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Case report

Primary signet-ring cell carcinoma of the cecum: A rare case report

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ABSTRACT

Introduction and importance: Primary SRCC is a rare histological colorectal cancer subtype. It is characterized by distinct clinical presentation.

Case presentation: This case report describes a rare case of a Primary Signet-ring cell carcinoma of the cecum. A 37-year-old man came to the emergency department with bowel obstruction and altered general condition. The abdominal CT scan showed an intestinal occlusion upstream a thickening of the cecum. An exploratory laparotomy found a distention of the bowl with a suspect thickening of the cecum. The patient underwent a right ileo-colectomy and ileocolostomy.

Histologic analysis of the operatory specimen confirmed the diagnosis of a primary Signet-ring cell carcinoma of the cecum. The recovery was uneventful, and the patient is in good health after six –months of follow-up. After completing the chemotherapy, the patient is scheduled for a colonoscopy and reversal of colostomy.

Clinical discussion: Colorectal primary signet ring cell carcinoma (SRCC) is a rare entity, and it is associated with poor prognosis compared with common colorectal adenocarcinomas.

characterized by distinct clinical presentation, with very poor response rates.

Conclusion: Primary SRCC is an aggressive histological type of colon cancer and it is associated with a poor prognosis. There are no conclusive guidelines for the treatment of this type of tumor.

1. Introduction

Signet-ring cell carcinoma (SRCC) is a very rare type of colorectal cancer accounting for less than 1 % of all colon tumors [1,3].

Primary Signet-ring cell carcinoma (SRCC) is more likely to be seen in the stomach, and metastatic gastric carcinoma is the first differential diagnosis to be eliminated with endoscopy.

The histological features of SRCC are that the neoplastic cells contain abundant intracytoplasmic mucin pushing the nuclei to the periphery, which makes the cells look like signet rings.

The prognosis of SRCC remains poor.

We present a rare case of signet cell carcinoma of the colon in a 37-year-old patient, revealed by a bowel obstruction, and discuss the diagnostic and therapeutic modalities.

This work has been reported following the SCARE Guidelines 2020 [10].

2. The case report

The patient was a 37-year-old man, with no medical, drug or family history.

He had been referred to the emergency department for the management of acute abdominal pain evolving for three days, associated with bowel obstruction, three episodes of vomiting, and altered general condition (loss of 15 kg of body weight in two months), without any other signs.

On admission, we found a mildly cachectic man, conscious, hemodynamically, and respiratory-wise stable and no jaundice was noted.

On physical examination, His heart rate was 85 beats/min, blood pressure was 110/89 mmHg, respiratory rate was 17 breaths/min, and oxygen saturation was 100 % under normal conditions, however, The abdominal examination showed a distended abdomen deep tenderness in the lower right quadrant, without any palpable mass (Figs. 1–3).

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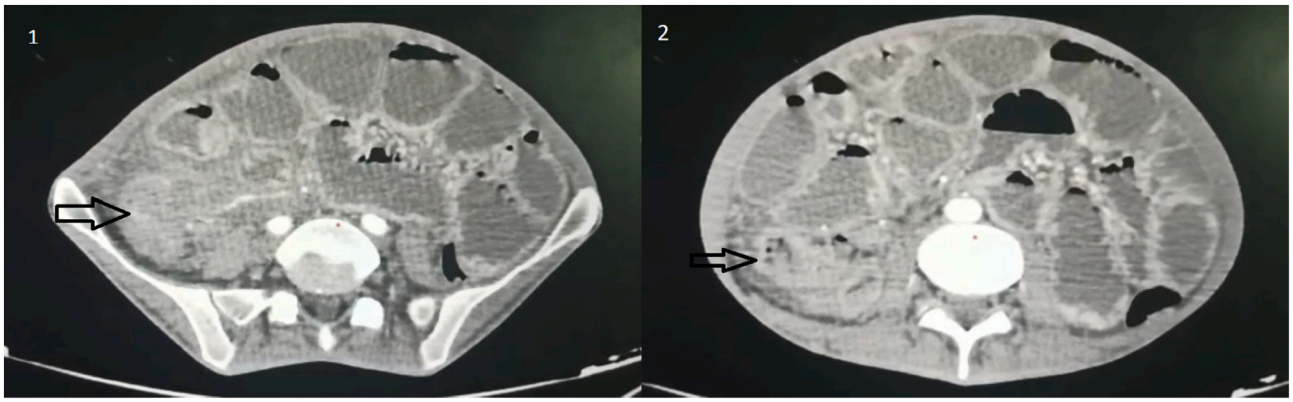

Fig. 1. Abdominal CT scan showing an intestinal occlusion upstream a thickening of the Cecum.

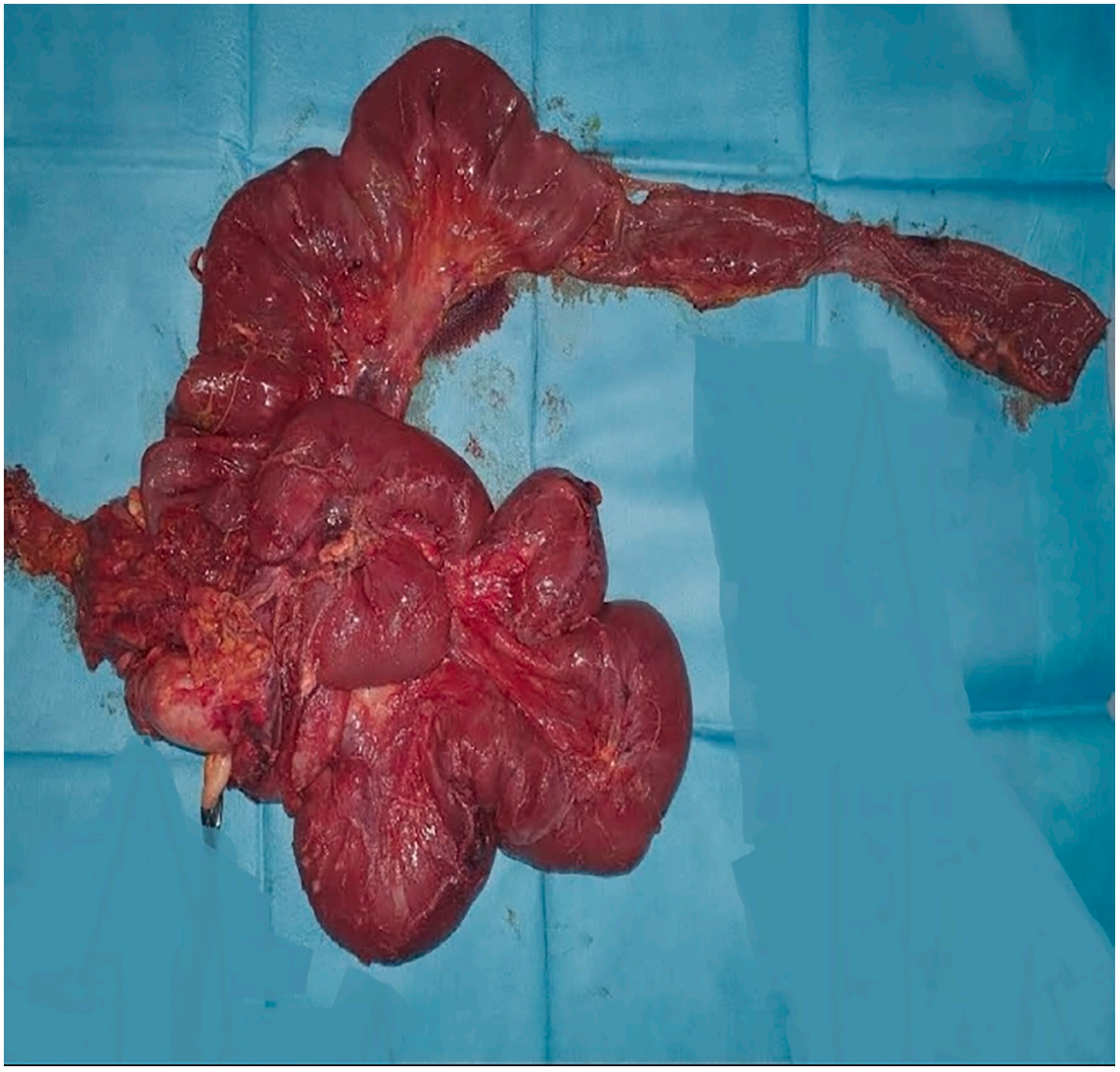

Fig. 2. Image showing the right ileo-colectomy.

The biological analyses performed in the ER showed an elevated C-reactive protein level of 30 mg/L and low albumin of 25 g/L. Other bloodwork was without any anomalies.

An abdominal CT scan showed an intestinal occlusion upstream a thickening of the Cecum and the ileocecal junction.

The patient underwent right ileo-colectomy and ileocolostomy, on surgical exploration; distention of the bowl upstream a suspect thickening of the cecum was found, associated with multiple intestinal fistulas, with no hepatic metastases or peritoneal carcinosis.

We removed 70 cm of ileum and 46 cm of the right colon, taking out the grelo-grelic and the grelo-colic fistulas.

The anastomosis has been delayed because of the multiple intestinal

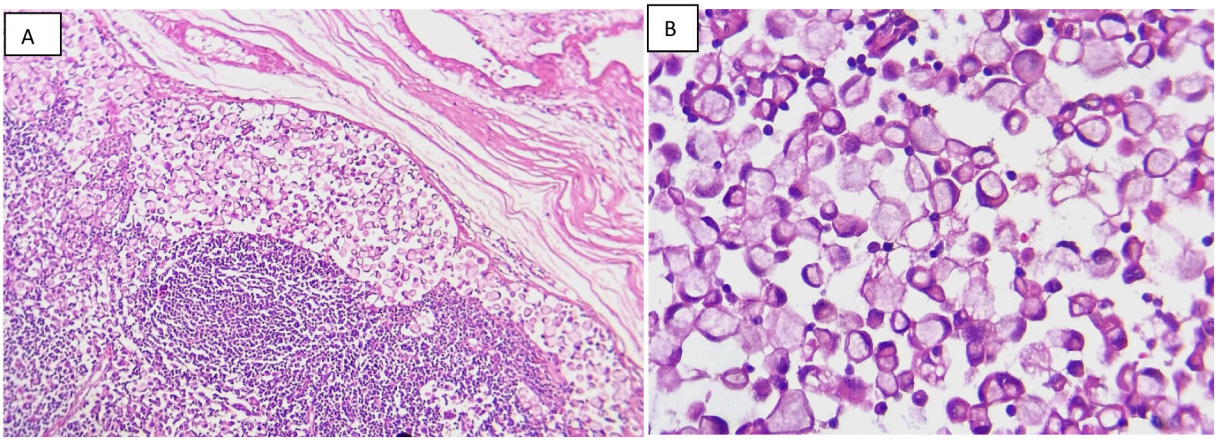

Fig. 3. A: microphotograph showing a tumor proliferation made of diffuse cell layers, dissociated by a fibrous, the tumor cells have marked cyto-nuclear atypia, with elongated, oval, hyperchromatic, and finely nucleated nuclei (HE, ×100).
B: the tumor cell 's cytoplasms are abundant and vacuolated, pushing the nucleus to the periphery, realizing a " signet ring " aspect. (HE, ×200). HE: hematoxylin and eosin.

fistulas and the low rate of albumin.

The postoperative recovery was uneventful.

We removed the drain and discharged the patient on day fifth.

The anatomopathological results were in favor of Signet-ring cell carcinoma of the colon invading subserosa and involving 21 of 45 pericolic lymph: the tumor was classified pT4bN2bMx.

In the follow-up of our patient, he started on adjuvant chemotherapy with 6 rounds, he is currently in round 5 without complications.

After completing the chemotherapy, the patient is scheduled for a colonoscopy and reversal of colostomy.

3. Discussion

Colorectal primary signet ring cell carcinoma (SRCC) is a rare entity, with an incidence of 0.5–2.6 % [4], predominant in male patients, and with a medium age between 48 and 70 years.

Signet ring cell carcinoma (SRCC) arises in the stomach. However, it was also described in the lung, breast, gallbladder, pancreas, bladder, and rarely in the colon.

The most frequent localization in the colon is the right side, while 20 % have been reported in the rectum [5].

However, it is seen frequently in the advanced stage with 90 % of the patients being diagnosed with T3 or T4 tumors [5].

This can be explained because there are few symptoms that are specific to this tumor; due to the intramucosal spread, and radiologically it's difficult to differentiate it from inflammatory processes, and also because this type of carcinoma is very aggressive and has a high rate of lymphovascular invasion [6].

This aggressivity is related to higher rates of microsatellite instability (19 to 43 %), compared to conventional adenocarcinoma, and because the cellular abnormality does not involve cell-to-cell adhesions [7], and finaly, the peritoneal surface is more likely to be the first localization of metastasizing.

Colorectal SRCC has a worse prognosis than mucinous carcinoma, and its pathogenesis has not been fully understood yet, however the inflammation-metaplasia-dysplasia-carcinoma sequence with earlier identified molecular changes in TP531 is the possible carcinogenic pathway [9].

The American Society of Clinical Oncology has published the current guidelines related to Stage II colon cancer, and they recommend adjuvant treatment of patients with stage II only in the presence of high-risk criteria such as T4 stage, inadequate lymphadenectomy, bowel obstruction or perforation, poor histological differentiation, and lymphovascular or perineural invasion [8].

However, the chemotherapy efficacy in the adjuvant setting has been confirmed by the recent studies, that there is no difference between SRCC patients and those with adenocarcinoma [5].

4. Conclusion

Primary SRCC is a rare entity, and Signet cell is a poor prognostic factor, we have shown through this case report a rare case of primary SRCC of the cecum, there are no conclusive guidelines for the treatment of this type of tumor, its treatment is based on surgery, when possible, or chemotherapy, with very poor response rates.

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Ethical approval

No ethical approval necessary.

Consent

Consent was obtained from the patient for publication of the 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.

CRediT authorship contribution statement

Dr Derkaoui Anas: have written the article, have consulted the patient, and prepared the patient for surgery and participated in the surgery.

Dr Deflaoui Tarik: have helped writing the article, data collection.

Dr Soussan haitam:have helped collecting data.

Dr Mabrouk Mohamed Yassine: have helped writing the article.

Dr Madani Ayoub: have helped writing the article and participated in the surgery.

Dr Malki Samia: interpretation of histological data.

Pr Jabi rachid: supervised the writing of manuscript.

Pr Bouziane Mohamed: have supervised the writing of the paper, and has been the leader surgeon of the case.

Registration of research studies

Our paper is a case report; no registration was done for it.

Guarantor

Derkaoui Anas.

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None.

Declaration of competing interest

There are no conflicts of interest with respect to research, authorship and/or publication of the article.

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