Turk J Gastroenterol *2015; 26: 79-81*

Pyogenic granuloma in differential iron deficiency diagnosis

To the Editor,

Pyogenic granuloma (PG) is defined as a lobular benign capillary hemangioma that occurs in the skin, upper respiratory tract and mucosal surfaces of the oral cavity's. Apart from oral cavity, it is rarely seen in the alimentary tract. These cases have been predominantly reported in the esophagus and intestine (1). Although the etiological factors of PG infection include mechanical irritation and hormones, the mechanisms underlying its development remain controversial.

Here we report a rare case of gastric PG associated with chronic bleeding and iron- deficiency anemia. A 63 year old man, consulted our rheumatology outpatient clinic for chronic symmetric polyarthritis. In 1973, he underwent a partial gastrectomy due to peptic ulcer disease. The patient was admitted with chronic inflammatory symmetrical arthritis. High titers of rheumatoid factor and cCCP (Cyclic citrullinated polypeptide) were noted and rheumatoid arthritis was diagnosed. In addition, laboratory tests (Table 1), and peripheral blood smear findings were consistent with iron deficiency. Endoscopy was performed to make the differential diagnosis. A diminutive polyp was found on the posterior wall of the major curvature (Figure 1) for which polypectomy was performed. An endoscopic ultrasound (EUS) (Fujinon, Tokyo, Japan) was performed using linear echo-endoscopy before the polypectomy. The lesion was confirmed on EUS to be confined to the mucosa. There were no large blood vessels or vascular spaces within the lesion (Figure 2). Histological examination of the resected specimen showed capillaries of various sized with lobular proliferations accompanied by chronic and acute inflammatory infiltrates (Figure 3). The histological features were consistent with PG. Anemia was resolved by iron supplementation. The patient provided informed consent for the above mentioned diagnostic processes. Blood loss in the gastrointestinal system is one of the leading causes of iron- deficiency anemia. A detailed examination of our patient revealed no melena or hematemesis. Considering that his vital signs were stable and mean corpuscular volume value was low, we believed that the anemia was not acute but rather was due to chronic bleeding. Since our patient had

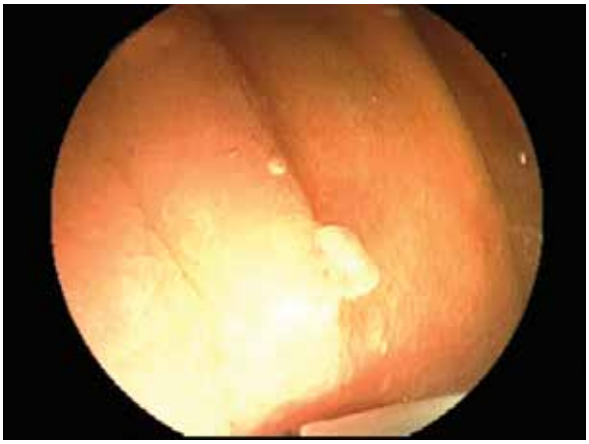

Figure 1. A diminutive polyp on the posterior wall of the major curvature.

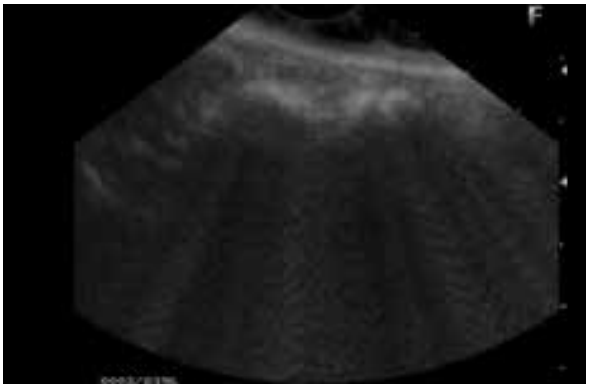

Figure 2. Endoscopic ultrasound revealed a sessile polyp originating from the mucosal layer. The deep echo layers were preserved and there was no evidence of intra or extramural lesions.

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Received: November 04, 2013 **Accepted:** December 02, 2013

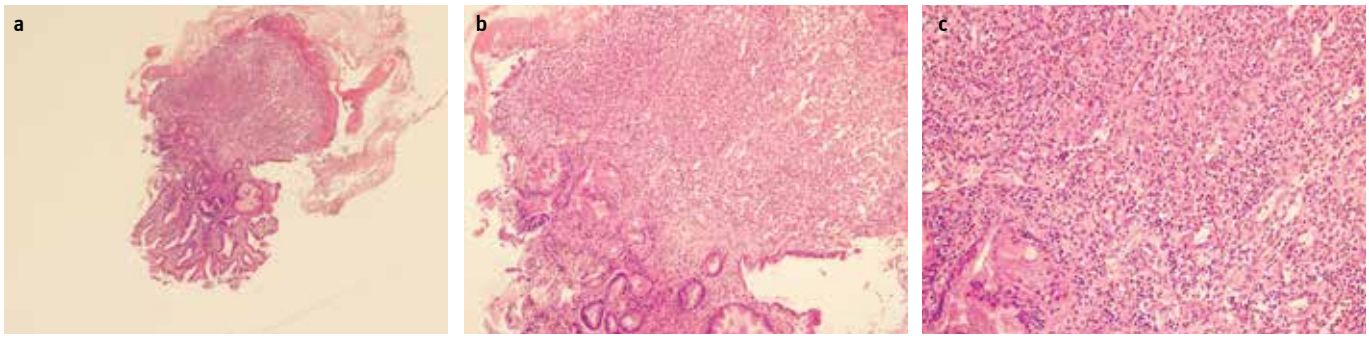

Figure 3. a-c. Lobular proliferations accompanied by acute and chronic inflammatory infiltrates (hematoxylin and eosin staining x 40) **(a)**, (hematoxylin and eosin staining x 100) **(b)**, (hematoxylin and eosin staining x 200) **(c).**

undergone an ulcer operation, gastric ulcer recurrence was a differential diagnosis. However, the reported no weight loss, stomachache, dysphagia or change in defecation habits. Especially after gastric bypass operations involving the duodenum, severe anemia can occur due to iron absorption disorders. Endoscopy revealed that the operation was performed using the Billroth II method. Furthermore, PG was found in the biopsy of the selected polyps.

Pyogenic granuloma is not a common cause of bleeding (2). The vascular nature of gastrointestinal lesions is the reason for chronic blood loss that, results in iron-deficiency anemia, which is known to be a significant warning sign of gastrointestinal tumors. It is easy to misdiagnose and mistreat gastrointestinal lesions since they have an unusual appearance. Few cases of PG in the digestive tract have been reported and they were specifically located within the ileum, esophagus and colon. Of these cases, only three occured in the stomach (1-3). Of the few cases of gastrointestinal PG in the literature, the age range was 31-71 years (mean 56 year) and there was a male dominance of 2:1. The lesions were mostly red polypoid type with nodules that may ulcerate (4).

Although gastrointestinal lesions are most commonly pedunculated, they can be sessile. Although lesions are typically limited to the mucosa as in our case, they may also spread to the submucosa or even to the serosa by moving beyond the lumen. Gastrointestinal lesions are typically solid and only one patient in our review had multiple lesions (>10) (5). Histological examinations are difficult due to lesion bleeding, erosion and fibrosis. Pathological examination of the lesions generally shows proliferation of lobular dilated capillaries. Stromal tissue becomes edematous as the inflammatory cells infiltrate. The ulcerated edges of the lesions typically have neutrophil dominance and deeper lesion layers are chronically infiltrated by inflammatory cells. Endoscopic biopsy samples may vary; a combination of granulation tissue, ulceration and inflammation can be seen or a lobular capillary structure can be seen. The resection of alimentary tract PG may be required since their hypervascular nature can lead to gastrointestinal bleeding. In fact, full resection may be optimal since it reduces the risk of recurrence. After lesion resection, a definitive diagnosis was made in almost all of the published case reports. In conclusion, we suggest that PG should be considered as a differential diagnosis in patients with gastrointestinal bleeding.

Table 1. Laboratory findings on admission

		Normal ranges
Leucocyte (10^3/µL)	9.5	4-10
Hemoglobin (g/ dL)	5.8	13.5-17.5
Hematocrit (%)	20	41-53
Thrombocyte (10^3/µL)	560	156-370
MCV (fL)	56.2	80.7-90.5
RDW (%)	21.1	11.8-14.8
Serum Iron (µg/dL)	6	31-144
Transferrin saturation (%)	1.6	
Ferritin (ng/mL)	9.31	21-274
Reticulocyte (%)	1.5	0.52-3.53
Haptoglobulin (mg/dL)	403	40-268
Rheumatoid factor (IU/mL)	165	0-30
Anti-CCP antibody (RU/mL)	>200	0-5
C-reactive protein (mg/L)	103	0.1-8.2

MCV: mean corpuscular volume; RDW: red cell distribution width; Anti-CCP: anti cyclic citrullinated polypeptides

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Dokuz Eylul University.

Informed Consent: Written informed consent was obtained from patient who participated in this study.

Peer-review: Externally peer-reviewed.

Author contributions: All authors contributed equally during the preparation of this manuscript.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

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