Gastric inverted hyperplastic polyp: A rare cause of iron deficiency anemia

Jin Tak Yun, Seung Woo Lee, Dong Pil Kim, Seung Hwa Choi, Seok-Hwan Kim, Jun Kyu Park, Sun Hee Jang, Yun Jung Park, Ye Gyu Sung, Hae Jung Sul

Gastric inverted hyperplastic polyp (IHP) is a rare gastric polyp characterized by the downward growth of hyperplastic mucosal components into the submucosal layer. Macroscopically, a gastric IHP resembles a subepithelial tumor (SET); as a result, accurately diagnosing gastric IHP is difficult. This issue has clinical significance because gastric IHP can be misdiagnosed as SET or as malignant neoplasm. In addition, adenocarcinoma can accompany benign gastric IHP. Although in most cases, gastric IHPs are asymptomatic and are found incidentally, these polyps may cause anemia secondary to chronic bleeding. Here, we report one case involving gastric IHP accompanied by chronic iron deficiency anemia that was successfully managed using endoscopic submucosal dissection.

Key words: Stomach; Hyperplasia; Polyp; Anemia
At admission, a physical examination produced unremarkable findings. Complete blood count results indicated a white blood cell count, hemoglobin level, and platelet count of 5900/mm$^3$, 6.5 g/dL, and 497000/mm$^3$, respectively. The patient's anemia was diagnosed as IDA and her stool was negative for occult blood. Blood chemistry results were unremarkable. An endoscopic examination revealed a 1.5 cm SET on the greater curvature (GC) side of the lower body. This tumor, which had increased in size since the previous examination, was covered with normal mucosa exhibited irregular, hypervascular changes and a central orifice at its surface (Figure 1B). Endoscopic forceps biopsy results indicated chronic gastritis with intestinal metaplasia. A colonoscopic examination produced unremarkable findings. Endoscopic ultrasonography (EUS) revealed a 13.2 mm × 11.2 mm heterogeneous hypoechoic tumor in the submucosal layer of the gastric wall (Figure 2A). Abdominal contrast-enhanced computed tomography (CT) indicated the presence of a 1.5 cm, oval-shaped enhancing mass in the stomach, on the GC side of the lower body (Figure 2B). Because this lesion could have been a cause of the patient's IDA and because we wished to obtain an appropriate diagnosis, we decided to respect the mass in question using ESD. Grossly, the resected specimen measured 5.0 cm × 3.0 cm.
and included a well-circumscribed 1.5 cm polypoid lesion (Figure 2C). Histologically, the lesion mainly consisted of inverted proliferating columnar cells and was primarily composed of hyperplastic foveolar-type glands; focal cystic dilatation, inflammatory cells, and smooth muscle bundles in the stroma were observed (Figure 3). The pathologic diagnosis was consistent with gastric IHP. No architectural or cytological atypia were detected.

The patient was discharged following endoscopic treatment of gastric IHP; 5 mo later, the patient’s hemoglobin had normalized to 12.4 g/dL, and anemic symptoms such as general weakness and dizziness had disappeared. A follow-up endoscopic examination revealed a post-ESD scar with a converging fold on the GC side of the lower body (Figure 2D).

**DISCUSSION**

Gastric polyps can be classified by morphology as either protruding or inverted. Most gastric polyps are protruding, whereas inverted gastric polyps are rare. Gastric IHP is characterized by the marked endophytic proliferation of foveolar-, pyloric-, or fundic-
Gastric inverted hyperplastic polyp (IHP) is a rare gastric polyp characterized by the downward growth of hyperplastic mucosal components into the submucosal layer. It is difficult to diagnose accurately without endoscopic resection and pathological investigation because of the polyp’s inverted growth into the submucosal layer and the existence of extremely few cases. Gastric IHP can cause symptoms such as anemia and can be ignored by an inexperienced endoscopist. Therefore, it is important to recognize the clinical significance of these lesions and consider treatment. We have reported a case of gastric IHP accompanied by chronic IDA that was successfully managed using ESD.

**Case characteristics**
A 64-year-old woman presented with several year history of dizziness and general weakness that had recently become aggravated.

**Clinical diagnosis**
An endoscopic examination revealed a 1.5 cm subepithelial tumor on the greater curvature (GC) side of the lower body.

**Differential diagnosis**
Carcinoid, Ectopic pancreas, Granular cell tumor, Leiomyoma, Lymphoma.

**Laboratory diagnosis**
Hemoglobin level was 6.5 g/dL and all other labs were within normal limits.

**Imaging diagnosis**
Abdominal CT indicated the presence of a 1.5 cm, oval-shaped enhancing mass in the stomach, on the GC side of the lower body and endoscopic ultrasonography revealed a 13.2 mm × 11.2 mm heterogeneous hypoechoic tumor in the submucosal layer of the gastric wall.

**Pathological diagnosis**
Gastric inverted hyperplastic polyp (IHP).

**Treatment**
Endoscopic submucosal dissection (ESD).

**Related reports**
Gastric IHP is a rare gastric polyp characterized by the downward growth of hyperplastic mucosal components into the submucosal layer. It is difficult to diagnose accurately without endoscopic resection and pathological investigation. Rarely, it may manifest as anemia secondary to chronic bleeding and is related with dysplasia and adenocarcinoma.

**Term explanation**
ESD is a well-established technique of endoscopic resection that allows for en bloc removal of GI epithelial lesions.

**Experiences and lessons**
Gastric IHP can cause symptoms such as anemia and can be ignored by an inexperienced endoscopist. Therefore, it is important to recognize the clinical significance of these lesions and consider treatment.

**Peer-review**
The manuscript is modern, well conceived and well written. The iconography is very comprehensive and discussion is exhaustive.

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Yun JT et al. Gastric inverted hyperplastic polyp with anemia

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