LETTERS TO THE EDITOR

Hypergastrinemia and recurrent type 1 gastric carcinoid in a young Indian male: Necessity for antrectomy?

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Abstract

Carcinoid tumors are the most common neuroendocrine tumors. Gastric carcinoids represent 2% of all carcinoids and 1% of all gastric masses. Due to the widespread use of Esophagogastroduodenoscopy for evaluating a variety of upper gastrointestinal symptoms, the detection of early gastric carcinoids has increased. We highlight an alternative management of a young patient with recurrent type 1 gastric carcinoids with greater than 5 lesions, as well as lesions intermittently greater than 1 cm. Gastric carcinoids have a variable presentation and clinical course that is highly dependent on type. Type 1 gastric carcinoids are usually indolent and have a metastasis rate of less than 2%, even with tumors larger than 2 cm. There are a number of experts as well as organizations that recommend endoscopic resection for all type 1 gastric carcinoid lesions less than 1 cm, with a follow-up every 6-12 mo. They also recommend antrectomy for type 1 gastric carcinoids with greater than 5 lesions, lesions 1 cm or greater, or refractory anemia. However, the American Society of Gastrointestinal Endoscopy guidelines state that type 1 gastric carcinoid surveillance is controversial based on the evidence and could not make an evidence-based position statement on the best treatment modality. Our report illustrates a rare cause of iron deficiency anemia in a young male (without any medical history) due to multiple recurrent gastric carcinoid type 1 lesions in the setting of atrophic gastritis causing hypergastrinemia, and in the absence of a vitamin B12 deficiency. Gastric carcinoid type 1 can present in young males without an autoimmune history, despite the known predilection for women aged 50 to 70 years. Type 1 gastric carcinoids can be managed by endoscopic resection in patients with greater than 5 lesions, even with lesions larger than 1 cm. This course of treatment enabled the avoidance of early antrectomy in our patient, who expressed a preference against more invasive measures at his young age.

Key words: Gastric carcinoid; Antrectomy; Endoscopic resection; Hypergastrinemia; Iron deficiency anemia

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TO THE EDITOR

It is with great interest that we read the experiences of Kadikoylu and colleagues in the management of a solitary...
gastrectomy[8]. Carcinoid tumors are the most common neuroendocrine tumors[9] and gastric carcinoids represent 2% of all carcinoids and 1% of all gastric masses[10]. Due to the widespread use of Esophagogastroduodenoscopy (EGD) to evaluate a variety of upper gastrointestinal symptoms, the detection of early gastric carcinoids has increased. We highlight an alternative management of a young patient with recurrent type 1 gastric carcinoid with greater than 5 lesions as well as lesions intermittently greater than 1 cm.

A 28-year-old Indian male with no significant medical history presented with fatigue. He was found to have severe iron deficiency anemia (hemoglobin of 68 gm/L) with a mean corpuscular volume of 77 fl, and an iron level of 370 mcg/L. Endoscopic evaluation for anemia revealed nine sessile polyps in the body and fundus of the stomach ranging from 5 mm to 9 mm, which were all resected. Since resection, the patient has experienced a resolution of his anemia along with normal gastrin levels. The patient has not had more than 5 lesions or a lesion greater than 1 cm for over two years.

Gastric carcinoids have a variable presentation and clinical course that is highly dependent on type (Table 2)[7]. Type 1 gastric carcinoids are usually indolent and have a metastasis rate of less than 2%, even with tumors larger than 2 cm[8]. Kadikoylu et al[1] recommend endoscopic resection for all type 1 gastric carcinoid lesions less than 1 cm with follow-up every 6-12 mo and antrectomy for type 1 gastric carcinoids with greater than 5 lesions, lesions 1 cm or greater, or refractory anemia. However, the American Society of Gastrointestinal Endoscopy guidelines state that type 1 gastric carcinoid surveillance is controversial based on the evidence and could not make an evidence-based position statement on the best treatment modality[9].

This report illustrates a rare cause of iron deficiency anemia in a young male (without any medical history) due to multiple recurrent gastric carcinoid type 1 lesions in the setting of atrophic gastritis causing hypergastrinemia and in the absence of a vitamin B12 deficiency. Gastric carcinoid type 1 can present in young males without an autoimmune history, despite the known predilection for women aged 50 to 70 years. Type 1 gastric carcinoids can be managed by endoscopic resection in patients with scans of the thorax, abdomen, and pelvis were normal. Surveillance EGD 6 mo later showed recurrence with 5 polyps, with the largest measuring 1.1 cm, which was resected. Since resection, the patient has experienced a resolution of his anemia along with normal gastrin levels.

### Table 1 Differential diagnosis of hypergastrinemia

| Elevated antral pH | Gastrinoma |
|--------------------|-----------|
| Chronic atrophic gastritis-type A | ++++ (> 1000) |
| Pernicious anemia | ++++ (> 1000) |
| Other immune dz (RA, vitiligo, SS, DM) | +++ (250-450) |
| Chronic atrophic gastritis-type B (H. Pylori), gastric cancer | +++ (250-450) |
| Renal insufficiency/high protein diet | +++ (150-250) |
| Massive small bowel resection | ++ or ++ |
| G cell hyperplasia/pyloric outlet obstruction | ++ or ++ |
| Calcium, caffeine, insulin, catecholamines | +++ (150-250) |
| H2 blocker/PPI's | ++ (H2) ++ (PPI) |
| Truncal vagotomy/retained antrum s/p surgery | + |

Gastrin level in pg/mL: + equals 150-250 pg/mL; ++ equals 250-450 pg/mL; +++ equals 450-1000 pg/mL; ++++ equals > 1000 pg/mL. dz: Diseases; RA: Rheumatoid arthritis; SS: Sjogren’s syndrome; DM: Diabetes mellitus type 1; H2: Histamine H2 receptor blockers; PPI’s: Proton pump inhibitors.

### Table 2 Gastric carcinoid types and differentiating characteristics

| Type 1 | Type 2 | Type 3 |
|--------|--------|--------|
| % of gastric carcinoids | Association | Epidemiology | Presentation | Rate of metastasis over a lifetime | Treatment |
| 70%-80% - most common | Chronic atrophic gastritis | Typically women 50-70 yrs old | Asymptomatic or anemia | < 2 % even if larger than 2 mm | Observation vs endoscopic resection vs antrectomy |
| Less than 5% | Gastrinomas (Zollinger-Ellison) | Family hx of MEN type 1 syndrome | Peptic ulcer disease | 2%-4% | Endoscopic resection vs antrectomy vs octreotide vs gastrectomy |
| 15%-20% | Sporadic carcinoid syndrome | Increased in African Americans | Hepatic mets or carcinoid syndrome | 65% metastatic at presentation | Partial or total gastrectomy with lymph node dissection vs chemotherapy |

hx: History; MEN: Multiple endocrine neoplasia.
greater than 5 lesions, even with lesions larger than 1 cm. This course of treatment enabled the avoidance of early antrectomy in our patient, who expressed a preference against more invasive measures at his young age.

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