Colorectal cancer in young adults: two case report

Muhammad Yusuf,1* Bellinda Paterasari2

ABSTRACT

Background: Colorectal cancer (CRC) in young adults is low, but for unclear reasons, a rise in CRC incidence has been reported in patients aged <50 years. The incidence of CRC in young individuals increased by 2% to 8% annually over the past two decades. CRC diagnosis in young people is always difficult, early detection of colorectal cancer is important for early diagnosis and improve clinical management.

Case Description: 24-year-old woman presented with symptoms of abdominal pain and vomiting for 5 months and weight loss. Thirty three-year-old man was hospitalized due to the symptoms of persistent abdominal pain for 5 months, fecal changes, bloody stools and weight loss. Both of them have no chronic disease or familial history of malignancy. The woman underwent an ileostomy and adhesiolysis through laparotomy due to a history of previous appendicitis. Intraoperative, colon was found dilated starting from the duodenum up to 10 cm proximal to the transverse colon so an extended right hemicolectomy is performed. The man underwent colostomy and Hartmann’s procedure by laparotomy but the mass was failed to resected and followed by receiving adjuvant chemotherapy. Pathological finding post operative confirmed adenocarcinoma colorectal invasive for the woman and adenocarcinoma rectosigmoid for the man.

Conclusion: Within a young group, CRC is usually diagnosed later and potentially associated with worst prognosis. Detecting CRC at an early, more treatable stage is important for cure and survival. This report suggest a greater suspicion rate and early screening that necessary when evaluating young patients with common symptoms.

INTRODUCTION

Colorectal cancer (CRC) incidence patterns have been changing over the last few decades.1 CRC is generally thought of as a disease of older persons, with more than 90% of patients being diagnosed after the age of 55 years.2 However, for unclear reasons, a rise in CRC incidence has been reported in patients aged <50 years.3 Recent studies suggested that as many as 7% of patients who developed CRC were under 40 years of age, and this incidence keeps increasing.4 In addition, the incidence of colorectal neoplasm is increasing in Asia.2

Moreover, based on current trends, they predicted that in 2030, the incidences of colon and rectal cancer will increase by 90% and 124%, respectively, for persons aged 20–34 years and by 28% and 46%, respectively, for those aged 35–49 years. Because young adults aged <50 years belong to the economically active population, an increase in CRC in this demographic will lead to future socioeconomic burdens.4

The mechanisms underlying the rising incidence of CRC among young patient are currently not well understood, however, this increasing trend is a population health concern.5 Knowledge of high CRC incidence rate in the young population of some countries can, therefore, increase the rate of early diagnosis and improve clinical management of these patients.6 The finding of CRC in adolescents or young adults has always raised attention due to issues such as the emotional impact at diagnosis, the disease behavior and the possibility to be associated with genetic diseases.6

In this report, we describe 2 young adult cases diagnosed with the colorectal adenocarcinoma. With our brief case reviews, we emphasize the importance of early detection of colorectal cancer in young adult population.

CASE DESCRIPTION

Case 1

A 24-year-old woman was hospitalized because of intermittent abdominal pain that has present for the preceding 5 months and abdominal distension for 3 months. She also had experienced nausea, vomiting and lost over 20 kg weight during the past 2 months. Patients had a history of appendicitis last year. After surgery, patients complain of frequent bowel movements. Additionally, she did not have any chronic diseases and had no family history of malignancy.

Distended abdomen, decreased bowel sounds, scar and darm contour were observed during the physical examination. A mass in the epigastric and right lumbar region was palpable during palpation. Vital signs, digital rectal examination and laboratory tests are within normal limits. Abdominal CT scan revealed bowel dilation due to adhesion.
From the findings, she was diagnosed as a small bowel adhesion obstruction with an intra-abdominal tumor as differential diagnosis. We decided to perform a surgical resection, an ileostomy and adhesiolysis through laparotomy. Intraoperative, colon was found dilated starting from the duodenum up to 10 cm proximal to the transverse colon so an extended right hemicolectomy is performed. Pathological examination pathological an invasive colorectal adenocarcinoma transverse colon.

**Case 2**

A 33-year-old man presented with hematochezia, 5-10 times per day that has present for the preceding 5 months. Bright red blood appearing during or after a bowel movement and associated with lower abdominal pain. He lost over 15 kg of weight during the past 4 months. He likes to consume ready-to-eat foods and 3 to 4 cans of drinks every day. No one in his family had colorectal or other malignancies.

Owing to rectal bleeding and weight loss as suggestive symptoms of cancer, colonoscopy was performed to confirm the diagnosis. Colonoscopic findings included hemorrhoids in the rectum and easily bleeding mass in the sigmoid colon. The mass revealed a rectosigmoid tumor. The patient underwent colostomy and Hartmann’s procedure by laparotomy but the mass was failed to resected. The pathological examination results confirmed a moderately adenocarcinoma recti (sigmoid). Post-operative, the patient receiving adjuvant chemotherapy using the regimen of 5-fluorouracil, irinotecan and leucovirin.

**DISCUSSION**

Colorectal cancer (CRC) is the commonest malignancy in the gastrointestinal tract and the third leading cause of cancer associated death in the world. Colorectal cancer is a disease that can arise from various tumorigenic pathways. Adenocarcinoma of colon and rectum is a type of cancer that is often found in patient with colorectal cancer. Adenocarcinoma of colon and rectum is also a progression of colorectal cell from normal tissue to dysplastic epithelium to carcinoma - referred to as adenoma-carcinoma sequences-accompanied by several genetic changes including oncopgenes, activation and inactivation of tumor suppressing genes, and gene incompatibility in repairing genes.

The incidence of CRC in young individuals has increased by 2% to 8% annually over the past two decades. CRC is now one of the 10 most common causes of death among individuals between the ages of 20 and 49 years. The incidence of CRC diagnosed before 40 years of age varies from 0.8% to 15%.

Most colorectal cancers are rare cases. But in some cases, it can arise from inherited cancer syndromes, such as Lynch’s syndrome (the most common syndrome), and hamartomatous, hyperplastic, recessive autosomal recessive related to MYH, and family adolescent polyposis. However, this only represents about 2-5% of all colon and rectal cancers. Inflammatory conditions in the intestine, such as ulcerative colitis and Crohn’s disease, have been associated with increasing the risk of colon and rectal cancer, but only account for 1-2% of all cases that have been encountered. Other diseases which increased risk of colon and rectal cancers of young patients are such as those with inflammatory bowel disease, hereditary non-polyposis colon cancer and polyposis syndromes of the GI tract.

Diagnosis in young people is often late because neoplasms are less common in this age group and symptoms tend to be associated with benign pathology. These is the author’s consideration in raising these two cases. In addition, for young patients who develop CRC, but do not have known predisposing risk factors, late diagnosis and poor results of the prognosis can occur due to the failure of doctors to consider the possibility of malignant disease in a differential diagnosis.

The findings of CRC in young patients not only a challenge in diagnose, but also in the management wether what the best choice for the patient is. When dealing with young patients, it is better to separate true CRC from those hereditary syndromes such as Lynch Syndrome or Familial Adenomatous Polyposis.
Polyposis. However, even for CRC patients under 40 years, the prevalence of a positive family history of cancer is low, under 27%. So that, in this age group, genetic evaluation is recommended.

Detecting CRC at an early stage is important for the healing and survival of patients especially in young patients. Young patients with signs of bowel changes, rectal bleeding, anorexia, and weight loss should be considered to have alarming symptoms that lead to cancer and have relatively high risk of CRC. Factors that make clinician late in diagnose CRC in young adult patient are the assumption that the symptoms above are caused by hemorrhoids or irritable bowel syndrome, inadequate investigation of iron deficiency anemia, and inadequate rectal or abdominal examination.

In this report, it is known that both patients do not have a family history of malignancy as a risk factor. However, it is possible that the patient can be diagnosed with colorectal cancer. Our clinicians diagnose patients in case 1 as small bowel adhesion obstruction that occurs due to a history of previous appendicitis with an intra-abdominal tumors as a differential diagnosis.

Symptoms in both patients should be regarded as suggestive of colorectal cancer symptoms. Abdominal pain, rectal bleeding, bowel habits and weight loss are common symptoms of colorectal cancer. The symptoms were confirmed by the presence of intraoperative findings in case 1 that shows a dilation of colon and colonscopic findings in the form of easy bleeding mass in the sigmoid colon in case 2. Pathological examination results in case 1 and case 2 showed an invasive colorectal adenocarcinoma and a moderate adenocarcinoma recti (sigmoid), respectively.

A previous prevalence study with young patients showed that the most common symptoms are rectal bleeding (57%), abdominal pain (31%), change in bowel habits (21%), weight loss (11%), and anemia (11%). Any symptoms indicative of colorectal cancer can be an indication for further imaging tests. Once colorectal cancer is suspected, barium enema, ultrasound abdominal examination, colonoscopy, abdominal CT, and therapeutic surgical resection can be performed.

CRC diagnosis in young people is always difficult, as both patients and physicians underestimate symptoms and postpone diagnosis and management. This finding has raised questions for considering age-based colonoscopy screening beginning at age 40. This is especially true for men, because they have a higher risk of developing advanced neoplasia at any age compared to women, with a previous screening history possibly detecting more pre-neoplastic colonic lesions and asymptomatic neoplastic.

Tumor makers can also be used to suspect the presence of colorectal cancer. Many serum markers are associated with colorectal cancer, especially CEA. However, serum markers, including CEA, have a low diagnostic ability when compared with radiologic examination due to low sensitivity (only 46%) and a possibility of false-positives, including in other benign tumors. However, CEA levels of over 5ng/mL predict a worse prognosis than lower levels.

Regarding the anatomical distribution, it has been documented that CRC in young people is confined to a topography distal to the splenic angle of the colon in more than 80% of the cases, which is why they usually determine rectal bleeding, abdominal pain, fecal changes and mucor.

Anatomical distribution CRC in these cases shows that mass was found in transverse colon dan sigmoid colon. In case 1, mass was found in epigastric dan right lumbar region by palpation. Intraoperatorically, dilation of colon was found from duodenum to 10 cm proximal to transverse colon.

Sigmoidoscopy may be recommended as an early screening to establish or rule out the onset of CRC at a young age with early symptoms of rectal bleeding (for example, bright red blood appears during or after bowel movements). Because most onset of CRC young people occur in the rectum, rectosigmoid colon, and distal colon. However, in individuals younger than 55 years, 30% of lesions can occur proximal to the splenic flexure and will be missed with sigmoidoscopy. Colonoscopy is recommended if there is no clear cause of anorectal bleeding and the bleeding is persistent, regardless of the patient’s age. Cost-effectiveness data are limited, but at least one study has reported cost-effective colonoscopy in evaluating individuals aged 25 to 45 years with rectal bleeding and no other symptoms.

If a patient is diagnosed with colorectal cancer that is curable, complete resection is the ideal management. Left-sided tumors require subtotal colectomy, and right-sided tumors require extended hemicolecction. According to TNM staging, adjuvant chemotherapy and radiotherapy are required, but these treatment regimens are controversial. In case 1, right-sided tumors in transverse colon was resected by extended hemicolecction while coloscopy and Hartmann’s procedure in case 2 was failed to resect the rectosigmoid mass. Patient in case 1 is recovered with only surgery while patient in case 2 is followed by receiving adjuvant chemotherapy. Although CRC screening in the average risk population is recommended starting at the age of 50 years, there are no data regarding optimal modalities for health screening programs. Colonoscopy is undoubtedly the most sensitive and specific screening test, combining diagnostic and...
therapeutic procedures. However, the primary role of colonoscopy as early screening strategy for the general population remains a matter of debate.  

In adults, despite the high incidence rate, mortality of colorectal cancer is low because of early detection and management. But within a young population, CRC is usually misdiagnosed or diagnosed later and potentially associated with worst prognosis. Thus, a greater suspicion rate and early screening are necessary when evaluating young patients with abdominal pain, changes in bowel habit, bloody stool, and weight loss. Therefore, early detection of colorectal cancer in young patients by extensive evaluation will prevent late diagnosis and poor outcome. Moreover, educational, preventive programs should provide for young populations at risk.

CONFLICT OF INTEREST
None declared.

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