

Complete mesocolic excision with pancreatoduodenectomy for colon tumor

Escisión mesocólica completa con duodenopancreatectomía por tumor de colon

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ABSTRACT

Colorectal cancer in patients under 50 often presents with aggressive, advanced stages. Local invasion into adjacent organs poses a high-complexity surgical challenge. We report the case of a 34-year-old woman with multifocal cancer and invasion of the ascending colon into the duodenum and renal capsule. A radical approach was performed via subtotal colectomy, complete mesocolic excision, pancreatoduodenectomy, and extended D3 lymphadenectomy.

Keywords: Colonic neoplasms, Surgical Oncology, pancreatoduodenectomy.

RESUMEN

El cáncer colorrectal en menores de 50 años suele presentarse de forma agresiva y avanzada. La invasión local a órganos adyacentes representa un desafío quirúrgico de alta complejidad. Presentamos el caso de una mujer de 34 años con cáncer multifocal e invasión de colon ascendente al duodeno y cápsula renal. Se realizó un abordaje radical mediante colectomía subtotal, escisión mesocólica completa, duodenopancreatectomía cefálica y vaciamiento ganglionar D3 extendido.

Palabras claves: Neoplasias del colon, Oncología quirúrgica, duodenopancreatectomía.

INTRODUCTION

It represents a phenomenon of low epidemiological incidence but with significant clinical impact, often associated with an aggressive and advanced presentation at the time of diagnosis⁽¹⁾. Local invasion is a negative prognostic factor and poses a highly complex surgical challenge, with en bloc multivisceral resection often being the only approach that ensures an oncological margin free of disease^(2,3).

CLINICAL CASE

34 year old woman, teacher, consulted for a clinical picture of 1 month of evolution of epigastric pain, colicky in nature, of mild

to moderate intensity, relieved using analgesics, accompanied by a 15 kilogram weight loss. Nausea and vomiting were added to the presentation, prompting her to seek medical care. The patient was asthmatic, treated with salbutamol as needed during crises. As surgical history, she had undergone two cesarean sections, and regarding family oncological history, her mother had rectal cancer, and her maternal grandmother had pancreatic cancer.

On admission, the patient presented with a fair general condition, with evident weight loss. Physical examination revealed a soft, depressible abdomen, painful predominantly in the epigastrium, with a poorly defined palpable mass in the right upper hemiabdomen, without guarding or signs of peritoneal irritation. No clinical jaundice was observed. Laboratory tests showed mild neutrophilia and elevated CRP with a value of 69. Hepatic, renal, and protein profiles were within normal range.

An abdominal ultrasound was performed at admission, which revealed a solid formation in the head of the pancreas, poorly defined, hypoechoic, heterogeneous, and vascularized (115 × 53 × 90 mm), along with delineated bile ducts (common bile duct measuring 12 mm in diameter).

Due to these findings, a contrast enhanced CT scan was performed, which revealed a heterogeneous infiltrating tumor, centered between the second portion of the duodenum and the hepatic flexure of the colon, with dimensions similar to those seen on ultrasound. It showed a heterogeneous enhancement pattern and protruded into the colonic lumen, with marked densification of the pericolic fat and the periduodenal region, associated with lymph nodes measuring 8 to 5 mm in the superior mesenteric station. Determination of the origin (duodenal or colonic) was impossible with this method due to the associated changes and the large extent. Patency with a cleavage plane was observed between the tumor mass and the mesenteric vessels as well as the inferior vena cava. (Fig. 1)

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Figure 1. CT Arterial Phase: AO: Aorta, AMS: Superior mesenteric artery, CP: Pancreatic head, VMS: Superior mesenteric vein, *: Injury compressing the second portion of the duodenum.

A contrast enhanced magnetic resonance imaging study was performed, which confirmed the mass involving the second portion of the duodenum and the hepatic flexure of the colon, suggesting endophytic growth in both structures. It exerted a mass effect on the head of the pancreas and consequently compressed the intrapancreatic segment of the common bile duct. Within the mass, areas hyperintense on T2, diffusion restriction, and enhancement after intravenous contrast administration were identified, characterizing it as a mucinous type tumor, primary of the colon, with extension into pericolic fat and fistulization toward the second portion of the duodenum (Fig. 2), with possible thrombosis of the ileocecal venous branch, and no hepatic metastases.

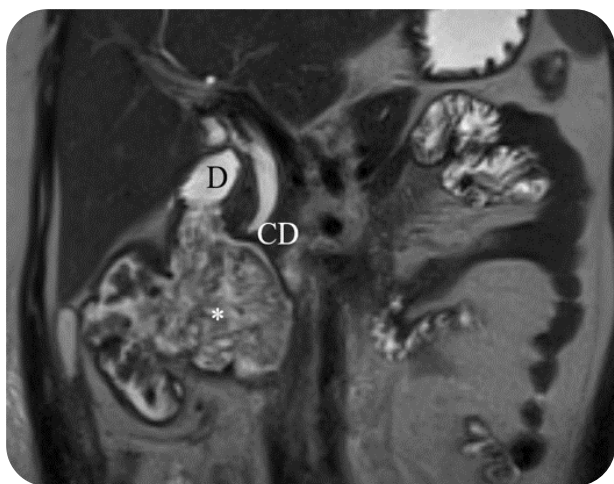


Figure 2. MRI: CD: Distal common bile duct, D: Duodenum, *: Injury in the hepatic flexure of the colon.

An upper digestive endoscopy was performed, revealing in the duodenum, in its second portion, an exophytic tumoral lesion with irregular surface and multiple ulcerated areas, occupying the entire lumen and preventing the passage of the endoscope.

A colonoscopy was performed, where three lesions with neoplastic appearance were observed: one with Kudo V pattern in the proximal transverse colon; another with Kudo IV pattern in the distal transverse colon; and a third with Kudo IV pattern in the descending colon.

An exploratory laparotomy was performed, revealing a tumor in the ascending colon infiltrating the duodenum, with no cleavage plane between them, also infiltrating the right renal capsule; and an ulcerated lesion in the descending colon. A cephalic duodenopancreatectomy with subtotal colectomy en bloc was carried out, including the right renal capsule (Fig. 3), with D3 lymph node dissection and inclusion of the cavo aortic lymph node chain (Fig. 4). Reconstruction was performed with a single loop: end to side pancreatojejunostomy, end to side hepaticojejunostomy, side to side gastrojejunostomy, and end to side ileosigmoid anastomosis.

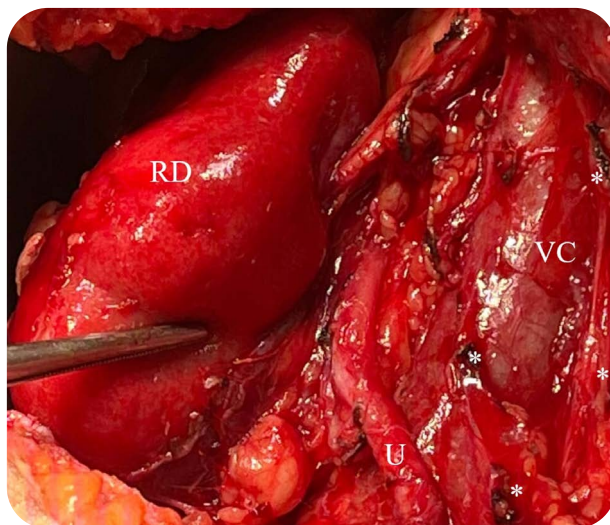


Figure 3. Intraoperative: RD: Decapsulated right kidney, U: Right ureter, VC: Vena cava, *: Lymph node dissection margins.



Figure 4. Surgical specimen: CP: Pancreatic head, D2: Second portion of the duodenum, D4: Fourth portion of the duodenum, EP: Greater omentum, IT: Terminal ileum, VB: Gallbladder, *: Injury in the ascending colon, **: Injury in the descending colon.

The operative time was 420 minutes, blood loss was less than 500 cc, no transfusions were required during the operative period, and the patient was extubated at the end of the surgery.

The immediate postoperative period was marked by a grade B pancreatic fistula according to ISGPF (International Study Group on Pancreatic Fistula) ⁽⁴⁾ and a grade 2 evisceration that

required relaparotomy.

The total postoperative hospital stay was 36 days, of which 11 were spent in the intensive care unit, prolonged due to late onset nosocomial pneumonia and a surgical site infection. Renal replacement therapy was not required.

The pathology report revealed an invasive mucinous adenocarcinoma in the ascending colon tumor and a conventional invasive adenocarcinoma in the splenic flexure tumor, moderately differentiated (grade 2), with lymphovascular invasion present. Metastatic adenocarcinoma was identified in 2 of 32 lymph nodes, and all surgical margins were free of invasive carcinoma. TNM classification: pT(m)4b, pN1b.

Additionally, two tubular adenomas were identified: one in the cecum with high grade dysplasia and another in the transverse colon with low grade dysplasia. Colonic diverticular disease was also reported.

The 90 day Comprehensive Complication Index (CCI) was 58.2⁽⁵⁾, and the patient is currently undergoing immunohistochemical studies to determine microsatellite instability for adjuvant treatment planning.

DISCUSSION

Colorectal cancer in young patients, particularly when presenting with local invasion, represents a high risk oncological group. Although right sided colon tumors are generally considered less locally invasive, authors such as Gosavi et al. have reported macroscopic invasion into adjacent organs and tissues in 11–

20% of cases⁽³⁾. The case presented underscores the importance of an aggressive and highly specialized surgical approach to achieve disease control in advanced scenarios.

Despite the complexity of the proposed treatment, a complete oncological resection was achieved, which is the most important predictor of long term survival and justifies the inherent risks of surgery.^(2,3,7)

The final pathological staging TNM confirms pT(m)4b, pN1b, highlighting the aggressiveness of the tumor and its high risk of systemic recurrence. It is essential to recognize that the price of oncological radicality is high morbidity; in this case manifested as a grade B pancreatic fistula, nosocomial pneumonia, surgical site infection, and evisceration, which elevated the Comprehensive Complication Index (CCI) to 58.2. This figure is consistent with the substantial morbidity burden documented by Lim SW et al. in complex multivisceral resections.^(3,5,6)

Given the aggressive presentation at a young age, the family oncological history, and the intraoperative findings, it is imperative to determine whether microsatellite instability (MSI) is present through immunohistochemical studies. These features are compatible with Lynch syndrome, which carries significant clinical implications when selecting the adjuvant chemotherapy regimen and anticipating treatment response.⁽⁷⁾

CONFLICT OF INTERESTS

Authors declare no conflict of interests.

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