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COLONOSCOPIC TREATMENT FOR EARLY-STAGE RECTAL ADENOCARCINOMA

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ABSTRACT

Colorectal cancer is a malignant neoplasm that arises in the colon or rectum, characterized by the uncontrolled growth of epithelial cells, forming invasive tumors that can metastasize. It is the third most common neoplasm globally, with about 1.9 million new cases per year. In Brazil, in 2022, 5,573 deaths from rectal cancer were recorded, with a high incidence among women and a growing concern in younger age groups. Risk factors include type II diabetes mellitus, use of anti-inflammatory drugs, smoking, and obesity, which is related to chronic inflammation and hormonal changes that favor cancer. About 20% of patients with

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non-metastatic tumors can develop metastases, often affecting the gastrointestinal tract and organs such as the liver and lungs. The main treatment involves surgery and, in some cases, radiation therapy. The recommended screening for people over 50 years old includes colonoscopy, with recent suggestions to start screening five years earlier, due to the overall increase in the incidence of these pathologies.

Keywords: Colorectal Cancer. Tracking. Surgery. Treatment.

INTRODUCTION

Colorectal cancer is a malignant neoplasm that arises in the colon or rectum, marked by the disordered growth of epithelial cells, forming invasive tumors with the potential to spread to other organs. Several pathophysiological mechanisms are involved in this process, including anomalous cell proliferation, resistance to apoptosis, invasion of nearby structures, and metastasis to distant sites1.

Colorectal cancer is widely recognized as the third most frequent cancer in the world in terms of new cases, with adenoma being the predominant subtype and responsible for the second highest mortality rate among cancer types. Globally, about 1.9 million new cases are diagnosed per year2,4. In Brazil, in 2022 alone, 13,921 deaths attributed to primary colon cancer were recorded, with 51% of cases affecting women, and 5,573 deaths from rectal cancer, the latter being in the 50-69 age group predominant3. In the last 10 years, an increase in the disease has been observed in younger populations, reinforcing its relevance as a growing public health concern6.

Colon and rectal cancer has been associated with several risk factors, such as type II diabetes mellitus, the use of non-steroidal anti-inflammatory drugs, smoking, prolonged alcohol consumption, and the use of acetylsalicylic acid. Although few studies directly address the risk factors for the development of metachronic tumors, it is known that the presence of synchronous lesions significantly increases the probability of metachronous tumors2,6. Although age is considered a relevant factor, the data are still inconclusive regarding metachronicity. Regarding the appearance of adenomas, factors such as age, male gender, and obesity play an important role. Obesity, in turn, is strongly related to the increased risk of colorectal cancer due to several reasons. Excess body fat can induce chronic low-grade inflammation, favoring cellular changes that can develop into cancer. In addition, obesity alters hormone levels, such as insulin and estrogen, which are implicated in the development of cancer. Estrogen, in particular, can influence the proliferation of epithelial cells in the gut. Obesity is also often related to poor eating habits and low physical activity, both of which contribute to the risk of colorectal cancer. In patients who have already been diagnosed, excess weight can worsen the prognosis, increasing the mortality rate and reducing survival8,9.

About 20% of patients with non-metastatic colorectal tumors will develop metachronous metastases, with the most frequent sites in the gastrointestinal tract itself, such as the sigmoid, ascending, transverse, and descending colon. In addition, distant metastases can occur in organs such as the liver, lung, peritoneum, and regional lymph nodes. Post-treatment follow-up with surveillance colonoscopy is critical to monitor these

patients. In terms of treatment, the main options include surgery to resect the affected intestinal segment and, in some cases, radiotherapy5,6,7.

Most colorectal tumors arise from polyps that develop in the normal mucosa of the gastrointestinal tract that progress to adenocarcinomas, mostly as invasion of structures. Failures in the mechanism of tumor suppression and chromosomal instability associated with epigenetic and genetic mechanisms may be the origin of this pathophysiology. A recent German study suggested that screening colonoscopy for patients over the age of 50 estimated a prevalence of adenomas (precursor polyps) in almost 26% of cases, as the pathology in question involves latency and asymptomatic phases. Several forms of screening can be used and the North American criterion involves, in addition to colonoscopy (test with sensitivity for polyps > 0.9 cm of 95%), fecal occult blood test, fecal immunochemical test, sigmoidoscopy and colonography by computed tomography10.

Regarding the age for screening, studies worldwide have shown that the diagnosis of colorectal tumors increased its incidence considerably in the age group before 50 years, recommending an earlier onset of 5 years in relation to older recommendations10. Brazil follows the global screening and the recommendations of the World Health Organization (WHO) for screening colorectal cancers. According to the National Cancer Institute (INCA), screening for medium-risk patients (50 years or older with no family history of colorectal cancer) should be performed with colonoscopy annually in the age group of 50 to 75 years, and the other tests recommended according to the North American regulations mentioned above can also be used[11].

In terms of rectal neoplasia, neoadjuvant chemoradiotherapy, total excision of the mesorectum, and adjuvant chemotherapy are options for locally advanced adenocarcinomas. Follow-up of the patient may result in tumor regrowth and a metachronous diagnosis. An attempt to preserve the organ can be successful regardless of the dose of radiation or chemotherapy used, but the time interval between treatment sessions can significantly impact tumor reappearance12. Based on this information, we can extend the understanding that serial follow-up with erroneous and/or excessively long intervals may be a completely unfavorable prognostic factor in the therapeutic management of a patient diagnosed with rectal adenocarcinoma in early stages. Observing the scientific gap in what would be the best planning for such patients, this report aims to elucidate, based on recent literature, the best decision for the case in which the screening is successful, but the subsequent decision is shown to be a considerable unknown.

METHODOLOGY

This is a case report study, whose information was collected through a review of medical records. In parallel, to support the ideas discussed in this article, a literature review was carried out in scientific databases such as PubMed. The production of this scientific article followed the regulations proposed by the National Research Council (CONEP).

CASE REPORT

A 59-year-old asymptomatic male patient attended a routine consultation and underwent annual screening colonoscopy. Several polyps of varying sizes and one lesion suggestive of adenocarcinoma in the rectum were found. The patient underwent polypectomy associated with mucosectomy. The anatomopathological examination showed a transverse colon polyp characterized as a low-grade tubular adenoma with mild cytoarchitectural dysplasia; descending colon polyp in the same characteristics; sigmoid colon polyp of moderate cytoarchitectural dysplasia. The rectal polyp showed tubulovillous adenoma with transformation to well-differentiated, infiltrative adenocarcinoma, with the presence of mucosal ulceration. The neoplasm infiltrates the lamina propria and muscular layer of the mucosa, without angiolymphatic infiltration. The anatomopathological staging showed Pt1. The surgical team discussed whether to complement it with transanal resection or serial follow-up of the patient.

DISCUSSION

The most recent studies have indicated that colorectal cancer is affecting younger populations2,4,6. The reasons why this fact is becoming relevant are not yet very well clarified, but there have been significant changes regarding the most recent protocols for the management of patients in relation to this pathology. Epidemiological, modeling, and observational studies suggest that the age for screening should be advanced by 5 years, starting at 4512. The tests remain the same, but it is worth noting that the recurrence rate of this tumor is 54% even with adequate management13, so it is extremely important that health systems adapt to this new reality.

As he was a patient from the private wing of the health system, more expensive screenings were possible to be applied for this case. Colonoscopy allows, in addition to diagnosis, the excision of potentially malignant polyps. Another relevant fact is that colorectal adenocarcinoma was not the diagnostic target of this patient, so other screening tests were not part of the clinical reasoning of the health team. In this case, fecal occult blood testing, which is currently the most widely used low-cost test in the Brazilian health system, was not an option due to the absence of significant risk factors, the only one being

the patient's age, which, according to the National Cancer Institute, would already be classified as a moderate risk for colorectal neoplasia11. However, thinking about the potential of colonoscopy for other diseases and conditions, this was the choice used for the patient, it should be said that it was successful, since it was responsible for the early diagnosis of a malignant neoplasm.

Despite changes in the age of screening initiation, the final age for screening remains recommended at 75 years, due to the low benefit offered to patients after this age12.

The standard treatment for colorectal cancer is surgery, chemotherapy and radiotherapy, and can be used in combination according to the stage of disease advancement13. For the treatment of this type of cancer, resection of the affected intestinal segment is considered the best option. The presence of neoplasia alone is a clear indication for this procedure, as well as benign lesions and trauma. Surgical morbidity and mortality is directly associated with eligibility classification, depending on whether the surgery is elective or performed on an emergency basis6,7.

For this patient, discovered asymptomatic, the expected survival is significantly in favor, making surgery an appropriate option. However, when discerning this type of choice, another factor must be taken into account, such as quality of life. Thinking about transanal resection, the postoperative period can predispose to several adversities, such as infections, sepsis, and even death. The experience of counseling is decisive in technical decisions, such as the choice between the use of staples or manual suturing in the intestinal anastomosis. The fast-track protocol allows the early introduction of oral diet on the first postoperative day, with good accessibility6,7. As previously mentioned, the recurrence rate for these tumors reaches a considerable 54% of cases. Therefore, surgical intervention may be unnecessary, since this patient is not urgent and has the same chances of tumor recurrence in another site of the gastrointestinal tract13.

Immunotherapy is a new option in cancer treatment, using the patient's immune system to fight tumor cells. Unlike traditional treatments, it activates both innate and adaptive immune responses for consideration and destruction of cancer. This method has been shown to be successful, especially in hematologic malignancies and solid tumors, solving the problem of lack of specificity that affects chemotherapy and radiotherapy. By directing specific stimuli to malignant cells, immunotherapy preserves healthy cells. Those who responded well to immunotherapy have a better prognosis and quality of life13. In underworld countries, such as Brazil, this therapy may be unavailable and difficult to access. In cases of metastasis, adjuvant chemotherapy becomes necessary due to the

wide spread of cancer cells through the bloodstream. Subsequent colonoscopies are essential to detect tumor recurrences, although there is still little specific information on their impact on metachronous lesions14. The information regarding colonoscopy follow-up is limited to that previously mentioned as widely advantageous in the screening of recurrences, confirming the fact that it is perhaps the best choice in this case.

No studies were found that establish a relationship between aging and increased risk of metachronous neoplasms. It should be noted that adenomas, whether low or high risk, do not significantly influence the development of these neoplasms. According to a study cited in this study, it is not necessary to intensify the frequency of colonoscopies in patients with adenoma/adenocarcinoma colorectal cancer6.

CONFLICTS OF INTEREST

The authors state that there is no potential conflict of interest that could compromise the impartiality of the information presented in this scientific article.

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