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RARE CASE OF SIGMOID COLON ADENOCARCINOMA INVADING THE VERMIFORM APPENDIX

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Abstract: *Colorectal cancer (CRC) ranks third in the top of the most common neoplasms in both women and men, with a high mortality rate. In the etiopathogenesis of colorectal cancer, genetic and environmental factors play an important role. In recent years, there has been a decrease in the incidence of new cases and mortality among patients over the age of 50. This can be explained by the application of modern multimodal treatment methods as well as by increasing the use of screening methods. Particular attention should be paid to inherited syndromes such as Lynch syndrome and Familial Adenomatous Polyposis, which together account for 5% of all colorectal cancers. It was found that an accumulation of genetic mutations over a period of 10 to 15 years, leads to changes in the normal colonic epithelium, with the eventual appearance of invasive carcinoma.(1,2)*

INTRODUCTION

In recent decades, considerable efforts have been devoted to understanding the genetic and pathophysiological basis of colorectal cancer, which ranks third in the ranking of causes of cancer mortality worldwide. About 50% of patients suffer from complications of metastatic dissemination mainly in the liver, lung, intraperitoneal and bones.(3)

Although the peritoneum has long been considered a natural barrier to transmural infiltration of cancer cells, it can be invaded locoregionally by two mechanisms.(4) The first, preoperative, is represented by the penetration of the neoplasm through all the layers of the intestinal wall (stages T3-4) or the spontaneous perforation of the intestine. The second, intraoperative, due to the mobilization of neoplastic cells in transit through lymphatics, blood vessels or intestinal lumen, which can be disseminated at the time of resection.(5)

The "natural" development of peritoneal metastases involves the exfoliation of tumour cells from the intestinal serosa by gravitational force to the pelvis, and adhesion is facilitated by various molecules: vascular cell adhesion molecule 1 (VCAM-1), platelet cell adhesion molecule (PECAM- 1), CXCR4, CD44, mucin 16 (MUC16) and intracellular adhesion molecule 1 (ICAM-1). Once serous adhesion and infiltration is complete, subserosa invasion is likely to occur in areas of parietal cell discontinuity.(6)

CASE REPORT

We report a case of a 65-year-old male presented with a 4-month history of bleeding per rectum and recent change in bowel habits in the form of constipation and a 10 kg weight loss over the last 6 months. The patient is under treatment for ventricular tachycardia and no family history of colon cancer.

Objective examination: relatively good general condition, underweight, afebrile, pale teguments and mucous membranes, saburral tongue, normally conformed chest, bilateral symmetrical coastal excursions, pulmonary sonority present bilaterally, without added lung rales, blood pressure (BP) 140/80 mmHg. Abdomen slightly sensitive to palpation in the lower abdominal floor, more accentuated in the left flank and left iliac fossa. Intestinal transit was present, unpalpable liver and spleen, free renal lodges, no Giordano sign, spontaneous urination. The patient was oriented in time and space.

At the palpation of the abdomen, a tumour mass is detected in the lower abdominal floor, of hard consistency with dimensions of approximately 7/8 cm, imprecisely delimited, immobile compared to the underlying planes, slightly sensitive to palpation.

Following laboratory investigations, we find out that the patient is seronegative for the SARS-COV-2 virus, has a mild anemic syndrome and the test for occult hemorrhages was positive (Addler's reaction).

The colonoscopy was within normal limits up to a distance of 50 cm from the anal orifice, where the passage was hampered by the presence of a vegetative, ulcerated and stenotic tumour in the sigmoid colon. The patient has a wide sigmoid loop, being in accordance with the clinical examination that highlights the tumour formation that is palpated throughout the lower abdomen. Biopsies taken during colonoscopy showed the growth to be adenocarcinoma.

CT scan (chest, abdomen and pelvis) revealed a mass in the lower abdomen involving the medial sigmoid segment with diffuse thickening of the intestinal wall of 17 mm and iodine capture also the narrowing of the colon lumen for 8 cm with evidence of two liver lesions of 3.2/4 cm II-nd hepatic segment and one in the IV-th segment of 7 mm.

The case was presented to the oncology commission, which decided that the start of treatment should be with the surgical procedure.

After an adequate preoperative preparation, surgical

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intervention was performed in general anesthesia and endotracheal intubation, performing a exploratory laparotomy, through midline incision, which reveals a tumour that includes the sigmoid colon and the vermiform appendix, the sigmoid loop being found in the right iliac fossa, without ascites or peritoneal extension (figure no. 1)

Intraoperatively it is not possible to specify the appendicular or colic origin of the tumour, en bloc resection of the sigmoid colon is performed together with the vermiform appendix and radical lymphadenectomy (figure no. 2 and figure no. 3).

Figure no. 1. Sigmoid tumour invading the vermiform appendix (blue arrow)

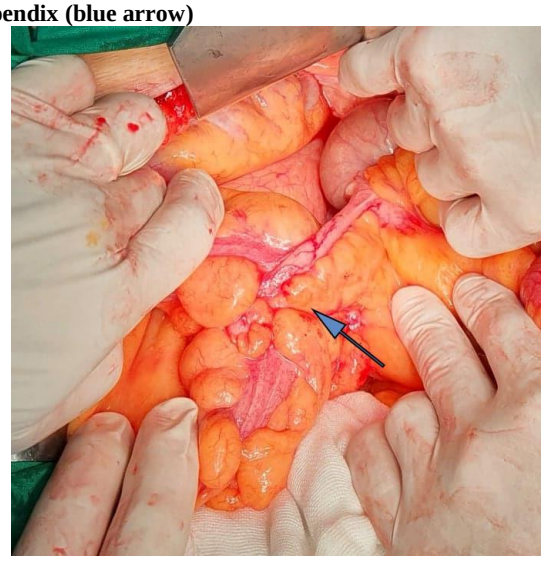


Figure no. 2. Performing appendectomy

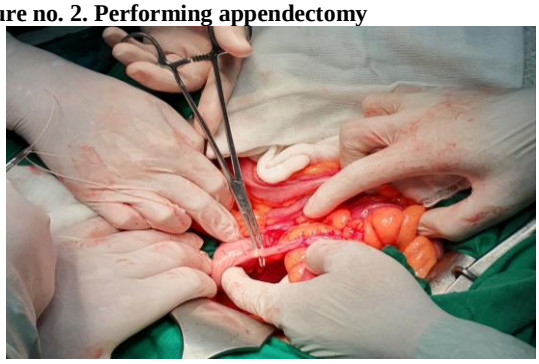
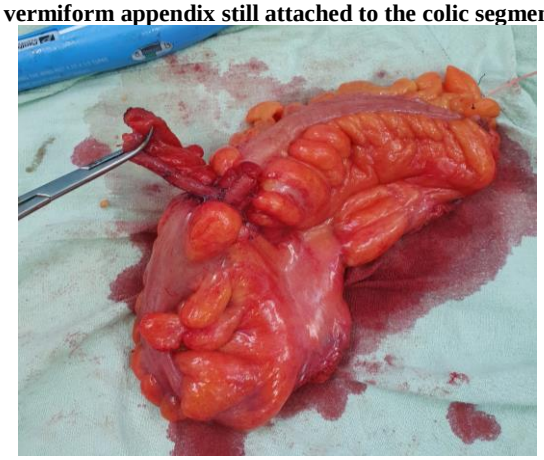


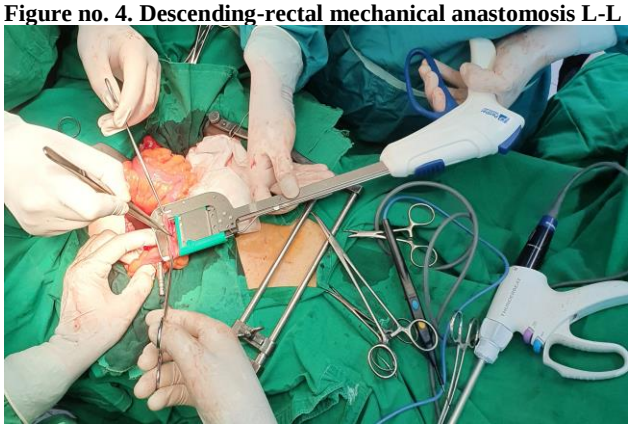
Figure no. 3. En bloc resection of the sigmoid tumour, note the vermiform appendix still attached to the colic segment



The intervention ends with the mechanical latero-lateral (L-L), recto-descending anastomosis (circular stapler was used), the descending colic end being closed with a linear stapler (figure no. 4).

Viscerolysis, washing, double drainage, parietoraphy in anatomical layers, sterile dressing was practiced.

Figure no. 4. Descending-rectal mechanical anastomosis L-L



The patient had favourable postoperative evolution, with good general condition, stable in terms of cardio-respiratory status and hemodynamically, afebrile, supple and mobile abdomen, painless spontaneously and on palpation, post-operative healed wound, without reaction, permeable drainage tubes with minimal drainage, reason for which on the 6th postoperative day they were supressed. Intestinal transit resumed for fecal matter and gas. The patient was discharged on the 7th day postoperatively.

Pathological examination showed the primary tumour in the sigmoid colon, with no involvement of the 13 lymph nodes or spread to the caecum. The tumour was confirmed to be moderately differentiated tubular adenocarcinoma. The circumferential margins of resection were free of tumour infiltration and no lymphovascular or perineural invasion was identified, so the tumour was staged as pT4aN0M0. Also, no neoplastic tissues were identified in the remaining resection discs after performing the mechanical circular anastomosis.

DISCUSSIONS

The current case represents a common presentation that is considered a red flag for suspecting colon cancer (recent change in bowel habits and bleeding per rectum) but the localisation of this tumour is unclear. However, the presence of malignant sigmoid tumour which invades the vermiform appendix was not often reported in the literature. The presence of a malignant formation at the level of the sigmoid with the invasion of the vermiform appendix is extremely rarely reported in the literature, unlike colo-vesical invasion(7), colo-uterine.(8)

Significant for this case was the suspicion of an appendicular tumour invading the sigmoid colon(9) or even an appendicular block enclosing the sigmoid colon.(10) The invasion of an appendicular carcinoma in the sigmoid colon is extremely rare.(11) According to the last edition of the AJCC manual (7th edition), the pathological staging of malignant tumor involving the appendix should be stage T4bN0M1a, stage IVa with a 40% survival rate at 1 year and 6% survival rate at 5 years.(12) Biopsy of liver metastatic secondary lesions is not recommended due to the increased risk of local dissemination.(13)

Chemotherapy has a palliative role in treatment of patients with metastatic colorectal cancer, and may prolong survival.(14) Fluorouracil has been the most commonly used agent over the past three decades. Modulation with agents such

as Leucovorin appears to increase response rates and may improve survival, with some increase in toxicity.(15)

Synchronous carcinomas are not uncommon, and in recent reviews the incidence was found to range from 2% to 8% in colon carcinoma patients. In view of this, it behooves the treating surgeon to evaluate the entire colon, if possible, to determine the presence of other neoplastic lesions.(16)

Screening colonoscopy and CT should be performed for proper diagnosis and staging. In this case we raised the issue of the existence of synchronous appendicular and sigmoid carcinoma, but the diagnosis was made by histopathological examination that confirmed the primary tumour to originate in the sigmoid. Carcinomas of the colon and rectum will sometimes invade adjacent organs or the abdominal wall. When this happens, it has been shown that extensive resection of the cancer along with the organ it has infiltrated, can increase survival to 5 years by more than 50%, if the limits of resection are free.(17)

Patients with inflammatory adhesions to contiguous organs have a slightly higher survival rate than patients with malignant infiltration, but the distinction between malignant and inflammatory contiguity often cannot be made until after en bloc resection. The organs that are usually involved with adhesions from colon or rectal cancer include the uterus, small bowel, urinary bladder, and abdominal wall. In general, approximately 5% of patients will present with locally advanced lesions.(18)

CONCLUSIONS

In our case the invasion of the vermiform appendix by the sigmoid mass opened the possibility of a primary tumour originating in appendix.(9)

The surgical treatment must take in consideration the primary tumour location (e.g., appendix or sigmoid) in order to choose the best procedure and to maintain the resection margins standard for radical treatment.(19)

Histopathological examination was instrumental in the choice of the surgical treatment. The multivisceral resection offers greater survival advantage in patients with locally advanced colorectal cancer then single organ resection.(20)

In our patient, the lack of extensive cecal involvement and the biopsy exam taken during the colonoscopy indicated the course of action to be appendicectomy (with no colectomy) with the segmental resection of the sigmoid colon with primary latero-terminal anastomoses. He has completed postoperative adjuvant chemotherapy and is constantly monitored.

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