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Case Report

Total colectomy: indications and outcomes in colorectal pathology

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ABSTRACT

Colorectal cancer remains one of the leading causes of cancer-related morbidity and mortality worldwide. The presence of synchronous tumors poses a significant challenge in surgical management, often requiring more extensive resections to achieve adequate oncological control. Total colectomy is considered a viable option in selected patients with multifocal or extensive colonic disease, as it allows complete removal of the affected organ and reduces the risk of metachronous lesions. We present the case of a 62-year-old female patient with no significant family history, who presented with weight loss, anemia, and changes in bowel habits. Colonoscopy revealed two synchronous lesions located in the ascending colon and sigmoid colon. Histopathological analysis confirmed moderately differentiated mucinous adenocarcinoma in both sites. Imaging studies showed no evidence of distant metastasis. The patient underwent total colectomy with ileorectal anastomosis. The postoperative course was uneventful, with adequate recovery and no evidence of complications. Final pathology reported tumors staged as T3N0M0 and T2N0M0, with negative surgical margins and no lymph node involvement. At follow-up, the patient demonstrated good clinical evolution and satisfactory functional outcomes. This case highlights the importance of recognizing synchronous colorectal cancer and selecting an appropriate surgical strategy. Total colectomy provides an effective oncological approach in such cases, offering complete disease control and reducing the likelihood of future colonic malignancies.

Keywords: Colorectal cancer, Total colectomy, Synchronous tumours, Mucinous adenocarcinoma, Ileorectal anastomosis, Surgical management, Oncologic surgery, Colon cancer, Multifocal disease

INTRODUCTION

Surgical resection remains the cornerstone in the treatment of colorectal cancer, particularly in cases involving extensive colonic disease or the presence of synchronous lesions that limit the feasibility of segmental resection. Total colectomy is considered a surgical alternative in selected scenarios, allowing adequate oncological control by removing the entire colon, reducing recurrence risk, and providing comprehensive management of diffuse disease.[1]

Among the most relevant indications for total colectomy in oncologic pathology are familial adenomatous polyposis, hereditary nonpolyposis colorectal cancer (Lynch syndrome), and the presence of synchronous or multifocal neoplasms. Likewise, in patients with extensive disease or high risk of developing new malignant lesions, this technique may offer both therapeutic and prophylactic benefits.[2,3]

Mucinous adenocarcinoma of the colon represents a less common histological subtype, characterized by more aggressive biological behavior, greater tendency for dissemination, and diagnosis at more advanced stages. Its surgical management is often more challenging, particularly when it presents as multifocal disease or involves multiple colonic segments.[3]

In this context, the aim of this study is to describe the case of a patient diagnosed with synchronous mucinous adenocarcinoma of the ascending and sigmoid colon, in whom total colectomy was performed as definitive treatment. Clinical findings, imaging studies, surgical technique, and postoperative evolution are analyzed in order to highlight the importance of appropriate surgical procedure selection in patients with extensive oncologic colonic disease.[4]

CASE REPORT

We present the case of a 62-year-old female patient with no known family history of colorectal cancer and a personal history of controlled hypertension, who presented with a three-month history of unintentional weight loss of approximately 8 kg, asthenia, hyporexia, and changes in bowel habits, alternating between diarrhea and constipation, along with occasional rectal bleeding. Physical examination revealed mucocutaneous pallor, a soft and depressible abdomen with mild tenderness in both right and left hemiabdomen, and no signs of peritoneal irritation. Digital rectal examination did not reveal palpable lesions, but occult blood was present. Laboratory studies showed microcytic hypochromic anemia (Hb 9.2 g/dl).

Colonoscopy identified an ulcerated vegetating lesion in the ascending colon causing partial stenosis, as well as a second synchronous infiltrative lesion in the sigmoid colon. Biopsies were obtained from both sites. Histopathological analysis reported moderately differentiated mucinous adenocarcinoma in both locations.

Contrast-enhanced computed tomography of the abdomen and pelvis showed thickening of the colonic wall in the ascending and sigmoid colon, with no evidence of liver metastases or distant disease. No regional lymph nodes greater than 1 cm were identified.

Given the diagnosis of synchronous colorectal cancer, surgical management with total colectomy and ileorectal anastomosis was performed. Under general anesthesia, a laparotomic approach was used. Both lesions were identified without evidence of peritoneal carcinomatosis. Complete mobilization of the colon was performed, with central vascular ligation of the ileocolic, right colic, middle colic, and inferior mesenteric artery branches. En bloc resection from the cecum to the rectosigmoid junction was carried out, preserving the upper rectum. A hand-sewn end-to-end ileorectal anastomosis was performed in two layers. The procedure was completed without intraoperative complications. The patient had a favorable postoperative course, initiating progressive oral intake on postoperative day three with good tolerance and adequate bowel function. No evidence of anastomotic leak, infection, or prolonged ileus was observed. The patient was discharged on postoperative day seven.

Figure 1: Total colectomy.

Final pathology confirmed synchronous mucinous adenocarcinoma in the ascending colon (T3N0M0) and sigmoid colon (T2N0M0), with negative margins and no lymph node involvement (0/18 nodes). At one-month follow-up, the patient showed good clinical evolution, adequate bowel function, and no signs of early recurrence.

This case illustrates the importance of considering total colectomy as a therapeutic option in patients with synchronous colonic neoplasms, allowing adequate oncological control and reducing the risk of residual or future disease in the remaining colon.

DISCUSSION

Synchronous colorectal cancer represents a diagnostic and therapeutic challenge, defined as the presence of two or more primary tumors simultaneously in different segments of the colon. Its incidence ranges from 2% to 8% of all

colorectal cancers, and its identification is crucial, as it significantly modifies the surgical strategy. In this context, total colectomy emerges as an appropriate therapeutic option in selected patients, allowing broader oncological control and reducing the risk of metachronous lesions.[5,6]

Table 1: Segmental colectomy vs total colectomy.

Characteristic	Segmental colectomy	Total colectomy
Extent of resection	Limited	Complete
Colon preservation	High	None
Recurrence risk	Higher	Lower
Bowel function	Better	Altered (more frequent stools)
Main indication	Single tumor	Synchronous tumors / diffuse disease
Surgical complexity	Moderate	High

In the present case, the presence of synchronous mucinous adenocarcinoma in the ascending and sigmoid colon justified total colectomy. This histological subtype has been associated with more aggressive biological behavior, increased mucin production, and a tendency toward diagnosis at more advanced stages, reinforcing the need for a more radical surgical approach in multifocal scenarios.[7]

Table 2: Indications for total colectomy in colorectal cancer.

Indication	Justification
Synchronous tumors	Complete resection of multiple lesions
Familial adenomatous polyposis	Cancer prevention
Lynch syndrome	High risk of metachronous lesions
Diffuse colonic disease	Extensive colon involvement
Multifocal tumors	Difficult segmental management
Recurrence in remaining colon	Avoid additional surgeries

Several studies have compared segmental colectomy versus total colectomy in patients with extensive or synchronous colonic disease. While segmental resection may preserve bowel length and potentially improve postoperative function, it has been associated with a higher risk of recurrence in the remaining colon. In contrast, total colectomy offers the advantage of completely removing colonic tissue at risk of developing new neoplastic lesions.[8] From a technical standpoint, total colectomy with ileorectal anastomosis is a safe option in patients without rectal involvement, as in the present case. This approach allows preservation of the rectum and maintenance of acceptable bowel function, although with increased stool frequency, particularly in the early postoperative period.[9]

Regarding postoperative outcomes, total colectomy has been shown to be a safe procedure when performed in specialized centers, with acceptable morbidity and mortality rates. However, functional implications must be considered, as patients may experience increased bowel frequency, fecal urgency, and, in some cases, reduced quality of life.[10,11]

Table 3: Advantages and disadvantages of total colectomy.

Aspect	Advantages	Disadvantages
Oncologic	Complete colon resection	—
Prevention	Reduces risk of new tumors	—
Follow-up	Less need for colon surveillance	—
Bowel function	—	Increased stool frequency
Quality of life	—	Possible initial impact
Complexity	—	More extensive surgery

Current literature emphasizes the importance of individualizing surgical treatment, considering tumor location, presence of multiple lesions, patient age, functional status, and genetic background. In patients with synchronous tumors, as in this case, total colectomy provides a comprehensive solution that reduces the likelihood of future reinterventions.[12,13]

CONCLUSION

Finally, this case underscores the importance of thorough preoperative evaluation with complete colonoscopy and imaging studies, as identification of synchronous lesions can significantly alter surgical management and improve long-term oncological outcomes. Total colectomy represents an effective and safe surgical option in the management of synchronous colorectal cancer, particularly in cases of multifocal or extensive disease where segmental resection is insufficient. This approach allows adequate oncological control by removing the entire colon at risk of harboring neoplastic lesions, thereby reducing recurrence and metachronous tumor development.

The present case demonstrates that, in carefully selected patients, total colectomy with ileorectal anastomosis can provide favorable oncological and functional outcomes, with adequate postoperative evolution and high patient satisfaction. Furthermore, comprehensive preoperative

evaluation is essential to identify synchronous lesions, as this directly impacts surgical decision-making. Individualized treatment, considering clinical, anatomical, and oncological factors, remains key to optimizing outcomes. In conclusion, total colectomy should be considered within the surgeon's therapeutic armamentarium for the treatment of advanced or multifocal colorectal cancer, enabling safe, comprehensive management with long-term benefits in disease control.

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