

In search of the Cause of Iron Deficiency Anemia

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ABSTRACT

Published on 26th March 2015

Iron deficiency anemia from obscure gastrointestinal bleeding source can at times present a diagnostic challenge with no identifiable source of blood loss by conventional investigations. A small intestinal pathology is highly likely in such cases. We report here a case of iron deficiency anemia due to gastrointestinal blood loss which turned out to be due to a gastrointestinal stromal tumor (GIST) of jejunum on enteroscopy. The case highlights the pitfalls of conventional investigation modalities in detecting a small intestinal pathology and the need for more sophisticated imaging/endoscopic techniques in such cases.

Keywords: Obscure gastrointestinal bleeding, GIST, Enteroscopy

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INTRODUCTION

Gastrointestinal stromal tumors (GIST) are the most common mesenchymal tumors of the gastrointestinal tract. They occur most commonly in the stomach; but can also occur at other sites including small intestine. Tumors in stomach usually present with dyspeptic symptoms and are easily visualized endoscopically. Small intestinal tumors present with nonspecific symptoms like abdominal pain or with gastrointestinal bleeding symptoms. Most of these tumors are benign, with malignancy rate depending on size and histologic grading. They are adequately treated by resection. Resistant, high risk or malignant GISTs can be treated by tyrosine kinase inhibitors like imatinib & sunitinib in addition to surgery.

CASE REPORT

A 65 year old female who has been suffering from systemic hypertension and hypothyroidism came to the op with complaints of tiredness and melena of one month duration. There was no other symptoms related to any major systems and she did not have any post-menopausal vaginal bleeding.

On examination she was having pallor, koilonychia and glossitis. Vital signs were within normal limits. There was no generalized lymphadenopathy, hepatosplenomegaly or bleeding manifestations. All the basic systems were within normal limits.

With the available history and laboratory results a diagnosis of iron deficiency anemia due to gastrointestinal blood loss was put forth. An etiological workup to identify the bleeding source was carried out. An upper GI endoscopy revealed only antral gastritis which by itself could not explain this degree of anemia and melena. Colonic pathology was excluded by colonoscopy and a normal carcinoembryonic antigen (CEA) level. Imaging with both an ultrasound and a contrast enhanced CT scan failed to detect any intra-abdominal pathology. However the patient continued to have melena and her hemoglobin levels were showing a gradually falling trend. Hence a strong possibility of small intestinal pathology was suspected. Subsequently a balloon enteroscopy was done which revealed

Table 1. Biochemical workup

Test	Result	Test	Result
Hemoglobin	8.4 g/dL	ESR	33mm/hour
Total WBC count	8800/cu.mm	Serum iron	11ug/dL(60-180)
Differential WBC count	N60 L33 E1	Serum ferritin	2.6 ng/ml(15-150)
PCV	32%	LFT	WNL
MCV	78fL	Blood urea	28mg/dL
MCH	26pg	Serum creatinine	1.2 g/dL
MCHC	29g%	Serum B12	435pg/ml(239-931)
Platelet count	1.8 lakhs/cu.mm	T3/T4/TSH	WNL
Stool occult blood	++	Urine routine	No abnormality

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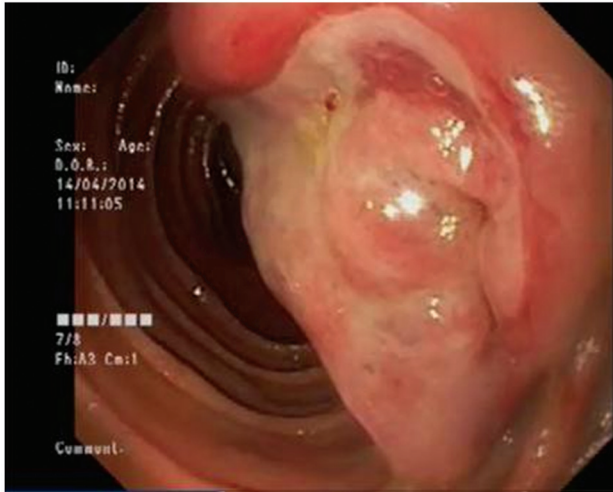


Figure 1. Enteroscopic view of the tumor



Figure 2. Resected specimen

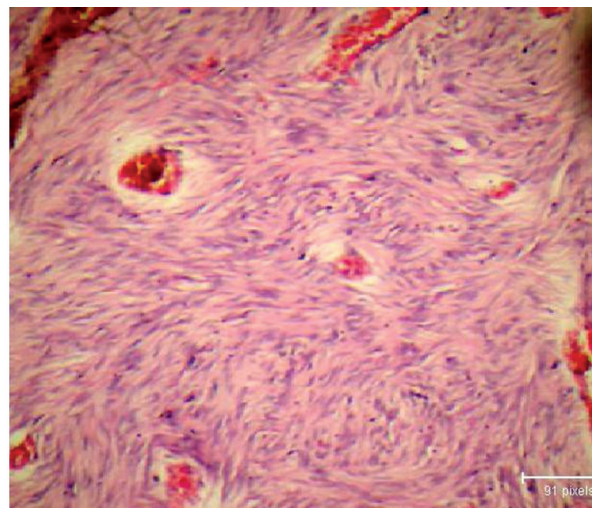


Figure 3. Microscopy of the specimen showing spindle cells

a vascular tumor in the jejunum (Figure 1). She was subjected to laparotomy. The portion of jejunum harbouring the tumor was resected (Figure 2). Histopathological examination of the tumor showed it to be a low risk GIST (Figure 3). The post-operative period was uneventful. She was given supportive care including hematinics. Post operatively she never reported of melena and her hemoglobin levels were showing a steady improvement.

DISCUSSION

Gastrointestinal stromal tumors or GISTs are the most common mesenchymal tumors specific to GIT.

Gastrointestinal stromal tumors (GISTs) are defined as cellular spindle cell, epithelioid, or occasionally pleomorphic mesenchymal tumors of the gastrointestinal tract that express the KIT (CD117, stem cell factor receptor) protein, as detected using immunohistochemistry¹

The annual incidence of these tumors varies between 10-15 cases per million population in different countries. No population based studies have been conducted in India estimating the incidence or prevalence of GIST. The tumor usually occur in adults in their fifth or sixth decade. They occur throughout the gastrointestinal tract with 60%-70% in the stomach, 25%-35% in small intestine, and less than 5% in rectum, esophagus, omentum, and mesentery.^{2,3} However some studies have also reported a higher incidence in small intestine than stomach⁴ while an Indian study⁵ reported almost equal incidence in these two sites.

In many cases these tumors are discovered incidentally during endoscopic, radiologic or surgical procedures. Otherwise they are diagnosed during evaluation of abdominal mass, pain or gastrointestinal bleeding.⁶ Studies have shown that GIST involving small intestine are more likely to present as GI bleeding than those in stomach which usually present with abdominal pain or dyspeptic symptoms. Small intestinal GISTs should always be considered in the differential diagnosis of obscure gastrointestinal bleeding where conventional endoscopic and imaging modalities have failed in localizing the source of bleeding. With the advent of single and double balloon enteroscopy as well as video capsule enteroscopy, the small intestine, which was a grey area, can be easily explored. Hence the earlier techniques of enteroclysis and sonde enteroscopy is being replaced by these techniques. In this case the lesion was detected by a single balloon enteroscopy. A study comparing balloon enteroscopy and capsule enteroscopy has found equal efficacy for both techniques with complementary role for each one in case the other technique fails.⁷

The reported chances of malignancy in GISTs vary widely in literature. The most important factors predicting malignant behavior were tumor size more than 10cms and mitotic index (>5 per hpf). In this regard two Indian studies reported higher incidence of high risk and intermediate risk GISTs than low

risk GISTs.^{5,8} Both these studies outweigh the lesser incidence of high /intermediate risk GISTs in western countries. GISTs in extra-gastric locations were having higher risk of recurrence also.

The treatment for low risk localized GISTs is primary surgical resection. Tumors having high risk features should be given imatinib in addition to surgical treatment. Such high risk cases should also be kept under follow up for early detection of recurrence.

END NOTE

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Conflict of Interest: None declared

Cite this article as: Baburaj P, Joseph TK, Hijaz PT. *In search of the Cause of Iron Deficiency Anemia. Kerala Medical Journal.* 2015 Mar 26;8(1): 38-40

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