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An unusual association: gastric xanthelasma presenting with iron deficiency anemia: a case report

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Abstract

Background Gastric xanthelasma is a rare, benign lesion with uncertain clinical significance. Despite its asymptomatic nature, it may coexist with conditions like chronic gastritis and iron deficiency anemia.

Case presentation A 71-year-old Turkish male presented with iron deficiency anemia, chronic fatigue, and upper abdominal pain. Endoscopy revealed yellowish-white plaques (2–6 mm) on the antral mucosa, confirmed as gastric xanthelasma on histopathology. Concurrently, a rectal sessile polyp was excised during colonoscopy. The patient recovered following a 3-month course of oral iron supplementation and proton pump inhibitors. Follow-up endoscopy showed resolution of gastric lesions.

Conclusion This report underscores the diagnostic importance of endoscopy and biopsy in patients with unexplained anemia and highlights the potential association between gastric xanthelasma and ron deficiency anemia, warranting further research.

Keywords Gastric xanthelasma, Iron deficiency anemia, Chronic gastritis

Introduction

Gastric xanthelasma, first described in 1887 [1], is a rare and benign lesion with unclear clinical significance. These lesions may mimic malignancies, necessitating endoscopic biopsy and histopathological confirmation. Xanthelasma can be associated with chronic gastritis, *Helicobacter pylori* infection, diabetes mellitus, and hyperlipidemia, though its etiopathogenesis is poorly understood. Typically, the phenomenon occurs in normal causes, destroying its structure and stimulating neoplasm [2]. It occurs more frequently in older adults and women and is most commonly found in the stomach [3], with occasional involvement of the esophagus, duodenum, and colon.

Our case report describes a male patient with gastric xanthelasma and ron deficiency anemia (IDA), focusing on diagnostic challenges and management strategies. This case was prepared following the SCARE criteria. This case report was approved by the local institutional review board, and informed consent was obtained from the patient for publication of this case and accompanying images.

Case presentation

A 71-year-old Turkish male presented with upper abdominal pain, weakness, and fatigue. The patient had a history of diabetes mellitus (HbA1c: 7.2%, < 5.7% normal), 45 pack-years of smoking, and prior laparoscopic cholecystectomy for gallstones. He denied alcohol use. Family and psychosocial histories were unremarkable.

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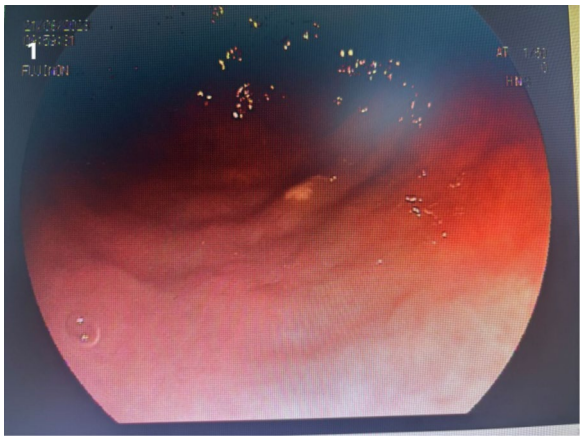

Fig. 1 Slightly elevated, irregularly edged, yellowish-white lesions (2–6 mm in size) are observed on the antral wall

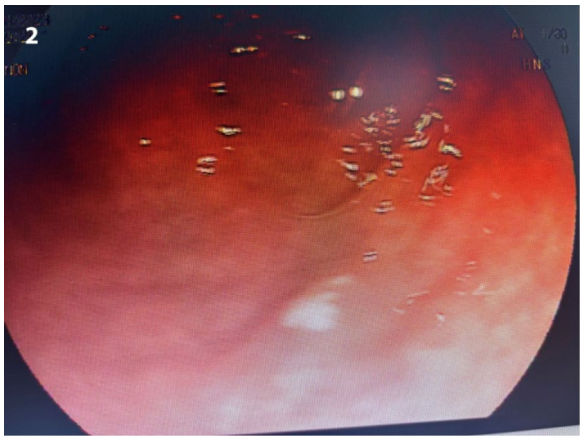

Fig. 2 Close-up endoscopic view of the lesion, showing its detailed characteristics

The clinical findings include minimal pallor observation on the skin and conjunctiva.

Laboratory results

Hemoglobin	10.8 g/dL	13.8–17.2 g/dL
Hematocrit	32.8%	40.7–50.3%
MCV	74 fL	80–100 fL
Ferritin	20 ng/mL	24–336 ng/mL
Total cholesterol	261 mg/dL	< 200 mg/dL
Triglycerides	189 mg/dL	< 150 mg/dL
HDL	45 mg/dL	> 40 mg/dL

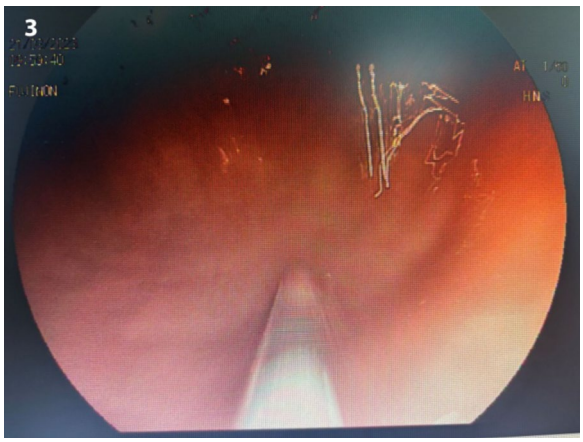

Fig. 3 The lesion was removed using a snare, and complete healing was observed thereafter, confirmed as xhantom

Diagnostic assessment

- Upper endoscopy revealed slightly elevated, irregularly edged, yellowish-white plaques (2–6 mm) on the antral mucosa (Figs. 1, 2, 3). Histopathology confirmed gastric xanthelasma and chronic gastritis with no evidence of *H. pylori* infection.
- Colonoscopy identified a small rectal sessile polyp, which was excised (Figs. 4, 5). Histology confirmed a hyperplastic polyp.
- Abdominal imaging [computed tomography (CT) and ultrasound] excluded malignancies.

Pathological findings included histopathology showing foamy macrophages within the lamina propria, with negative staining for cytokeratin AE1/AE3 (Figs. 6, 7, 8). Chronic gastritis without intestinal metaplasia or dysplasia was observed.

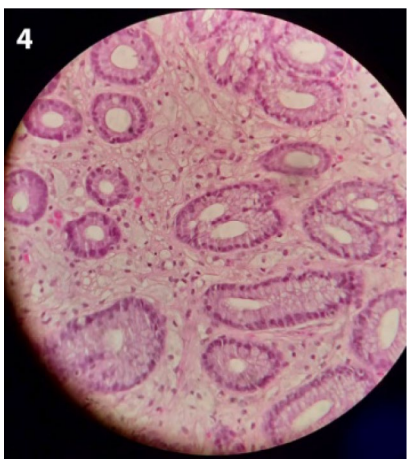

Fig. 4 Foamy macrophages are observed within the lamina propria, as shown in this hematoxylin and eosin stained section at 400× magnification

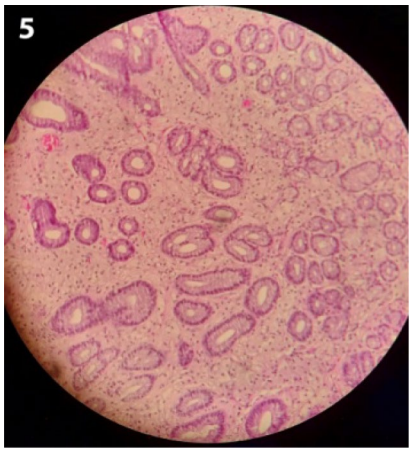

Fig. 5 Foamy macrophages are present within the lamina propria, as seen in this hematoxylin and eosin stained section at 200× magnification

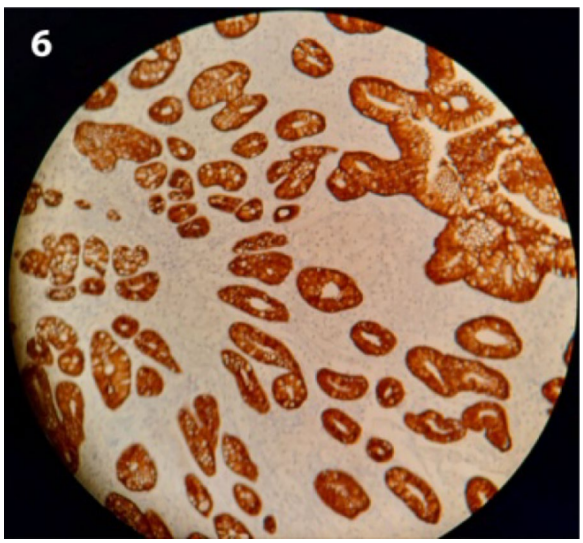

Fig. 6 Cytokeratin AE1/AE3 immunohistochemical staining at 200× magnification shows cytokeratin AE1/AE3-negative foamy macrophages within the lamina propria

Therapeutic intervention included the patient being treated with pantoprazole (40 mg daily) and a 3-month course of oral iron supplementation. The gastric lesions were removed by snare.

Follow-up included an endoscopy after 3 months showing complete resolution of the gastric lesions. Annual follow-ups were advised to monitor recurrence or progression.

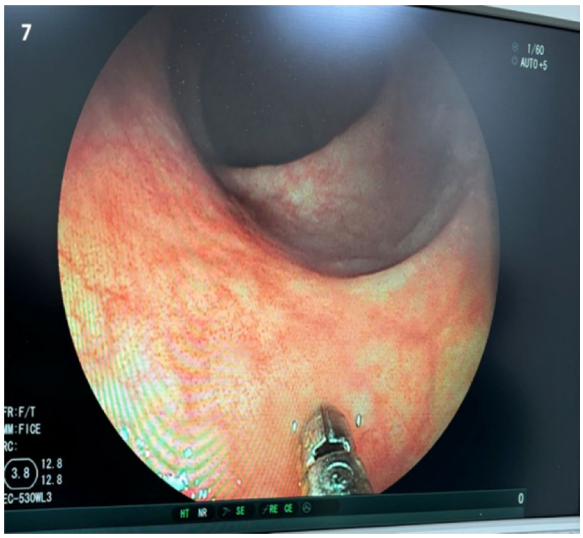

Fig. 7 The lesion in the colon was excised using biopsy forceps with complete removal and was confirmed as xhantom

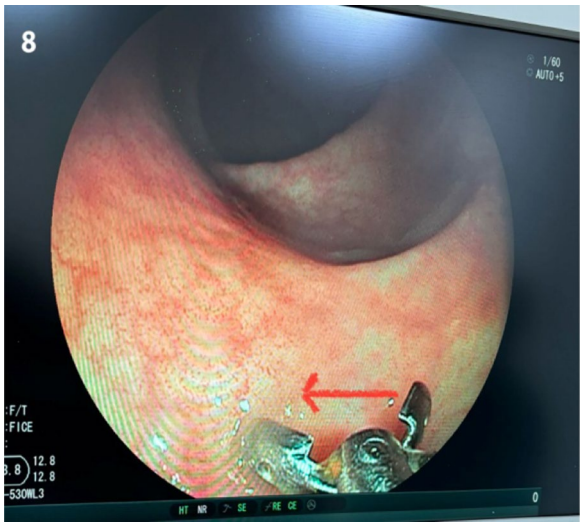

Fig. 8 The lesion in the colon was excised using biopsy forceps with complete removal and was confirmed as xhantom

Discussion

Xanthelasma in the gastrointestinal tract is rare. It is mainly reported in the stomach, with rare involvement of the duodenum and colon [2]. It is thought that gastric mucosa affected by certain pathological processes may be more prone to develop gastric xanthelasma. It is, therefore, important to look for other associated premalignant conditions [3]. Xanthelasma is thought to be more common with increasing age and more common in women [4]. It is thought to be less common in the colon and rectum [5].

A single xanthelasma in the antrum and a hyperplastic polyp in the rectum were present in our male patient. The natural history of gastric xanthelasma is unclear; it may resolve without intervention. In most cases, no treatment is necessary, but careful follow-up with endoscopy is required to monitor its behavior [6]. Reports associating gastric xanthelasma with IDA are limited. In our case, anemia resolved after treating xanthelasma and chronic gastritis, suggesting a potential link. Similar findings were reported [7]. Further studies are required to clarify this association. Endoscopic resection and ablation are effective treatments for xanthelasma, especially when concurrent lesions are present [8]. Our patient's complete recovery following lesion removal and iron supplementation aligns with existing management strategies. The xanthelasma in the antral stomach and the hyperplastic sessile polyp in the colon were completely excised followed by cautery to cure. Xanthomas of the stomach and oesophagus as well as xanthomas of the colon are incidental lesions. In our case, there were no symptoms of an involvement of the lower gastrointestinal tract. The gross appearance of xanthelasma can sometimes mimic gastric malignancies such as signet cell carcinoma and carcinoid tumors, but histology or immunohistochemistry can distinguish these conditions from xanthelasma [8].

Biopsies taken from the surrounding area were consistent with chronic gastritis. Macroscopic xanthoma-like lesions were found incidentally. However, the upper gastrointestinal lesions were pathologically consistent with xanthelasma, but no xanthoma-like features were observed on biopsy examination of lesions in the colon.

In literature, it is reported that the incidence of gastric xanthelasma increases with age, with the mean age of affected patients being 71 years old. Male predominance was present in a large study [8].

An association between gastric xanthelasma and multifocal atrophic gastritis and/or intestinal metaplasia was reported [9] in an observational case–control study. However, in our case, intestinal metaplasia was not found on histopathological examination. Furthermore, xanthelasma may be an indication of the presence of gastric malignancy [7], but no evidence of dysplasia or malignancy was found in our case. Endoscopy magnification with narrow-band imaging is commonly used in the identification of gastric xanthoma because this method can magnify the image to see it very clearly. Biopsies during upper gastrointestinal (GI) endoscopy (Fig. 1, 2, 3) are essential for the diagnosis of gastric xanthoma and allow for the rule-out of gastric tumors [10]. A colonoscopy identified a small rectal sessile polyp, which was excised [Figs. 4, 5). Histology confirmed a hyperplastic polyp.

Human macrophage markers are favorable for the immunohistochemical assessment of biopsied samples (Figs. 6, 7 and 8) from xanthomatous lesions, while cytokeratins are negative in the absence of gastric tumors [11]. In our case, cytokeratin AE1/AE3 was negative, and signet ring cell carcinoma was excluded. Isomoto *et al.* reported a close relationship between xanthelasma, *H. pylori* infection, and atrophic gastritis and showed that the prevalence of *H. pylori* infection was significantly higher in patients with xanthelasma than in patients without [10], but no evidence of *H. pylori* infection was found in our case. Gastric xanthelasma is rarely associated with iron deficiency anemia. Sun *et al.* [12] reported a case of gastric xanthelasma associated with iron deficiency anemia in a patient with a history of chronic deep vein thrombosis on warfarin and peptic ulcer disease for which he underwent partial gastrectomy. In our case, there was no history of surgery on the upper/pelvic intestinal tract. In our case report of iron deficiency anaemia associated with gastric xanthelasma, a complete work-up including gastrointestinal imaging was performed to exclude alternative sources of gastrointestinal bleeding. We believe that the presence of chronic gastritis in the background would not explain the anemia, as there are patients with chronic gastritis without anaemia. There are very rare case reports in the literature of xanthelasma associated with iron deficiency anaemia.

While associations with chronic gastritis, *H. pylori*, and aging are documented, the link with IDA is less established. Our patient's anemia resolved after treating the xanthelasma and chronic gastritis. This aligns with limited reports suggesting a possible association.

Treatment options for xanthelasma include endoscopic resection and ablation, though conservative management with follow-up is often sufficient. No dysplasia or malignancy was found in this case, but regular monitoring remains essential.

Conclusion

While gastric xanthelasmas are benign, their resemblance to malignancies and potential association with anemia demand careful evaluation. This case underscores the importance of thorough diagnostic work-up, regular follow-up, and consideration of broader contributing factors to anemia. Further studies establishing a causal link between gastric xanthelasma and IDA are needed.

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Author contributions
YD, AMD, and AE gathered the patient's data and drafted the manuscript. YD, AMD, and AE contributed to editing and revising the manuscript. All authors read and approved the final manuscript.

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Availability of data and materials
All data generated during this study are included in this published article and its Supplementary Information files.

Declarations

Ethics approval and consent to participate
This case report was approved by the local institutional review board, and informed consent was obtained from the patient to publish this case and accompanying images.

Consent for publication
Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests
The authors declare no competing interests.

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