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Case Report

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Gastroduodenal intussusception secondary to gastric signet ring cell carcinoma: a case report and review of the literature

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The presentation of this case arises from the rareness of gastroduodenal invagination (GI) which occurs secondary to malignant gastric tumors. Gastroduodenal invagination refers to the invagination of a portion of the stomach into the duodenum. GI is a rare occurrence which is generally benign but may rarely occur secondary to gastric carcinomas. Common radiographic signs at gastroduodenal intussusception are foreshortening and narrowing of gastric antrum, covering or telescoping mucosal folds in the antrum or duodenum, prepyloric collar-shaped outpouchings, widening of the pyloric channel, the appearance of duodenal mucosal folds like a coil spring, and expansion of the duodenum with an accompanying intraluminal mass (1,2). The coil spring pattern, which is a characteristic of intestinal intussusception, is not a major feature. It may result from an invagination which arises from the greater curvature of the gastric mass. It may also be as a result of anatomic anomalies and gastric surgeries. A single-case study reported that invagination has no connection with the gastric mass and that it may occur secondary to innervation (3). Nevertheless, there are no typical symptoms in GI to confirm the preoperative diagnosis. Therefore, the diagnostic evaluation is only dependent on the patients' abdominal signs which should be examined in the presence of a radiologist.

Case Report

A 91-year-old woman is reported, who had presented with the signs of subacute gastrointestinal obstruction. An abdominal CT was obtained to evaluate the gastrointestinal obstruction. The patient had been suffering from nausea, constipation, epigastric pain, and distention for the last one month. Physical examination revealed a palpable mass in the right lower quadrant along with abdominal tenderness. The patient had fecaloid discharge at nasogastric lavage. In direct abdominal graph, the patient presented with air-fluid levels and clinical features of ileus. Relevant laboratory findings were as follows: HGB (11.1), HCT (31.8), MCV (84.5), MCH (30.6), MCHC (35.5), RDW (15.3), PLT (160). The abdominal CT with MDCT visualized the invagination of a portion of the stomach into the duodenum. A gastric mass was detected in the invaginated area. In endoscopic evaluation, no pathology was observed in the stomach, cardia, and

fundus mucosa. The corpus mucosa showed a ridge surface structure. There was an impression of ulcerovegetan mass in the antrum causing an almost complete obstruction. The invagination of the remaining stomach into the second and third sections of the duodenum and the pylorus was detected (Figure 1,2). Samples were obtained from the mass for biopsy. The biopsy results confirmed the presence of signet ring cell gastric cancer. The patient was discharged since she declined to receive treatment.

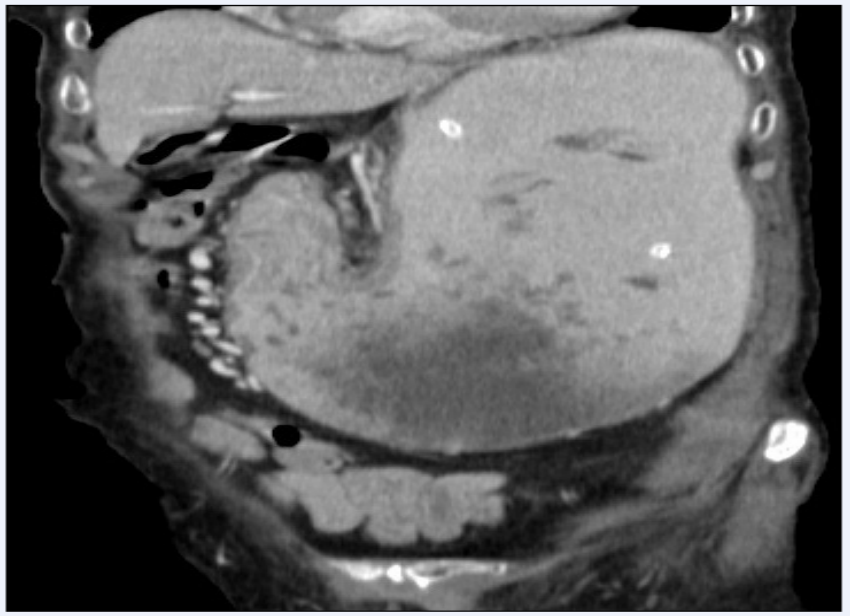

Figure 1. Coronal reformatted abdominal CT shows clear view of the distant areas of stomach

Figure 2. The invagination of the remaining stomach into the duodenum, viewed on axial CT cross-section

Discussion

It is a rare case for an invagination to occur secondary to pertinent gastric tumors (4-10). Invagination cases are mostly secondary to benign tumors such as lipomas and inflammatory fibroid polyps (5, 7-9). In the presented case, the GI developed secondary to signet ring cell gastric adenocarcinoma, which was diagnosed on CT and confirmed by endoscopy and biopsy.

GI is mostly caused by benign lesions. Reported lesions include lipoma, adenoma, hyperplastic polyp, leiomyoma, inflammatory fibroid, schwannoma, hamartoma, antral myoepithelioma, and giant Brunner gland hamartoma (11-15). Rarely reported malignant lesions are; gastrointestinal stromal tumor, Menetrier's disease, and adenocarcinoma (4, 6, 16-18).

Pyloric stenosis is the most common symptom for GI. Pyloric stenosis in adults is mostly secondary to gastric or duodenal diseases including peptic ulcer or gastric carcinoma.

Adult intussusception is commonly diagnosed with CT, and the intestinal halo of the bowels that are either present or non-present with fat and mesenteric veins is pathognomonic (19, 20). CT is an effective tool both for obtaining information about the location of the lesions and the surrounding organs, and also for characterizing the tumor being examined. Sonography can be efficiently used for invagination, especially in child patients. Adult intussusceptions may cause delayed diagnosis since these cases are highly rare and may yield long-term, intermittent, and nonspecific symptoms. In this report, the use of CT in the diagnosis of adult intussusception due to gastric carcinoma has been described, suggesting that CT is a method of choice for the differential diagnosis of intermittent symptoms of pyloric stenosis including gastroduodenal intussusception in adults.

We conclude that the reporting of this case holds importance in three ways. Firstly, it contributes to the literature of the very few cases of gastroduodenal intussusception reported up to now. Secondly, a gastroduodenal intussusception secondary to a gastric signet ring cell carcinoma has been reported as a rare case, and lastly for the fact that this gastric carcinoma is likely to present as a gastroduodenal intussusception as the initial clinical sign, as was the case in our patient.

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