

Evaluation of the Gastrointestinal Tract in a Young Patient with Iron Deficiency Anemia – A Case Report

Dr. Vishal Bodh¹, Dr. Brij Sharma², Dr. Rajesh Sharma³, Dr. Rajesh Kumar⁴

Abstract

Iron deficiency anemia is not a disease in itself, but may be a manifestation of a serious underlying disease such as malignancy. The incidence of colorectal and gastric cancer in younger individuals is low. Therefore, the yield of upper and lower gastrointestinal tract examinations in young men with IDA to evaluate for the presence of GI pathology may also be lower than that in older men. So evidence for the necessity of endoscopy in young men with IDA is significantly lacking. Here we present a case of chronic iron deficiency anemia in a young 25 year old male patient, who on evaluation was found to have sporadic stage IV colonic carcinoma.

Keywords: Iron deficiency anemia, Esophagogastroduodenoscopy, Contrast enhanced tomography, PET, Gastrointestinal, FNAC.

Introduction

Iron deficiency anemia (IDA) is one of the common medical conditions encountered in clinical practice and accounts for approximately one half of cases of anemia.^[1,2] IDA is not a disease in itself, but may be a manifestation of a serious underlying disease such as malignancy. Therefore searching for causes of IDA is crucial. Etiologies of IDA differ with age and gender. Chronic occult gastrointestinal (GI) bleeding is the most common cause of IDA in adult men and postmenopausal women. Current guidelines for managing IDA recommend the consideration of both upper and lower gastrointestinal tract examinations in male and postmenopausal female with IDA.^[3] The incidence of

colorectal and gastric cancer in younger individuals is low. Therefore the yield of upper and lower gastrointestinal tract examinations in young men with IDA to evaluate for the presence of GI pathology may also be lower than that in older men. So evidence for the necessity of endoscopy in young men with IDA is significantly lacking. However Kim NH et al. suggest that EGD, and especially colonoscopy, may be helpful to identify sources of IDA even in asymptomatic young men aged <50 years.^[4] Here we present a case of chronic iron deficiency anemia in young male, who on evaluation was found to have sporadic stage IV colonic carcinoma.

¹ Assistant Professor; ² Professor; ³ Associate Professor; ⁴ Senior Resident, Department of Gastroenterology IGMC- Shimla

Corresponding Author : Dr. Vishal Bodh, Assistant Professor Department of Gastroenterology IGMC- Shimla. E-mail: drvishal33@gmail.com

Case Report

A 25 years old male presented with complaints of easy fatigability and generalized weakness for 2 months. There was no history of hematemesis, malena, hematochezia, hematuria, hemoptysis and worms in stool. No history of diarrhea, constipation anorexia and weight loss. No family history of gastrointestinal malignancy. On general physical examination pallor was present. Systemic examination was normal. His hemogram revealed hemoglobin of 8.1 gm, with normal leucocyte and platelet counts. His peripheral blood film revealed microcytic hypochromic red blood cells. His serum ferritin was low (2.3ng/ml), with low serum iron (16 mcg/dl), low percent saturation (4%) and increased total iron binding capacity (432mcg/dl) suggestive of iron deficiency anemia. His liver and renal biochemistries were normal. His stool work up for worm's ova and cyst was non-contributory. His IgA- tissue transglutaminase was negative. His esophagogastroduodenoscopy (EGD) examination was normal with normal duodenal fold height and number. Duodenal biopsy histopathological examination was also normal. His colonoscopy was planned to further investigate

the cause of anemia. His colonoscopy revealed polypoid growth in distal transverse colon and splenic flexure (Fig 1a). Biopsies were taken from involved area of the colon and contrast enhanced tomography (CECT) planned. His CECT abdomen revealed heterogeneously enhancing circumferential asymmetric thickening involving distal transverse colon and splenic flexure with surrounding mesenteric stranding and subcentimetric lymph nodes? Carcinoma transverse colon with heterogeneous enhancing lesion in liver metastasis (Fig 1b). His ultrasound guided fine needle aspiration cytology (FNAC) from liver lesion was suggestive of metastatic adenocarcinoma. His colonic biopsy histopathological examination was suggestive of adenocarcinoma colon (Fig 1c). A final diagnosis of stage IV carcinoma colon with hepatic metastasis was made. His Positron Emission Tomography (PET) scan was done which revealed ill – defined hyper metabolic eccentric circumferential thickening involving distal transverse colon and splenic flexure with few pericolic lymph node suggestive of primary mitotic pathology. Liver showed two ill-defined intensely FDG avid hypodense lesion involving segment II and VII suggestive of hepatic metastasis (Fig 1d).

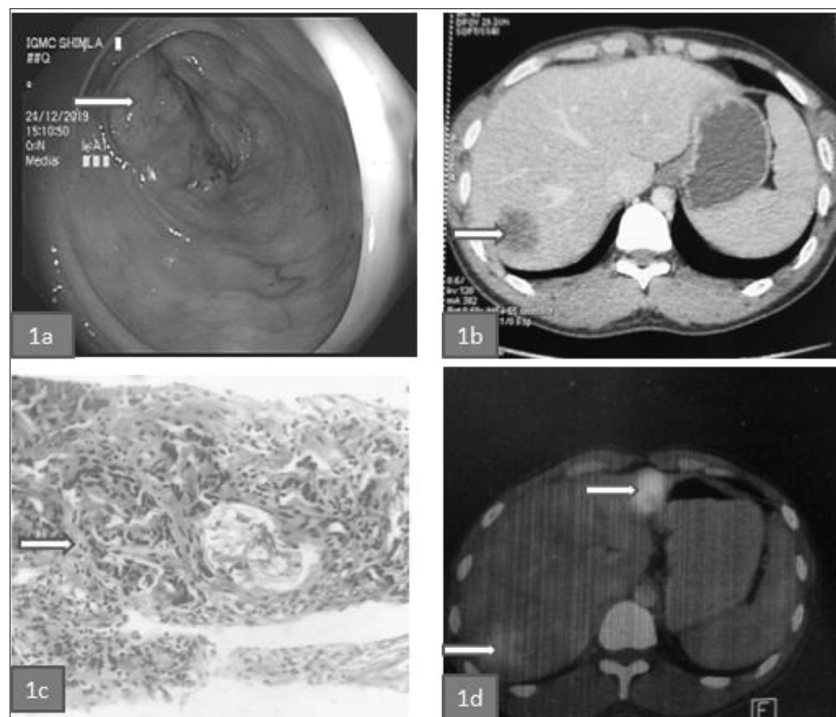


Fig 1a – Colonoscopic image with arrow showing polypoidal growth at splenic flexure occluding lumen. **1b** – CECT-image showing hypodense space occupying lesion in segment VII of liver. **1c** – Histopathological image showing tumor cells arranged in glandular as well as papillary pattern suggestive of adenocarcinoma. **1d** – PET scan image with arrows showing two ill defined intensely FDG avid hypodense lesion involving segment II and VII of liver suggestive of hepatic metastasis.

Prognoses explained to the patient and patient attached to medical and surgical oncology team.

Discussion

Many studies have reported an association between IDA and GI malignancy. One prospective study including 100 subjects with IDA showed that significant GI lesions including cancer were frequently found in patients with IDA (62%).^[5] A population-based study including 9,024 subjects showed that among men and postmenopausal women, GI malignancies are significantly more common in those with IDA than in those without IDA, and subjects with IDA are at increased risk of diagnosis of GI cancer within the subsequent 2 years.^[6] However, in these studies, the majority of study participants were over 50 years of age.

As the incidence of GI malignancies such as gastric cancer and colorectal carcinoma (CRC) increases progressively with age, the likelihood of developing GI malignancy is relatively much

lower in young men < 50 years than in men > 50 years.^[7, 8] Therefore, physicians may agonize over whether both EGD and colonoscopy should necessarily be performed in the case of young men with IDA. However Kim NH *et al.* in their study showed that young men (<50 years) with IDA had significant lower gastrointestinal lesions including CRC, villous adenoma and IBD than in subjects without IDA. Our patient also found to have stage IV colorectal carcinoma during evaluation of iron deficiency anemia.

Young-onset CRC (yCRC), defined as CRC diagnosed in individuals younger than age 50^[9]. Approximately, one in every five individuals affected with yCRC carries a pathogenic germline variant in genes associated with predisposition to cancer. However, most have no clinically identifiable risk factors and family history as is seen in our patient. Young individuals with CRC tend to be diagnosed at later stages and often present with metastatic disease as seen in our patient.^[9] Since one in ten new CRC diagnoses involve individuals age <50, recent guidelines have proposed lowering the age for average risk CRC screening from 50 to 45.^[9]

Conclusion

Iron deficiency anemia in young male patients may have sinister underlying cause like colorectal malignancy. Delaying or deferring the endoscopic evaluation in young patient with IDA, can delay the diagnoses of serious underlying etiology. If iron deficiency anemia is diagnosed in the young male patient, we consider it mandatory to rule out gastrointestinal pathology, and referral to a gastroenterologist is the most effective way to proceed

References:

1. Short MW, Domagalski JE. Iron deficiency anemia: evaluation and management. *Am Fam Physician* 2013; 87:98–104.
2. Johnson-Wimbley TD, Graham DY. Diagnosis and management of iron deficiency anemia in the 21st century. *Therap Adv Gastroenterol* 2011; 4:177–184.
3. Goddard AF, James MW, McIntyre AS, Scott BB, British Society of Gastroenterology. Guidelines for the management of iron deficiency anaemia. *Gut* 2011;60:1309–1316
4. Kim NH, Park JH, Park DI, *et al.* Should asymptomatic young men with iron deficiency anemia necessarily undergo endoscopy? *Korean J Intern Med.* 2018 Jan 5.
5. Rockey DC, Cello JP. Evaluation of the gastrointestinal tract in patients with iron-deficiency anemia. *N Engl J Med* 1993; 329:1691–1695.
6. Ioannou GN, Rockey DC, Bryson CL, Weiss NS. Iron deficiency and gastrointestinal malignancy: a population-based cohort study. *Am J Med* 2002; 113:276–280.
7. Inra JA, Syngal S. Colorectal cancer in young adults. *Dig Dis Sci* 2015; 60:722–733.
8. Karimi P, Islami F, Anandasabapathy S, Freedman ND, Kamangar F. Gastric cancer: descriptive epidemiology, risk factors, screening, and prevention. *Cancer Epidemiol Biomarkers Prev* 2014; 23:700–713.
9. Venugopal, A., Stoffel, E.M. Colorectal Cancer in Young Adults. *Curr Treat Options Gastro* 17, 89–98 (2019).

+