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RECTAL GASTRIC HETEROTOPIA: A RARE CAUSE OF LOWER GASTROINTESTINAL BLEEDING

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ABSTRACT

Heterotopia is defined as the presence of normal tissue type at non-physiological sites. Gastric heterotopia (GHT) is the most reported epithelial heterotopia. It can occur anywhere in the gastrointestinal tract. Most cases are described in the esophagus, duodenum and Meckel's diverticulum. It's rarely observed in the rectum and anus. In this report, we present a case of 48 year old women with a 3cm ulcer in the rectum that was reported histologically as antral type heterotopic gastric mucosa without amelioration to proton pump inhibitors and who underwent endoscopic resection for definite treatment.

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INTRODUCTION

Gastric heterotopic mucosa is the presence of normal gastric mucosa outside the stomach. It coexists with an original tissue in its correct anatomical site. The gastric mucosa is well demarcated from the surrounding mucosa. Its incidental finding in the rectum is uncommon. Gastric heterotopia can be congenital or acquired. It's classified as a heteroplasia during organogenesis or metaplasia during epithelial repair process. It is best identified by endoscopy, where variable shapes (polyp, ulcer, diverticulum) and sizes are observed. Histopathology is needed for an accurate diagnosis. We describe the case of 48 year old women who was found to have gastric heterotopia in the rectum revealed on colonoscopy after bowel habit changes and rectal bleeding.

CASE REPORT

A 48 year-old woman was referred for colonoscopy due to rectal tenesmus and bleeding. Colonoscopy was performed and showed at 2 cm from the anal verge, a 3 cm ulcer, covering 25% of the circumference of the posterior wall of the rectum (Fig 1), which was reported by histology as antral type

heterotopic gastric mucosa, *Helicobacter pylori* organisms was not seen. Intestinal metaplasia was absent (Fig 2). A second look rectoscopy was performed after 3 months of PPI treatment without amelioration. The patient underwent en bloc polypectomy with EMR (Endoscopic Mucosal Resection) technique (Fig 2). Histology showed antral gastric mucosa with no signs of atypia (Fig 3).

DISCUSSION

Heterotopic gastric mucosa is the most reported epithelial heterotopia. Its finding beyond the ligament of Treitz is rare, and very uncommon in the rectum and anus (Srinivasan *et al.*, 1999). Some cases of GHT in the rectum have been described since the first reported case by Ewell and Jackson in 1939 (Iacopini *et al.*, 2016). Pathogenesis of heterotopia is defined by the presence of a particular normal tissue at foreign non-physiologic sites (Srinivasan *et al.*, 1999). GHT can be considered heteroplasia or metaplasia according to the process that occurred at the beginning. Heteroplasia is defined as a congenital type of GHT. It is the failure of stomach descent during the development. This explains the presence of GHT in the foregut (Heterotopic gastric mucosa of the gastrointestinal tract, 2014). Distally to the foregut, the presence of gastric mucosa is best explained by the ability of pluripotent endodermal cell, in the GI tract, to change and develop to any cell type (Willis, 1968; Vieth *et al.*, 2005).

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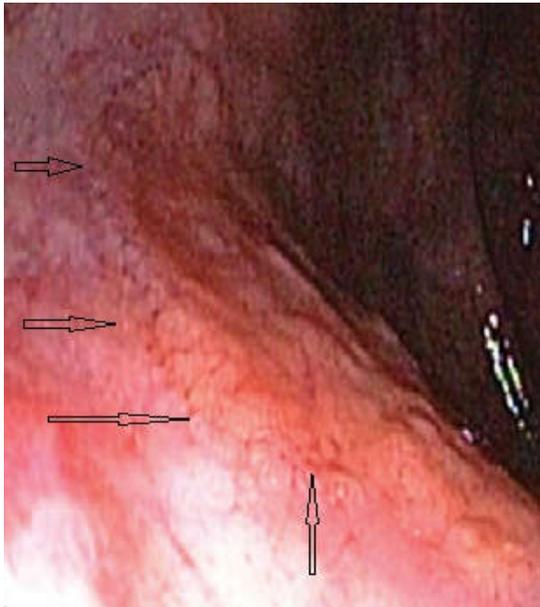


Fig1: Heterotopic gastric mucosa in the rectum



Fig 2: Endoscopic Mucosal Resection (EMR)

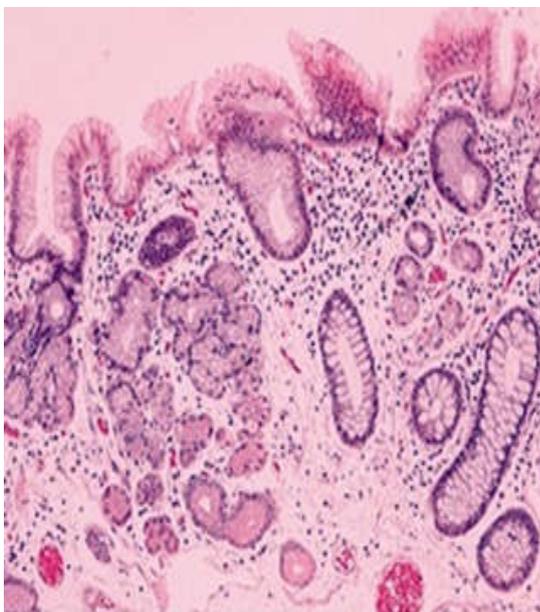


Fig. 3. View of border between gastric and rectal epithelium

Metaplasia is defined as an acquired type of GHT due to an inflammation or injury in another site than the stomach. It is an adaptive response of the organ of origin that appears as gastric mucosa on histopathology (Srinivasan *et al.*, 1999). Histologically, a sharp difference is highly noted between these two types of GHT. Heteroplasia is characterized by the presence of full mucosal thicknesses of gastric epithelium and glands. Metaplasia consists of faveolar-type epithelium and original tissue (Iacopini *et al.*, 2016). The pathophysiology of GHT is explained by these two theories. The natural pathological pathway of this entity is not well defined. Typically, GHT is identified by endoscopy as an ulcer, polyp or diverticula. Different shape and size exist. The Paris Classification extensively describes the morphology of gastric heterotopia (Participants in the Paris Workshop, 2015). The endoscopic morphology of gastric heterotopia can vary from polypoid pedunculated or sessile, non-polypoid (most frequent) and ulcerated lesion. A technetium-99m pertechnetate scan can be an adjunct for detecting other heterotopic foci prior to surgery (Ko *et al.*, 2013). Histological differentiation is needed between gastric heterotopia presenting as an ulcer in the rectum and solitary rectal ulcer, because using steroid containing enema for the treatment of solitary rectal ulcer can worsen the rectal gastric heterotopia. Definitive diagnosis is confirmed by histopathology (Srinivasan *et al.*, 1999; Vieth *et al.*, 2005). It can vary from, fundal (most frequent), mixed fundal and antral, and antral. Cardiac and ECL cells are the rarest histological findings (Toshihiro Kitajima *et al.*, 2013).

The presence of H pylori can be a surprising finding (Peyman Dinarv and *et al.*, 2017). A complete eradication may be obtained and it can lead to symptoms resolution (Kim *et al.*, 2012). GHT is frequently observed in the esophagus, duodenum and Mechel's diverticulum (Srinivasan *et al.*, 1999). It is also reported in the nasopharynx, the tongue, the gallbladder, the small intestine, the bladder, the biliary tract and some other exceptional locations like the scrotum, the mediastinum and rectum (Ulrich Peitz *et al.*, 2017; De Angelis *et al.*, 2004). GHT is found in the postero-lateral wall of the rectum between 3 and 8 cm from the anal verge. The most common symptom is painless rectal bleeding (Srinivasan *et al.*, 1999). Men are more affected than women with a male/female ratio = 20/7 (Srinivasan *et al.*, 1999). The median age at presentation is 22, but all ages can be affected (Iacopini *et al.*, 2016). Less commonly reported symptoms were, colic, pruritus, change in bowel habits, bloating and diarrhea. Older patients were mostly asymptomatic and the discovery of gastric heterotopia was incidental. A higher prevalence of complicated gastric heterotopia was reported in symptomatic patients (Iacopini *et al.*, 2016). Major reported complications of gastric heterotopia in the rectum are ulceration, intussusception, massive GI bleed, recto-vesical fistula, perianal fistula and bowel perforation (Iacopini *et al.*, 2016). GHT can progress to malignancy but the rate is unknown (Ulrich Peitz *et al.*, 2017); 21 cases of degeneration of gastric heterotopia of the proximal and distal esophagus into adenocarcinoma were reported but none in the rectum (De Angelis *et al.*, 2004). Treatment may be done with PPIs and H2 antagonist which can reduce the symptomatology (Iacopini *et al.*, 2016). Endoscopic or surgical ablation is a curative approach in the majority of cases and the only way to avoid complications and the possible malignant transformation. For endoscopic treatment, EMR (Endoscopic Mucosal Resection) and ESD (Endoscopic Sub mucosal Dissection) can be an

effective approach to avoid surgery in non-polypoid lesions not amenable for conventional snare resection approach (Iacopini *et al.*, 2016). Trans-anal surgery is performed in case of endoscopic resection failure, and for complicated large lesions associated with fistula, ulcer and or perforation.

Conclusion

Gastric heterotopia is a rare congenital finding in the rectum. Chronic ulcer, stenosis, recto-vesical fistula, or malignancy are the complications resulting directly from the physiological activity of the ectopic gastric glands. However, it should be considered in patients presenting with rectal bleeding. Incidental finding of this lesion was reported in elderly patients. Medical therapy with PPIs and H2 antagonists provide symptomatic relief, but definitive therapy is achieved by endoscopic or surgical resection of the lesion.

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