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CT Findings of a Gastric Inflammatory Fibroid Polyp Manifesting as Unexpected Growth: A Case Report[1]

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Gastric inflammatory fibroid polyps (IFP) are rare benign entities that are usually encountered in the gastric antrum. The authors report the CT findings of a gastric IFP case experiencing marked growth over a five-month period. An initial CT revealed a polypoid wall thickening of about 3.5×2.5 cm in the gastric antrum. A follow-up CT performed five months later revealed a cauliflower-like submucosal mass of about 8× 5 cm. The mass was surgically excised and confirmed as an IFP. The authors suggest that when an evolving cauliflower-like submucosal lesion of the stomach is detected, an IFP should be considered in the differential diagnoses.

Index words : Inflammation
Tomography, X-ray computed
Stomach

Inflammatory fibroid polyps (IFPs) are non-neoplastic cellular proliferations that originate from the submucosa, and are histologically composed of fibrous tissues, blood vessels, and an inflammatory cell infiltrate containing a high percentage of eosinophils within an edematous and collagenous stroma (1). IFPs are most frequently found in the gastric antrum and the small bowel (1). Although the pathogenesis of gastric IFPs remains uncertain, some authors have proposed that they result from immunological reactions to several irritations; in particular, they may be related to Helicobacter pylori infection (2, 3).

Several reports on gastric IFPs have described its endoscopic findings; however, few have reported on its CT findings (1, 4). To the best of our knowledge, no previous report has been issued on the CT findings of a gastric IFP showing morphological changes. Here, we report the CT findings of a case of gastric IFP that demonstrated marked growth over a five month period.

Case Report

A 43-year-old man with chronic renal failure who had undergone chronic ambulatory peritoneal dialysis for four years presented with abdominal pain that had been persisting over the previous two days. Upon admission, the patient underwent a multi-detector CT scan to evaluate for peritonitis. A CT scan incidentally detected a hypervascular mass with a maximum diameter of about 3 cm in the right kidney without any finding of peritonitis, as well as polypoid wall thickening measuring about 3.5×2.5 cm in the gastric antrum (Fig. 1A). The patient underwent a laparotomy and the excised mass on the right kidney was confirmed to be renal cell carcinoma. Because the patient did not have any gastric symptoms

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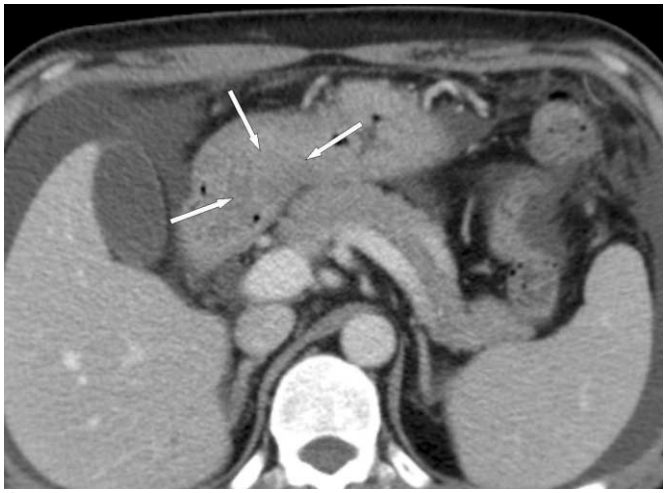

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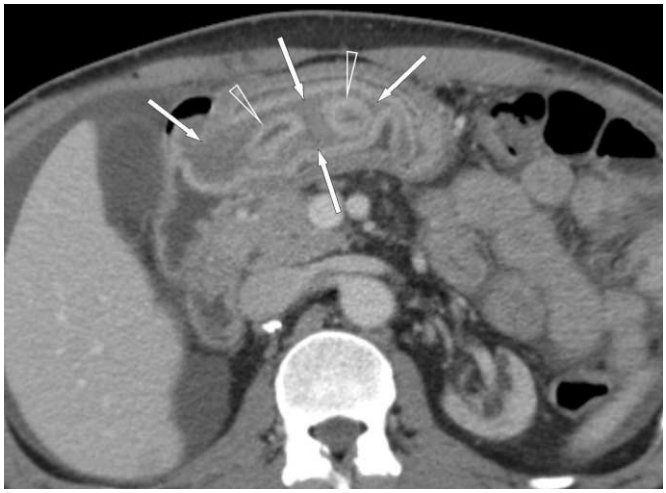

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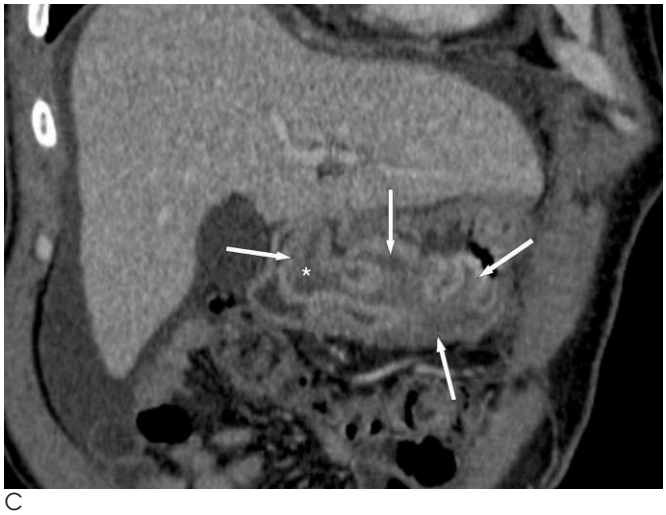

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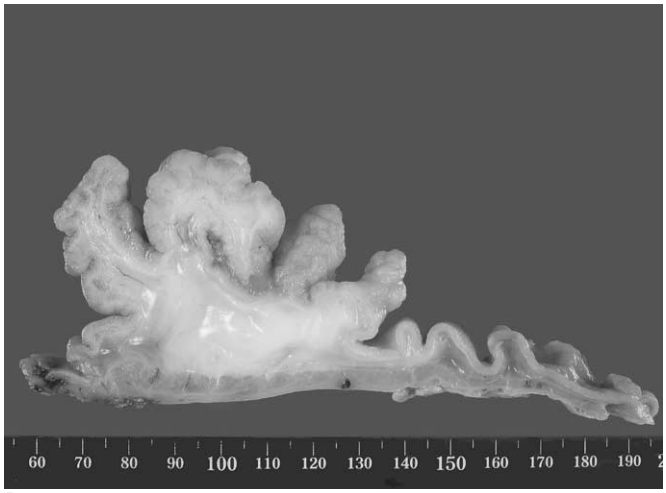

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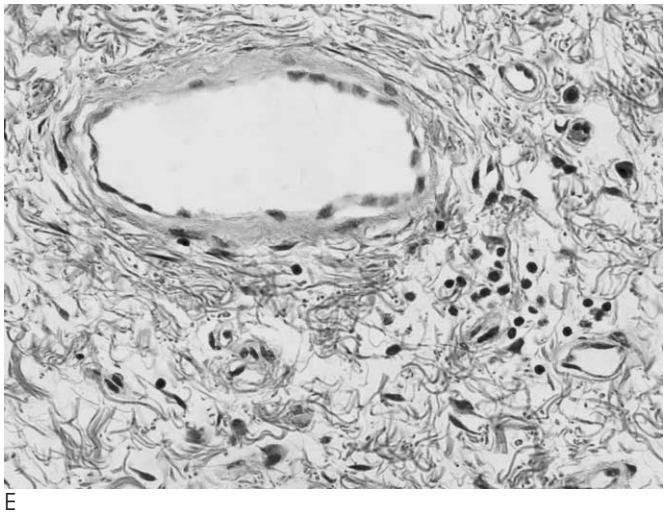

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Fig. 1. A 43-year-old man with an inflammatory fibroid polyp experiencing unexpected growth.

A. A contrast enhanced axial CT image reveals suspect polypoid wall thickening (arrows) in the posterior aspect of the gastric antrum. Note the ascites due to the chronic ambulatory peritoneal dialysis.

B, C. A follow-up contrast enhanced axial CT image (B) and oblique coronal reformatted image (C) obtained 5 months later reveals a large intraluminal protruding hypodense mass (arrows) with a portion (asterisk in C) that prolapsed into the duodenal bulb. The mass was covered with well-enhanced mucosa. Note the enhancing rim within the mass (open arrowheads in B) indicating coronally oriented mucosa in this axial scan.

D. A cut surface of the specimen shows a cauliflower-like polypoid mass associated with elevated and thickened mucosal folds. The mass was centered in submucosa and was mainly composed of whitish fibrosis and edema.

E. A photomicrograph of the histological specimen reveals vascular and fibroblastic proliferation appearing as whorl-like arrangements around blood vessels. Also, the authors note polymorphic inflammatory cell infiltrations, including eosinophils and lymphoplasma cells (H & E stain, ×400).

at the time, the gastric lesion was not evaluated.

However, five months later, the patient was hospitalized due to five days of vomiting and epigastric discomfort. An endoscopy revealed a lobulated, intraluminal polypoid mass located at the antrum on the greater curvature side. No ulceration or bleeding was noted. A subsequent CT scan revealed a cauliflower-like intraluminal protruding mass of about 8×5 cm, which prolapsed to some extent into the dilated duodenal bulb. The mass was visualized as a homogeneous hypodense submucosal lesion, and was covered with well-enhanced mucosa (Fig. 1B, C).

The patient was referred to surgery due to a risk of gastric outlet obstruction. A partial gastrectomy was performed, which revealed a large cauliflower-like polypoid mass at the antrum of the greater curvature. The gastric pyloric ring and duodenal bulb were dilated; possibly from recurrent prolapse of the mass into the duodenal bulb. The cut surface of the mass revealed its submucosal location with a whitish fibrotic and edematous composition, as well as its association with the mucosal fold elevation and thickening (Fig. 1D). The microscopic examination showed vascular and fibroblastic proliferation with polymorphic inflammatory cell infiltrations, including eosinophils and lymphoplasma cells (Fig. 1E). As per the description, the final diagnosis was an IFP.

Discussion

IFPs are rare benign lesions of the digestive tract which arise from the deep mucosa and submucosa of the digestive wall (3, 5). Because of its histological findings, IFPs has been referred to as eosinophilic granuloma, hemangiopericytoma, fibroma, submucosal fibroma, inflammatory pseudotumor, and myxoma (1, 6, 7). Helwig et al. (8) first designated this lesion as an IFP because of its polypoid nature and fibrous vascular composition. Although its precise etiology and pathogenesis remain unclear, it has been postulated that IFPs are related to infection, allergies, previous surgery, or trauma (4). One theory is that localized damage to mucosa can incite an inflammatory response in the adjacent submucosa, and stimulate the formation of a polypoid mass (2). Recently, several reports have suggested that a Helicobacter pylori infection can lead to the formation of IFPs (2, 3). Thus, whatever its origin, an IFP is not a neoplastic condition, but rather a benign lesion with no known risk of malignant degeneration.

Although the etiology of the formation of a gastric IFP, in our case, is not presumptive, we consider that the observed unexpected growth was probably related to surgery (e.g., nephrectomy). Because IFPs are likely to occur via a reactive process, they may grow a certain period of time. Shigeno et al. (9) reported that a large gastric IFP, which showed incarceration at the time of prolapse into the duodenal bulb, could cause necrosis and depletion of the mucosal surface of the mass and result in concurrent marked morphological changes and size reductions. However, in our case, the mass showed a marked increase in size and no necrosis or ulceration, even though it was relatively large and had a history of recurrent prolapse into the duodenal bulb.

An extensive review of the radiological literature revealed no specific CT descriptions of gastric IFPs, although the findings of our case are similar to those of a submucosal lesion. Fuke et al. (4) described the CT findings of a gastric IFP as those of an irregular enhancing protruding mass covered with well-enhancing mucosa, reflecting a submucosal lesion. Therefore, the CT findings of a gastric IFP most closely resemble those of lesions of submucosal origin, such as, leiomyoma, gastrointestinal stromal tumors, and a heterotopic pancreas (1, 4). In our case, the CT findings, with regards to its submucosal location, were similar to those reported previously (4). However, unlike the description provided by Fuke et al. (4), the lesion interior was hypodense, which probably reflected the presence of fibrosis and edema rather than of vessel components. In addition, in our case, the lesion showed an evolving cauliflower-like submucosal appearance, which is somewhat different to those of other submucosal lesions that were reported to have round or ovoid contours (10).

In conclusion, we report a case of a gastric IFP with a cauliflower-like contour that demonstrated a marked increase in size over a five-month period. Based on the CT findings of our case, we suggest that a cauliflower-like submucosal lesion with a changing nature should be considered an additional useful finding in the diagnosis of gastric IFPs.

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갑작스런 성장으로 발현된 위에 생긴 염증성섬유성용종의 CT소견: 1예 보고[1]

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위에 생기는 염증성섬유성용종은 위의 유문동에 주로 생기는 드문 양성종양이다. 저자들은 5개월 동안 갑작스럽게 커진 위의 염증성섬유성용종 1예를 경험하였기에 CT 소견을 보고하고자 하며, 아직까지 이러한 보고는 찾기가 어렵다. 초기 CT소견은 위의 유문동에 3.5×2.5 cm 크기의 폴립양의 위벽비후로 보였고, 5개월 후에 시행한 CT 소견에서는 8×5 cm 크기의 배추꽃 모양의 점막하 종양으로 발현되어 수술시행 후 염증성섬유성용종으로 확진되었다. 따라서 CT소견에서 위에 배추꽃 모양의 점막하 종양으로 보이면서 추적 관찰에서 모양이 변하는 양상으로 보이면 염증성섬유성용종의 가능성을 반드시 고려해야 한다.