

Mucinous Colorectal Adenocarcinoma on a 21-Year-Old Female. Case Report and Literature Review

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Abstract: Colon and rectal cancer is now the third most diagnosed in the West. About 40% of cases are diagnosed after age 75, and the incidence increases with age. Mucinous colorectal adenocarcinoma is a subtype of colon cancer. The effect of diet on the development of colon and rectal cancers is unclear. The clinical picture divides the colon into 2: Right-sided colon (cecum, ascending colon, hepatic flexure) versus the left-sided colon (splenic flexure, descending colon, sigmoid, rectosigmoid) and rectum. Arbitrarily, two-thirds of the transverse colon is on the right side. Patients are usually asymptomatic for the most part, when symptoms exist, they present as transrectal bleeding, changes in intestinal habits, anemia, or abdominal pain. In younger patients, additional factors are used to identify those at higher risk for colorectal cancer. (e.g., having a family history of colorectal cancer, changes in bowel habits, unexplained weight loss, and blood mixed with the stool instead of blood on the surface of the stool).

Keywords: Colorectal cancer, adenocarcinoma, surgery.

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INTRODUCTION

Colon and rectal cancer are common malignant tumors of anoepithelial origin, and their incidence increases with age. These tumors are now the third most diagnosed in the West, but in approximately 80% of cases, patients are diagnosed with localized tumors with or without spread to nearby lymph nodes. There are many risk factors, but the strongest are age and family history. Mucinous tumors are more frequently found in the right colon and in patients under 50 years of age and are more likely to be in more advanced stages than non-mucinous tumors. Mucinous colorectal adenocarcinoma is a subtype of colorectal cancer characterized by the presence of abundant extracellular mucin that represents at least 50% of the volume of the entire tumor. Its incidence is between 10% -20% of patients with colorectal cancer and is more common in women and younger patients. This is most frequently located in the

proximal colon and is usually diagnosed at an advanced stage. According to its molecular context, mucinous colorectal adenocarcinoma is associated with the overexpression of mucin 2 (MUC2) and mucin 5AC (MUC5AC) proteins.

CLINICAL CASE

A 21-year-old female presented to the emergency department with colic-like abdominal pain of 1 week's duration, predominantly in the left flank, radiating to the epigastrium and mesogastrium, accompanied by vomiting on 15 occasions, last evacuation approximately 1 week. She has a significant family history: a father with type 2 diabetes mellitus and a paternal grandmother with lung cancer.

She is admitted with the following laboratories:
white blood cells 18.8 neutrophils 85% hemoglobin 14.8

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hematocrit 45.7 creatinine 0.89 prothrombin time 14.2 thromboplastin time 22.3 INR 1.18.

The patient was admitted to the operating room with a diagnosis of intestinal obstruction, an exploratory laparotomy-type infraumbilical incision was made, finding 100 milliliters of inflammatory fluid in the cavity, a tumor was found in the descending colon

measuring approximately 7x8 centimeters, indurated, irregular edges, adhered to the retroperitoneum, loss of Told's fascia anatomy (fig 1). Segmental resection of the descending colon and distal third of the transverse colon was performed and sent to pathology. Carcinoembryonic antigen was taken after surgery, finding the amount of 2.42 (laboratory reference less than 5 nanograms per deciliter).



Figure 1: Tumor in descending colon

1 month after his surgery, a follow-up colonoscopy was performed with the following findings: sigmoid shape and compliance altered by post-surgical changes. At 25 centimeters, a blind sac was present, 2

elevated submucosal lesions of approximately 20 millimeters were found, which were taken. Biopsy (fig. 2, 3 and 4).



Figure 2: Lesion 1 found in colonoscopy



Figure 3: Second lesion found in colonoscopy



Figure 4: Friable lesion in colonoscopy

Pathology Result

Mucinous, ulcerated, and invasive adenoma of the serosa and pericolic adipose tissue (fig. 5), vascular

and neural permeation, extensive areas of necrosis, extension to the mesoappendix. It is classified as T4N1cM1a (fig. 6).

TNM Stage	Description
Tumor	
T1	Tumor invades submucosa
T2	Tumor involves muscularis propria but does not cross it
T3	Tumor extends beyond muscularis propria into mesorectal or pericolic fat
T4	Tumor invades adjacent organs or perforates the visceral peritoneum
Node	
N0	No nodal metastasis
N1	1–3 perirectal or pericolic nodes
N2	4 or more perirectal or pericolic nodes
Metastasis	
MX	Cannot be assessed
M0	No metastasis
M1	Distant metastasis

Figure 5: TNM according to actual classification

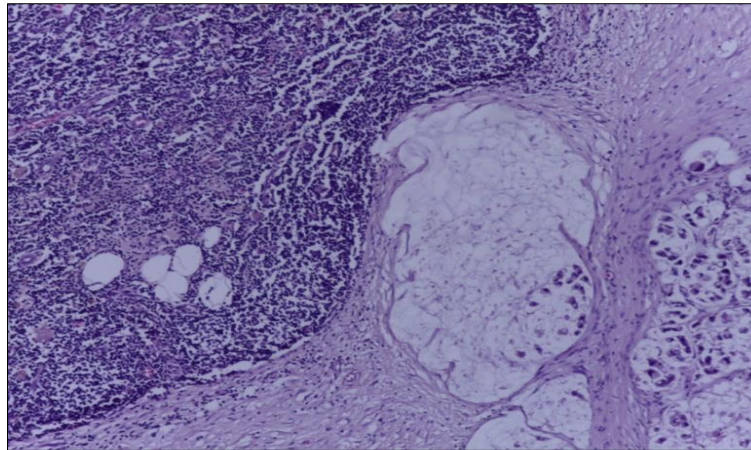


Figure 6: Mucinous adenoma with serosa rupture

Epidemiology

Until 2020, colorectal cancer ranked fourth worldwide in incidence (fig. 7) and third place in mortality, and in those under 35 years of age it ranked

tenth (fig. 8). These rates also vary geographically, with the highest rates observed in the most developed countries (figure 9).

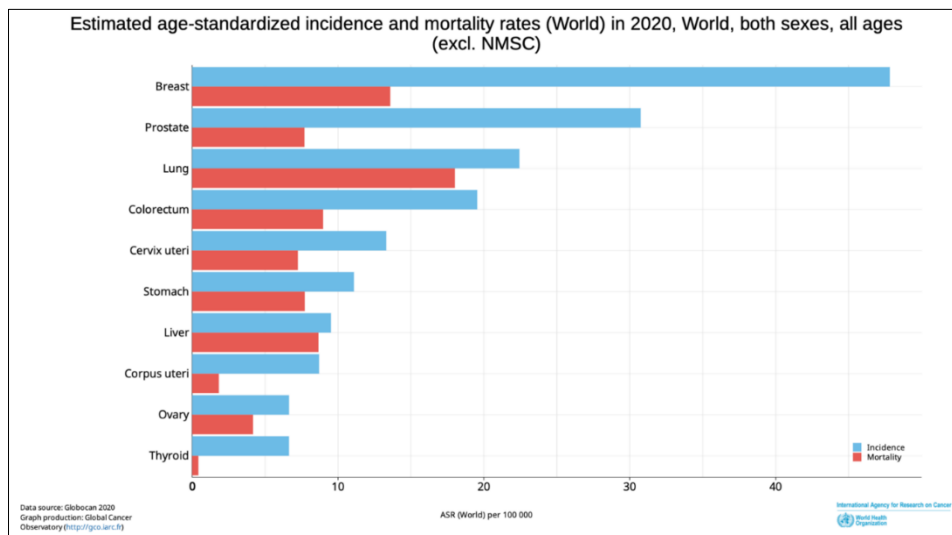


Figure 7: According to WHO: incidence and mortality in colorectum cancer around the world

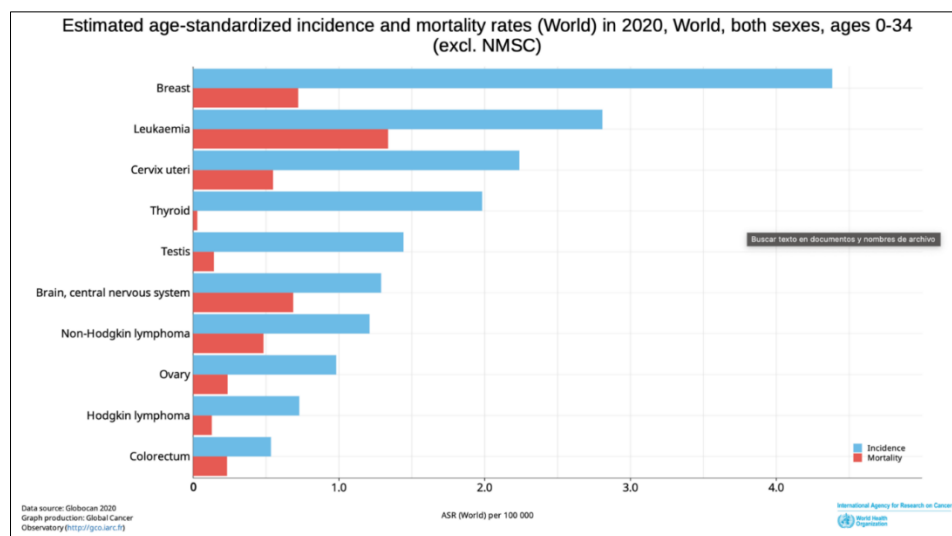


Figure 8: According to WHO in people under 35 years incidence and mortality in colorectum cancer

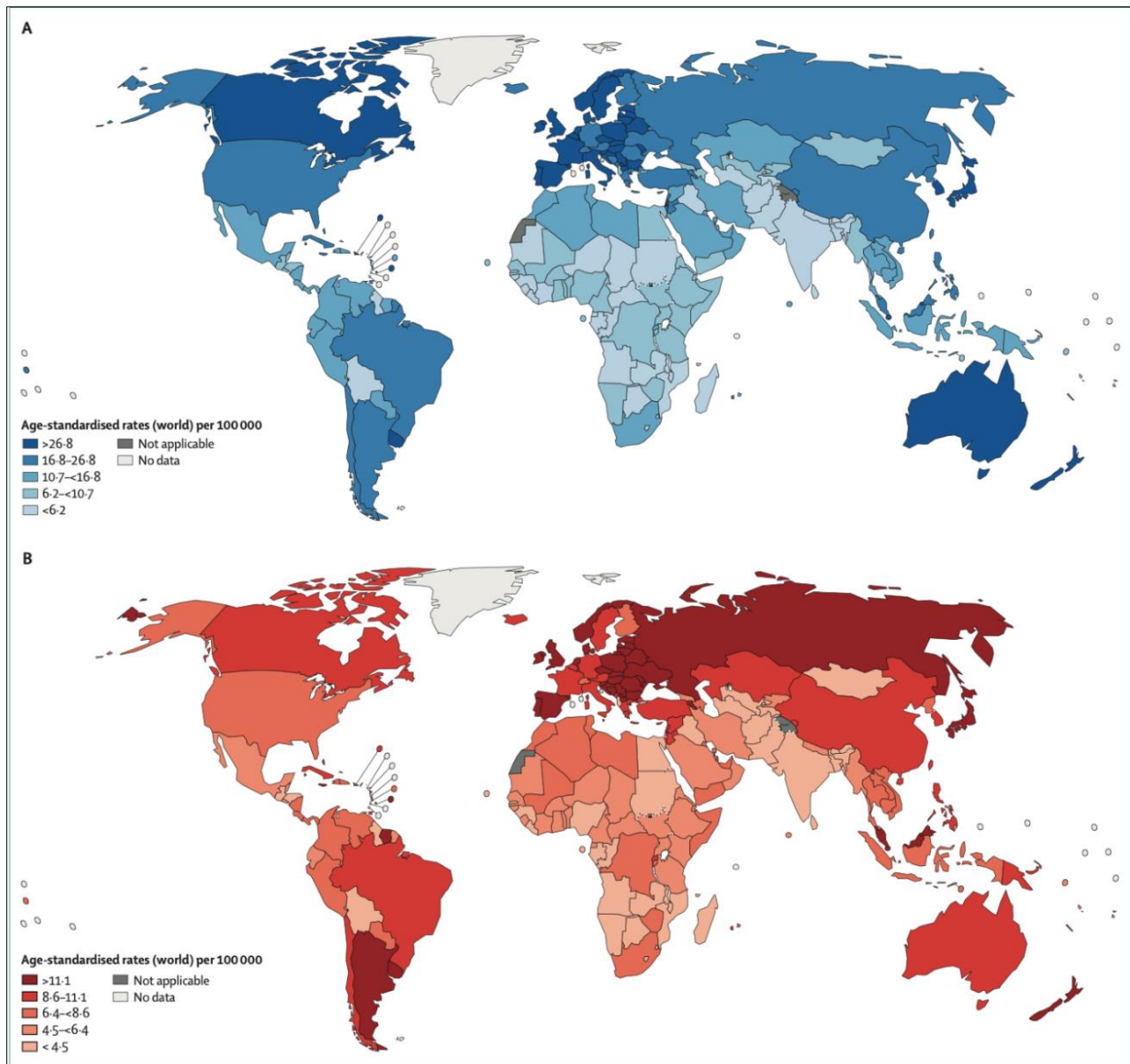


Figure 9: Age-standardised cancer incidence (A) and mortality (B) rates for countries in five continents according to the latest WHO International Agency for Research on Cancer

Risk Factors

There are many risk factors, but the strongest are age and family history. The incidence of colon and rectal cancer increases with age, but about 40% of cases are diagnosed after age 75. A positive family history appears to play a role in approximately 10% to 20% of all colorectal cancer patients. Familial syndromes play an important role in colon cancer.

Approximately 5 to 7% of patients with colorectal cancer is affected by a well-defined hereditary colorectal cancer syndrome. Hereditary colorectal cancer syndromes can be subdivided into nonpolyposis syndromes (Lynch syndrome and familial colorectal cancer) and polyposis syndromes. Lynch syndrome causes about 2 to 5% of all cases and familial adenomatous polyposis, less than 1% of all cases. Patients with Lynch syndrome are more often diagnosed

at a younger age (average age 45 years) with tumors on the right side of the colon (in 70% of cases), more often with more than one tumor at a time. at the same time (synchronous) and have a higher risk of developing other cancers, such as uterine and ovarian cancer, stomach and small intestine cancer. Patients with a history of colon polyps and patients with a history of colon or rectal cancer or colon polyps in close relatives are at increased risk.

Other risk factors such as inflammatory bowel diseases, i.e. ulcerative colitis and Crohn's disease, increase the risk of colon cancer. The risk of colon cancer in these patients is thought to be around 15-20% after 30 years, and the risk is possibly higher with ulcerative colitis.

Tobacco smoking appears to increase the risk of both colon and rectal cancer, as well as the mortality rate. Factors such as physical activity, daily aspirin use, and vitamin D with calcium appear to have a protective effect. The effect of diet on the development of colon and rectal cancers is unclear.

Clinical Picture

The clinical picture divides the colon into 2. Right-sided colon (cecum, ascending colon, hepatic flexure) versus the left-sided colon (splenic flexure, descending colon, sigmoid, rectosigmoid) and rectum. Arbitrarily, two-thirds of the transverse colon is on the right side.

Patients are usually asymptomatic for the most part, when symptoms exist they present as transrectal bleeding, changes in intestinal habits, anemia or abdominal pain. In younger patients, additional factors are used to identify those at higher risk for colorectal cancer.

(e.g., having a family history of colorectal cancer, changes in bowel habits, unexplained weight loss, and blood mixed with the stool instead of blood on the surface of the stool).

CONCLUSION

Colorectal cancer is a leading cause of cancer-related death worldwide. The most common histological subtype is adenocarcinoma, of which mucinous adenocarcinoma is characterized by abundant mucinous components that constitute at least 50% of the tumor volume. Statistics suggest that between 10% and 20% of patients with colorectal cancer are of the mucinous subtype. This is found more frequently in the proximal colon than in the rectal or distal colon. This subtype is more common in women and younger patients compared to non-mucinous colorectal adenocarcinoma. Likewise, mucinous colorectal adenocarcinomas are diagnosed when they are already in advanced stages and tend to have worse responses to chemotherapies compared to their non-mucinous counterparts.

Conflicts of Interests: The authors have no conflict of interest to declare.

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