted to exploratory laparotomy one month after. Intraoperatively, a stenotic tumor of the colon was identified in the hepatic flexure of about 3 cm with enlarged pericolic lymph nodes up to the root of the mesentery (T4aN + M0) and a mass in the inferior pole of

the right kidney, invading the renal pelvis, measuring about 8 cm, without enlarged regional lymph nodes (T3N0M0) and identified a serous superficial lesion in the anterior wall of the gastric body, measuring about 2 cm. Right hemicolectomy was performed with primary transit reconstruction by ileocolonic anastomosis. Also proceeded for right radical nephrectomy. Both procedures were performed with lymphadenectomy and a Blake's drain was introduced in right paracolic gutter. Biopsy of the lesion in the stomach anterior wall was realized. Post-surgery, the patient evolved with nausea and vomiting, so there was a slow progression of the diet. On the eighth postoperative day, she had regular intestinal transit, evolving with drainage of chylous secretions through Blake's drain. Treated chylous ascites conservatively, with drain removal after 21 days.

The histopathological analysis of nephrectomy showed clear cell renal carcinoma, Furhman 1, measuring 6.0 cm in the largest dimension, with the presence of edematous areas, loose hyaline conjunctiva. No other lymphovascular infiltration was observed in the evaluated sections. Pathological staging pT1b pNx. Analysis of right colectomy showed moderately differentiated tubular adenocarcinoma, vegetating, obstructive, measuring 3.0 cm in the largest dimension and infiltrating the colonic wall to the perivisceral adipose tissue, extending focally to the radial margin. Presence of vascular infiltration. Free surgical margins. Pathological staging: pT4a pN0. The gastric body lesion corresponds to a nodular area of sclerosis, with foci of calcification of different diameters, without suggestive signs of malignancy. In a restricted peripheral area, lymphoid accumulation without particularities.

The patient started adjuvant chemotherapy in the following month

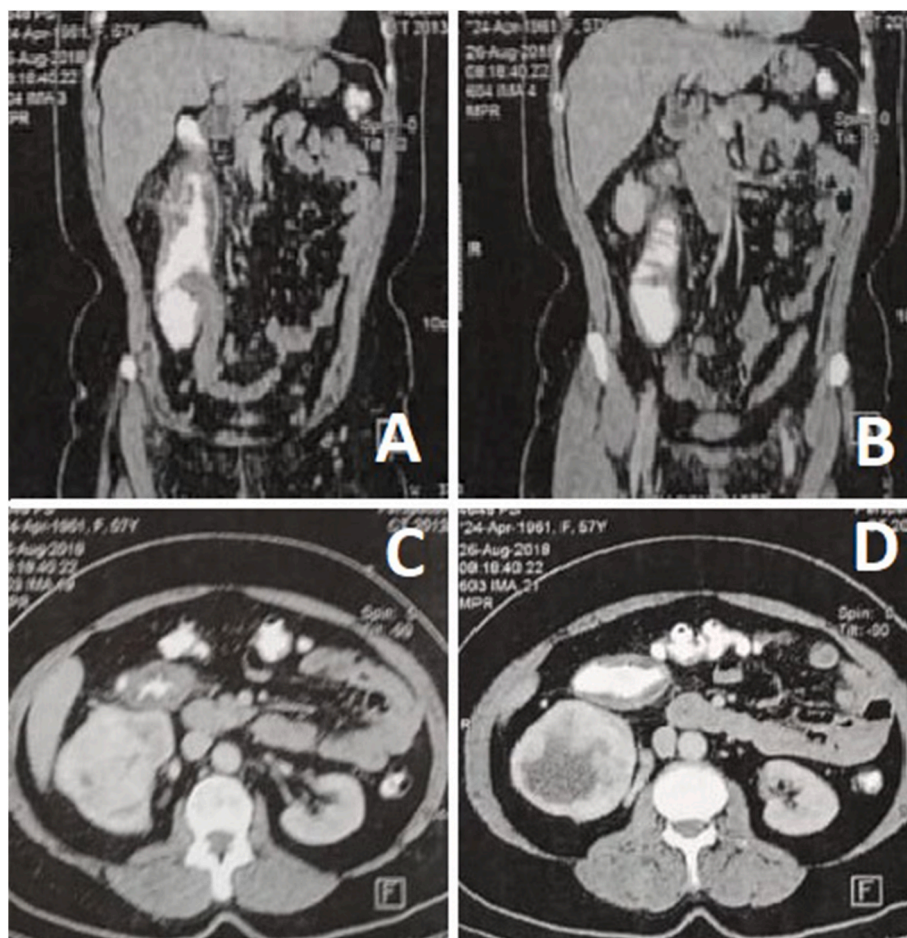


Fig. 1. Abdominal CT with apparent narrowing of the ascending colon in its distal third (A and B). Contrast-enhancing expansive lesion, measuring 7x6x7 cm in the lower pole of the right kidney, with a central hypodense area, not capturing contrast (C and D).



Fig. 2. Abdominal magnetic resonance imaging with expansive lesion involving the lower and middle thirds of the right kidney measuring 7.2× 7.2 × 7.3 cm in its largest diameters (estimated volume of 189.2 cm³), with an extensive area of necrosis/liquefaction of probable neoplastic etiology (A). The lesion shows signs of invasion of the fat from the right renal sinus, in addition to presenting an exophytic component that does not clearly invade the right perirenal fat (A and B). Mild parietal thickening in the terminal ileum, cecum and ascending colon, without signs of restricted diffusion, with mucosal enhancement, with a nonspecific aspect (C).

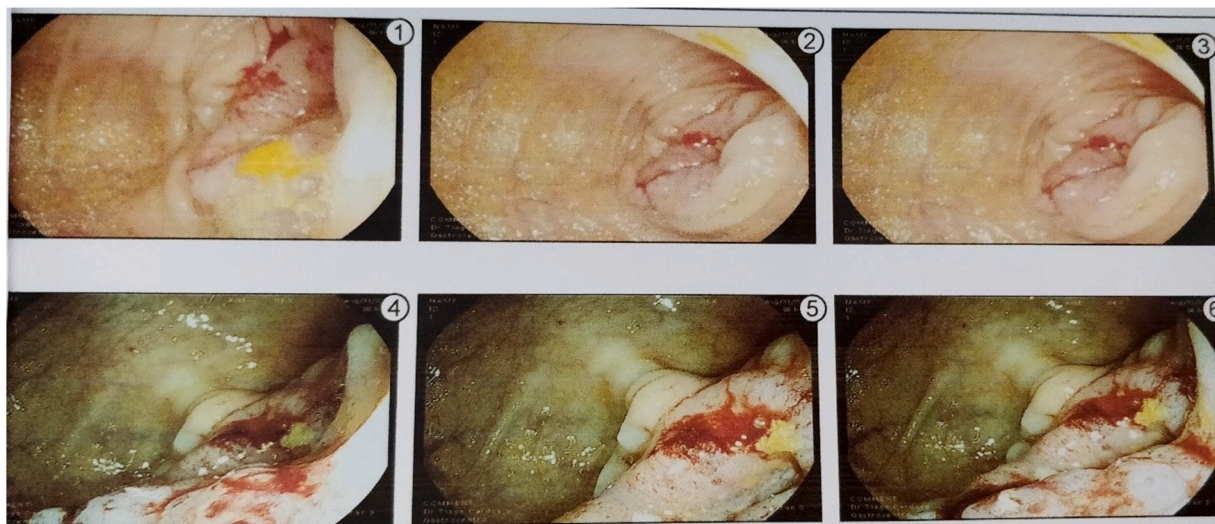


Fig. 3. Colonoscopy showing subocclusive ulcero-infiltrative lesion at hepatic angle.

with capecitabine, at the end of 8 cycles for 6 months. She is currently being followed up with clinical and surgical oncology ever. The follow-up of our patient is being carried out every 3 months with serum carcinoembryonic antigen (CEA) dosage, blood count, and routine biochemistry. Today, after 2 years, the patient is in good general condition, with no recurrence of both cancers.

3. Discussion

Primary tumors can be diagnosed simultaneously or in close periods. These, if they do not present a histopathological relationship, can be divided into synchronous and metachronous depending on the time of diagnosis. The first is defined by two or more neoplasms that developed within the same period or up to 6 months after the first diagnosis [4]. In addition, they must present different malignancies, different histological types and the possibility of one being a metastasis of the other must be excluded, as in the case reported. Metachronous tumors are those that are evidenced between 6 months and three years [5]. Beyond this time, there is no relationship between the tumors, and metastasis may be suspected.

The synchronous relationship between colorectal cancer (CRC) and kidney cancer (KC) has a variable incidence among studies on both. Incidences as low as 0.33% are more common; however, in one study, 4.85% of renal cancer synchrony was evidenced among cases of colorectal cancer, and it concluded that this number may be higher [6,7].

The frequency of synchronous CRC within the total cases of KC is higher than the finding of KC in cases of CRC, mainly due to the higher prevalence of CRC in the general population [8].

The diagnosis of CRC is based on clinical suspicion and colonoscopy with biopsy, as it allows real-time visualization of tumors and synchronous lesions in other portions of the colon [9]. Technically in the case reported, there were not many clinical signs that could suggest CRC. The main indication of the presence of a tumor in the colon was the tomographic finding. However, diagnosing KC is very difficult by clinical examination, with symptomatic and advanced cases with a difficult prognosis [10]. Therefore, most cases of synchronous tumors occur with a diagnosis of CRC and an incidental finding of KC, especially during the preoperative period, facilitated by the accessibility of imaging tests such as CT scan [4]. However, this does not exclude the possibility of a simultaneous finding on imaging exams as well as the incidental finding of CRC during the investigation of KC [11,12]. Abdominal CT is not the gold standard for diagnosing colorectal cancer, and that other exams are preferred. In the case reported, however, this exam was performed due to the initial investigation of the patient for abdominal pain. The clinical case in question is quite illustrative about the importance of the role of tomography, especially when associated with colonoscopy during screening in the identification of synchronous lesions, since it modifies the therapeutic proposal, bringing benefits to survival and prognosis. Although there are no reports of association of KC and CRC in genetic syndromes, such as Lynch syndrome, this is a differential diagnosis that

must be evaluated [13].

The patient under study underwent a right colectomy associated with right total nephrectomy. Despite being long procedures separately, there is no consolidated increase in mortality when associated, due to few studies performed and these with few evaluated patients [8]. Currently, videolaparoscopic treatment is possible and considered the initial choice, although it requires a lot of experience, and in most cases, two teams for each procedure [14]. Another associated difficulty is the control of operative time, which can be over-understood [15]. Robotic surgery has proven to be a viable option when available [16]. In the case reported here, the choice of laparotomy was due to the lack of adequate material for video laparoscopy at the unit, and the surgery was possible mainly due to the absence of distant metastases.

4. Conclusion

Colonoscopy and abdominal CT scan are essential in early diagnosis of the synchronous CRC and KC, given the great advantage of this combination in detecting the tumor, metastases, synchronous lesions, and, consequently, staging. The main treatment for these two pathologies is surgical resection of the affected region with margins free of neoplasms. Finally, simultaneous primary renal and colorectal neoplasms may occur with a higher incidence than expected.

Ethical approval

As the manuscript is not a research study, we only have the patient consent for writing and others forms of publication. Also, the ethical approval for this case reports has been exempted by our institution.

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We do not have any funding source, this manuscript is just a case report, not a research.

Author contribution

Juan Rodriguez, Alberto Figueiredo, Írian Rabelo made contributions to conception and design. Renato Galvão, Danielle Barbosa, José Saint'Clair collected the patient details and wrote the paper. Carolina Maués, Giselle Macedo, Higino Figueiredo, made contributions to patient management. Írian Rabelo, Giselle Macedo critically revised the article. All authors read and approved the final manuscript.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Registration of research studies

The manuscript is a case report, not considered a formal research involving participants.

Guarantor

Írian Evelyn Cordeiro Rabelo.

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Declaration of competing interest

We do not have any conflicts of interests.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2021.103187>.

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