

Prevalence of Colorectal Tumors in People under 50 Years Old

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ABSTRACT

Introduction: In recent years, patients aged 50 years or younger with colorectal tumors have increased. Early studies are currently being conducted, either out of increased social concern or research, as evidenced by several recently published investigations.

Objective: To find out if there is an increase in surgery for colorectal tumors in patients ≤ 50 years of age.

Design: Retrospective, cross-sectional, descriptive study.

Material and methods: Patients ≤ 50 years operated on for colorectal tumors in the Coloproctology service of the Sanatorio Adventista del Plata, from January 2013 to October 2020 were included. Characteristics of the patients (pre-surgical nutritional status, BMI, predominant sex), tumor etiology, type of surgery performed and most frequent postoperative complications were analyzed.

Results: There was an increase in patients ≤ 50 -year-old operated on for colorectal tumors, with an annual increase in their proportion. Most of the affected patients were overweight, followed by patients with normal weight and obesity grade 1. Males predominated. The most frequent tumor etiology was adenocarcinoma, followed by diverticular pathology. Left colectomy was the most frequent surgery, followed by anterior resection.

Conclusions: There was an annual increase in the percentage of patients ≤ 50 year-old operated on for colorectal tumors. Most were men. Overweight appears as the most frequent characteristic in this population.

Keywords: Colorectal Tumors; Colorectal Neoplasms; Diverticular Tumor; Persons Younger Than 50 Years Old

INTRODUCTION

A person can inherit some DNA mutations that are present in each of their cells. These are inherited mutations and include those found in familial adenomatous polyposis (FAP), attenuated FAP (AFAP), Gardner syndrome, Lynch syndrome (hereditary nonpolyposis colorectal cancer), Peutz-Jeghers syndrome and MYH gene-associated polyposis (MAP).

Acquired risk factors include those related to overweight or obesity, physical inactivity, certain types of diet, smoking and alcohol abuse, among others.¹

According to the figures handled by the Instituto Nacional del Cancer, which depends on the Ministerio de Salud de la Nacion, colorectal cancer (CRC) is the second most frequent cancer in Argentina. It represents 11.8% of all cases in both sexes, behind breast cancer (16.8%) and before prostate cancer (9.7%). According to sex, it is the third in incidence both in men (after prostate and lung cancer) and in women (behind breast and cervical cancer). Each year more than 13,000 new cases are diagnosed and more than 7,000 people die.²

Regular screening tests starting at age 50 are the key to preventing CRC. The US Preventive Services Task Force (USPSTF) recommends that adults 50 to 75 years of age

be screened for CRC and that those 76 to 85 years of age follow their doctor's advice about the relevance of this recommendation.³ About 11% of all CRCs occur in people younger than 50 years, in whom an increase of about 2% per year was observed. The reason for this increase in younger adults is not fully understood and is an active area of research.⁴ It may be due in large part to the increasing number of rectal cancers.

The primary objective of this study is to demonstrate whether there was an increase in tumor pathology, regardless of etiology, in patients ≤ 50 years of age who underwent colorectal surgery. The secondary objective is to analyze the characteristics of the patients, the surgeries performed and their results.

MATERIAL AND METHODS

This is a retrospective, cross-sectional and descriptive study. Includes patients who consulted through the office or the emergency room with the colorectal surgery team of the Sanatorio Adventista del Plata. The data were obtained from the medical records of the institution. The records cover from January 1, 2013 to October 31, 2020. Of a total of 285 patients operated on for colorectal pathology, 40 patients ≤ 50 years were selected.

The data collected included the demographic and clinical variables of the patients (age, sex, BMI, nutritional status prior to surgery, etiology of the tumor), those of the surgical treatment (type of technical resection, laparosc-

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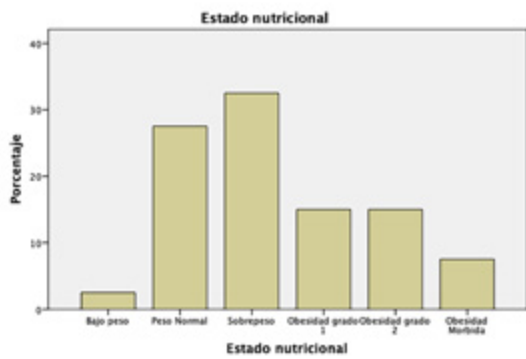


Figure 1: Nutritional status of patients undergoing colorectal surgery.

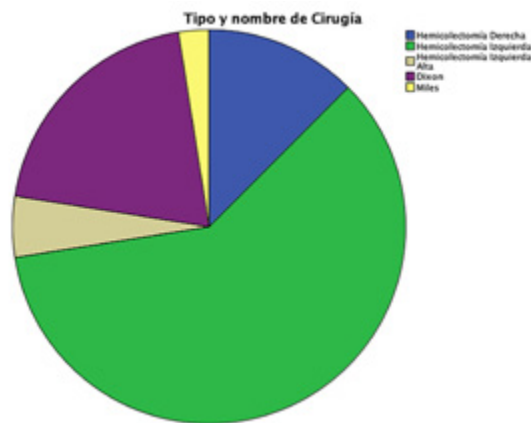


Figure 2: Surgical resections in patients with colorectal tumors.

pic or conventional approach) and those of the postoperative period (complications, resumption of oral feeding, hospital stay). The data was treated confidentially in accordance with the Helsinki protocols.⁵ For the statistical analysis, the IBM SPSS Statistics Version 22.0.0.0 software was used.

RESULTS

The annual proportion of individuals aged 50 years or younger who underwent surgery for colorectal tumors increased from 2013 to 2020, with the sole exception of 2016 (Table 1).

Fifty-five percent of the patients were male and 65% were overweight or morbidly obese (Fig. 1).

When evaluating the preoperative nutritional status by analyzing albumin and total protein, it was found that 17.5% had hypoalbuminemia and only 20% had normal total protein values. However, it should be noted that albuminemia was tested in only 50% of all patients and total protein in 37.5%, since for some years these laboratory studies were not requested.

Regarding the surgical technique chosen, in most patients (60%) a left colectomy was performed, followed in

TABLE 1: ANNUAL INCIDENCE OF COLORECTAL SURGERY IN PATIENTS 50 YEARS OF AGE OR YOUNGER.

| Year | Colorectal resections n = 285 | Patients ≤ 50 years n = 40 (%) |
|------|----------------------------------|-----------------------------------|
| 2013 | 16 | 1 (6.2) |
| 2014 | 28 | 3 (10.7) |
| 2015 | 31 | 7 (22.5) |
| 2016 | 38 | 3 (7.8) |
| 2017 | 48 | 6 (12.5) |
| 2018 | 41 | 6 (14.6) |
| 2019 | 46 | 8 (17.3) |
| 2020 | 37 | 6 (16.2) |

TABLE 2: HISTOPATHOLOGY OF COLORECTAL TUMORS

| Histopathology | n (%) |
|--------------------|-----------|
| Adenocarcinoma | 26 (65) |
| Diverticular tumor | 11 (26.5) |
| Other neoplasms | 3 (7.5) |

20% by an anterior resection of the rectum (Dixon).

Only one patient underwent conventional surgery and in 10% of patients, due to the lack of staplers regardless of the reason, a handsewn suture was performed (Fig. 2).

Histopathology reported that almost two-thirds of the tumors were adenocarcinomas and a much smaller percentage were other neoplasms (lymphoma, sarcoma, melanoma, and GIST). On the other hand, 26.5% were inflammatory tumors due to diverticular disease (Table 2).

Of the patients who had a postoperative consultation with the Oncology service, 55% continued with chemotherapy and 45% with radiotherapy. Only six patients continued with both treatments.

Regarding the resumption of oral feeding, more than half of the patients (57.5%) started with liquids (water) on the 1st postoperative day, while 32.5% did so in the immediate postoperative period.

There was no morbidity in 92.5% (37) of patients. There were 4 postoperative complications: anastomosis dehiscence 2, sepsis 1 (in 1 case of anastomosis dehiscence), urinary retention and infection 1 (discharged with urinary catheter and controlled by Urology).

DISCUSSION

Although most cases of colorectal tumors are diagnosed in older people, different studies have confirmed an increase in adults under 50 years of age.⁶ According to the Mayo Clinic in the United States, colon cancer rates in

people under 50 years have increased, although doctors are not sure why.⁷ Even 12% of cases were expected to occur in adults younger than 50 years in 2020.⁸ According to published data, in the United States the incidence increased 1.5 % by year . Thus, mortality from this cause has increased in the group of young patients.⁹

Our study shows a slight but growing increase in patients operated on for colorectal tumors, although the expected increase in cases in 2020 has not occurred, probably due to the SARS-CoV-2 pandemic. As reported by de la Portilla et al.,¹⁰ the pandemic produced a consumption of healthcare resources and a significant decrease in the activity of colorectal surgery units, both for benign and malignant pathologies.

According to the National Cancer Institute of Argentina, men do not have a much higher incidence of colorectal tumors than women.¹¹ This was evidenced in our series.

On the other hand, most of the men were overweight and obese to some degree. Obesity is directly related to the appearance of type 2 diabetes mellitus and increased cardiovascular risk. This is a condition in which people are less active, often secrete excess insulin, and may consume too many calories, such as fats, sugars, and carbohydrates, promoting a risk factor for CRC.¹² Other conditions, such as adenomas and diverticular disease, have also been related to obesity.¹³⁻¹⁵

Postoperative complications occurred in overweight and obese patients in our series. This contrasts with that reported by other authors on higher morbidity in patients with low BMI.¹⁶

Furthermore, as in our study, Crombe et al.¹⁷ found significant differences regarding the surgical approach, concluding that complications are less with laparoscopy.

Regarding pre-surgical nutritional status, reduced serum albumin values are associated with delayed wound healing and increased morbidity and mortality. It has been shown that patients with a diagnosis of malnutrition or a high risk of malnutrition suffer more infectious and non-infectious complications.¹⁸ Therefore, it is necessary to record albuminemia from the moment of diagnosis of the surgical condition and after hospital admission, and continue observation for changes in response to established nutri-

tional therapy.^{19,20} Hypoalbuminemia is known to be associated with poor postoperative outcomes. A decrease in albumin from 4.5 g/dl to 2.1 g/dl is associated with an increase in morbidity from 10 to 65%.²¹⁻²³

In our service, the most frequent surgery was left colectomy, as in the Department of Medicine of the University of Chile.²⁴

In reference to pathological anatomy, it is universally recognized that more than 90% of CRCs are adenocarcinomas, while lymphomas, sarcomas and melanomas are rare.²⁵ As for tumors of diverticular origin, they predominate in males, as confirmed by the Practice Guidelines of the World Gastroenterology Organization. In females, they are more frequent after 75 years of age.²⁶ The statistics presented in our study coincide with the mentioned concept.

Early oral diet has been shown to be safe 4 hours after surgery.²⁷ In contrast, in this study the majority (57.5%) started with water by mouth after 24 hours. Regarding hospital stay, in our patients it was an average of 3 days, corroborating what was reported by the American College of Surgeons.²⁸

As a final reflection, we consider that it would have been very useful to analyze toxic habits such as smoking, alcohol abuse, sedentary lifestyle, but this information was lacking. It would also have been important to have had total protein and albumin data for all patients, in addition to information from direct relatives to rule out Lynch syndrome, among others of a genetic origin.

On the other hand, it must be taken into account that despite the pandemic, a significant number of patients were able to undergo surgery.

CONCLUSIONS

This study evidenced an annual growth of surgeries for colorectal tumors in patients under 50 years of age. Most were adenocarcinomas.

There was a predominance in males and in overweight and obese patients, both for adenocarcinomas and in tumors of diverticular origin.

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