



Colonoscopy in right colon cancer screening: A case report

Colonoscopia no rastreio de câncer de cólon direito: Um relato de caso

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ABSTRACT

Introduction: Colorectal cancer is the third most frequent type of cancer in the world in both sexes, starting in the large intestine and extending to the lower part of the digestive system. The most important risk factor is a family history of colon and rectal cancer and a genetic predisposition to the development of chronic bowel disease, as well as a diet based on animal fats, as well as excessive alcohol consumption and smoking. Only 90% of polyps are easily found through colonoscopy, so the importance of screening through colonoscopy is evident, especially in patients aged 50 years or older. When identified early, it is a pathology that has a good prognosis. **Objective:** To demonstrate the importance of colonoscopy as a screening test for a better prognosis of colon cancer. **Methods:** Based on a medical case that occurred at the Santa Casa da Misericórdia de Presidente Prudente, and its medical records, information was collected for this report. **Results:** Surgical treatment remains the best option. For tumors of the cecum and ascending colon, right colectomy and resection of a small segment of the distal ileum and right hemicolectomy are recommended. This approach is advantageous for patients with compromised lymph nodes, but its effectiveness seems doubtful for T3 or T4 node-negative patients. **Conclusion:** The successful treatment of colon cancer is a multidisciplinary effort, and surgical resection is the most indicated, in combination with adjuvant chemotherapy in certain cases, and early diagnosis of patients is important for a better prognosis.

Keywords: Colon cancer, Colonoscopy, Diagnosis, Colorectal neoplasia.

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INTRODUCTION

Colorectal cancer (CRC) is the third most frequent type of cancer in the world in both sexes and the second cause in developed countries, starting in the large intestine and extending to the lower part of the digestive system (ESMEETA et al. 2022). It has a 5-year survival rate in 63% of cases, reducing to 10% in those diagnosed with metastases. This type of neoplasm encompasses tumors that affect the colon and rectum (DENIPOTE et al. 2010). In addition, both men and women are equally affected, being a treatable and often curable disease, when only located in the intestine (INCA, 2019).

The most important risk factor for this type of neoplasm is a family history of colon and rectal cancer and a genetic predisposition to the development of chronic bowel diseases (such as adenomatous polyposis), as well as a diet based on animal fats, low intake of fruits, vegetables and cereals, as well as excessive alcohol consumption and smoking. Regular physical activity is associated with a low risk of developing cancer. (DENIPOTE et al. 2010) Age is also considered a risk factor, as people over 50 years of age are more likely to be affected by colorectal neoplasia and people under 50 years of age have a 4% chance (ESMEETA et al. 2022).

The likelihood of developing CRC may be increased by genetic and acquired/environmental factors. (HADJIPETROU et al. 2017) Although the majority (about 70%) of CRC occurs in medium-risk (sporadic) individuals, up to 25% of cases occur in patients with a family history of CRC, and about 10% of cases occur in hereditary colorectal cancer syndromes (mainly Familial Adenomatous Polyposis, Lynch syndrome, and inflammatory bowel disease) (AHMED, 2020) The risk factors implicated in the mechanisms of sporadic diseases are mainly environmental/acquired. Western lifestyle, smoking, alcohol consumption, obesity, and certain dietary habits are among the risk factors associated with increased risk of CRC. Although the impact of genetic susceptibility on an individual is much greater than the impact of acquired factors, the vast majority of CRC cases could be prevented through modifications in environmental factors. Studies have shown that individuals with first-degree relatives diagnosed with CRC have a 2-3 times higher risk of developing CRC than the general population. (HADJIPETROU et al. 2017)

The mass formation of a neoplasm develops when healthy cells in the lining of the colon or rectum grow out of control. CRC usually begins with the growth of tissue in the mucous membrane, known as a polyp (noncancerous growth that can develop in the colon or inner wall of the rectum as people age). Adenomatous polyps are the growth of tissue with a high potential for malignant transformation. (ESMEETA et al. 2022) As they grow, they penetrate the



submucosa, invade the lymphatics, and gain access to lymph nodes and surrounding tissues, as well as distant organs. Colon carcinoma can spread through the portal vein to the liver; hematogenous to the lungs and bones; and through the intestine to the pericolonic fat and mesentery, invading the adjacent organs. (BARILE et al. 2020)

Symptoms vary according to the anatomical location of the neoplasm. In the case of left colon tumors (descending, sigmoid), there is a predominance of changes in bowel habits (progressive constipation, or constipation alternating with hyperdefecation or diarrhea). These symptoms come from the fact that the left colon is smaller in caliber and contains semi-solid stools instead of liquid. In cancer of the right colon (ascending, cecum), the lesions usually ulcerate, with a predominance of occult blood loss in the feces and iron deficiency anemia. These tumors are highly bleeding but rarely cause obstruction of fecal flow, due to the larger caliber of the colon and because they contain liquid feces. They can grow quite large before they cause obstructive symptoms and other changes in bowel habits. They are usually larger tumors and more invasive to diagnose. (BARILE et al. 2020)

Few screening tools have been established to detect CRC in its early stages, such as colonoscopy, sigmoidoscopy, fecal occult blood test, and fecal immunohistochemical testing. Colonoscopy is the procedure used to detect abnormalities in the large intestine and is one of the few screening tools that have already been established for detecting CRC in its early stages. During a colonoscopy, polyps are easily found in the colon as it has a bulge-like structure. Only 90% of polyps are found easily through colonoscopy, and the remaining 10% of polyps differ in their formation. (ESMEETA et al. 2022) Therefore, the importance of screening through colonoscopy is evident, especially in patients aged 50 years or older.

Among the variables that determine the prognosis of patients diagnosed with colorectal cancer are the level of depth of tumor invasion in the intestinal wall, regional lymph node involvement, and distant metastases. When identified early, it is a pathology that has a good prognosis, and surgery is its primary treatment, which can be considered with curative intent, when it promotes the complete removal of the primary tumor with safety margins in addition to the resection of regional lymph nodes, mesocolon and vascular supply. Even in the case of distant metastases, the tumor should be resected, whenever possible, to avoid future complications (obstruction, perforation, and hemorrhage). Newly staged RCC according to the classification of tumor, lymph node, and metastases (TNM) by the mural depth of the primary tumor (T), the presence of local lymph node metastases (N), and the presence of distant



metastases (M). In the TNM classification, invasive colon cancer is classified from stage I to IV (BARILE et al. 2020)

Where the tumor occurs in the intestine has implications for treatment. That is, colon cancer and rectal cancer are two distinct cancers that require different approaches, also depending on their stage. Surgery is the main curative treatment for patients with RCC without metastasis. In more advanced cases of rectal cancer, neoadjuvant treatment (e.g., preoperative chemotherapy for T4 colon cancer and (chemo)radiotherapy for locally advanced cancer) may reduce tumor burden and even tumor stage, and may be necessary to optimize the chances of a successful resection. In those with obstructive colorectal disease, abdominal CT scan can also assess for the presence of T4 or stage IV disease. In patients with rectal cancer, preoperative MRI of the pelvis is still recommended for planning purposes, as well as to distinguish the tumor from the mesorectal fascia and to evaluate for stage T. This information is necessary to select patients with T3c tumors, T3d and T4 for preoperative (chemo)radiotherapy. There is no accepted neoadjuvant (i.e., before surgery) treatment for colon cancer. However, for rectal cancer, neoadjuvant radiation therapy or chemoradiation therapy are recommended for intermediate and advanced stage cancer to reduce the rate of local recurrence. (KUIPERS et al. 2015)

Treatment of CRC may include laparoscopic surgery, radiation therapy, immunotherapy, targeted therapy, and palliative chemotherapy. Most cases come from patients over the age of 50 or 60 at the time of diagnosis. (ESMEETA et al. 2022). A loop ileostomy or loop colostomy, or permanent colostomies, are an essential part of surgery for rectal and sigmoid cancer, either to protect the anastomosis or when the distal rectum is resected. In cases of rectal obstruction, a loop colostomy is placed on the right (ascending) side. In patients who present with (sub)total obstruction due to a left-sided (descending) tumor, preoperative temporary stenting may be considered to reduce perioperative morbidity and risks of surgery, but the risk of perforation should be considered. For early-stage rectal cancer, transanal endoscopic microsurgery (TEM) is a minimally invasive technique for local tumor excision of well-differentiated T1N0 tumors. TEM is not recommended for tumours that are unlikely to be completely resected, as well as for poorly differentiated tumours, given their high risk of local recurrence. Total mesorectal excision (TME) is the gold standard surgical technique for rectal tumors staged at favorable T1, T2, and T3. In patients with unfavorable rectal tumors, TME surgery is only recommended after neoadjuvant therapy to reduce the risk of local recurrences. (KUIPERS et al. 2015)



The cure rate by surgery alone for T3, T4a, T4b, and N0M0 (Union for International Cancer Control (UICC) stage II) colon cancers is high, and only approximately 5% of patients benefit from adjuvant chemotherapy. Adjuvant chemotherapy for locally invasive tumors is debatable. (KUIPERS et al. 2015) This approach is advantageous for patients with compromised lymph nodes, but its effectiveness seems doubtful for T3 or T4 node-negative patients. (COSTA et al. 2010) In addition to endoscopic surveillance after cancer resection, follow-up surveillance measuring plasma carcinoembryonic antigen (CEA) levels and/or CT imaging can detect curatively treatable metastatic recurrence (KUIPERS et al. 2015).

CASE DESCRIPTION

Patient A.R.M., female, 75 years old, obese, asymptomatic, with hypothyroidism and irritable bowel syndrome. The patient sought care for routine examinations. She denied medical follow-up or previous age-related screening tests. A colonist was performed, who showed an ulcerated lesion at the proximal end of the ascending colon. Soon after, she was referred to the tertiary hospital for hospitalization and laboratory and imaging tests to stage the lesion found. A preoperative Carcinoembryonic Antigen (CEA) test was performed, where a value of 4.6 ng/ml was shown. A computed tomography scan of the chest showed the presence of nodules with defined contours, small dimensions, most of them calcified, which may be related to granulomas. A computed tomography scan of the total abdomen was performed, where an irregularly shaped parietal thickening was observed in the cecum/ascending region, determining a reduction in lumen with contrast medium capture and pericolic lymph nodes, the largest measuring about 6 mm in diameter. A surgical approach was indicated for the patient, in which the cavity inventory showed the presence of a mass at a hepatic angle adhered to the right kidney and liver. We opted for right colectomy with a margin proximal to 12 cm of the ileocecal valve + retroperitoneal lymphadenectomy + omentectomy + ileo-colic laterolateral isoperistaltic anastomosis. The patient progressed well, received an oral diet on the fifth postoperative day, and was discharged on the seventh postoperative day with good general condition, good dietary acceptance, and walking without difficulties. The anatomopathological examination showed a poorly differentiated, ulcerated, polypoid mucosecretory adenocarcinoma with proximal, distal and radial margins free of neoplasms, absence of metastasis in 36 dissected lymph nodes (0/36), concluding staging according to TNM, in pT4 pN0. Surgical margins were free and there was no distant metastasis. The patient was referred to the oncology service for further evaluation of adjuvant treatment.



DISCUSSION

In the evaluation of personal and pathological antecedents, the factors that could be considered risk for the patient in relation to the presence of a CRC are the age of 75 years and the report of a family history with cancer. CRC is more common in the elderly, especially after the age of 60, as in the case of the patient in this study. From the age of 60, colonoscopy or barium enema should be performed every 10 years. (BALDIM et al. 2022)

CRC most often produces symptoms that are barely perceptible to patients until it is in an advanced stage, as reported in the case in which the patient was asymptomatic. (MALHEIROS et al. 2005) When detecting a malignant lesion in the large intestine, the optimal therapeutic approach is total resection of the tumor. However, prior to surgery, an investigation for the presence of metastatic disease should be performed, which includes a complete physical examination, laboratory examination of liver function, determination of plasma CEA levels (has prognostic value), and a CT scan of the chest, abdomen, and pelvis. The patient in question had an altered CEA level (4.6 ng/ml, RV non-smokers: 3.8 ng/ml). A total colonoscopy with visualization of the entire colon is indicated in order to find synchronous neoplasms and polyps (absent in this case). (BARILE et al. 2020)

Its diagnosis is established by the histopathological examination of a tumor specimen obtained through colonoscopy or surgical specimen examination, and its treatment is surgical,



chemotherapy or radiotherapy according to the staging of the disease (GIRARDON et al. 2022). In this case, the treatment was surgical and we opted for right colectomy + retroperitoneal lymphadenectomy + omentectomy + ileo-colic anastomosis and without the need for post-surgical adjuvant therapies. According to the literature, for cecum and ascending colon tumors, right colectomy is recommended, as was performed in the case described, and resection of a small segment of the distal ileum and right hemicolectomy. (BARILE et al. 2020).

In the reported case, the patient had a pT4 pN0 classification, which demonstrates a stage 4 tumor and the absence of metastases in 36 resected lymph nodes (0/36). The pathological stage is highly correlated with the prognosis of cancer and, for this reason, the surgical choice was made in this case. (CAPPELL, 2008)

Active distant metastases in the lungs and liver by chest and abdominal CT is recommended prior to surgery, as is CEA, to provide a baseline value for postoperative surveillance. (GIRARDON et al. 2022) According to the staging, the reported case did not present distant metastases. Patients with metastases have a determinantly shorter survival progression compared to those without peritoneal involvement. (FRANKO et al. 2012)

The earlier the disease is identified, the greater the chance of curing the disease, in addition to treatment and effective follow-up, thus evidencing the importance of preventive action in the population at risk. Therefore, there is a need for an individual evaluation in order to employ the best choice of oncological treatment, aiming at disease control and better prognosis. (AHMED, 2020)

METHODOLOGY

From a medical case that occurred at the Santa Casa da Misericórdia de Presidente Prudente, together with its medical record, information was collected to carry out this case report. In addition, a search for information in databases was conducted.

RESULTS

Surgical treatment remains the best option in cases of CRC, where when a malignant lesion in the large intestine is detected, the ideal therapeutic approach is total tumor resection. According to the literature, for cecum and ascending colon tumors, right colectomy and resection of a small segment of the distal ileum and right hemicolectomy are recommended. In one study, adjuvant chemotherapy for locally invasive tumors is debatable. This approach is advantageous



for patients with compromised lymph nodes, but its effectiveness seems doubtful for T3 or T4 node-negative patients.

CONCLUSION

It is concluded that the successful prognosis of colon cancer is defined by the stage at which it was detected. For this reason, colonoscopy is necessary, especially in people over 50 years of age, since it is the best method for the initial diagnosis of CRC, and it is important to perform it in the preoperative period for surgical planning. In addition, dietary habits and genetic predisposition are directly linked to the onset and worsening of the disease.



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