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Type I gastric carcinoids in atrophic gastritis

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DESCRIPTION

An elderly woman with vitamin B₁₂ deficiency was evaluated for dysphagia. Upper endoscopy identified Schatzki's ring, the likely cause of her dysphagia, and atrophic gastric mucosa with absent folds and prominent vasculature (figure 1A). In addition, there were several erythematous papules in the gastric body (figure 1B,C). Biopsies of the papules revealed trabecular infiltrates of uniform cells with a salt and pepper chromatin pattern and scant cytoplasm, typical of carcinoid tumours (figure 2A). The diagnosis was confirmed by immunohistochemical staining for chromogranin (figure 2B).

Carcinoids, the most common neuroendocrine tumour, originate from histamine-containing enterochromaffin-like (ECL) cells. The majority of carcinoids (55%) originate in the gastrointestinal tract; the small intestine is the most frequent primary site (45%), followed by the rectum

(20%), appendix (17%), colon (11%) and stomach (7%).¹ Gastric carcinoids are divided into three types. Type I gastric carcinoids (80%) are associated with atrophic gastritis and pernicious anaemia; type II (5%) are associated with the Zollinger-Ellison syndrome, most commonly in the setting of multiple endocrine neoplasia type I; and type III (15%) are sporadic.² Vitamin B₁₂ deficiency and severe gastric atrophy suggest that our patient had type I carcinoids.

Types I and II gastric carcinoids result from hypergastrinaemia. In type I gastric carcinoids, atrophic gastritis-associated achlorhydria causes unrestrained gastrin release from gastrin-producing antral G-cells. Type II gastric carcinoids may metastasise (30%) and result from the hypergastrinaemia from ectopic production by a gastrinoma. In both types, increased gastrin stimulates proliferation of ECL cells which express cholecystokinin-2 (gastrin)

Figure 1 Endoscopic view of the gastric body reveals absent folds and prominent submucosal blood vessels consistent with atrophic gastritis (A), and several small erythematous papules identified as type I gastric carcinoids (B and C).

Figure 2 Histological appearances of biopsies of the erythematous gastric papules are consistent with carcinoid. (A) Trabecular infiltrates of uniform cells with scant cytoplasm, H&E stain, magnification 200 $\times$. (B) Positive immunohistochemical staining for chromogranin, magnification 100 $\times$.

receptors. Type III gastric carcinoids are independent of gastrin and have an especially poor prognosis.³

Type I gastric carcinoids are typically asymptomatic and are often detected incidentally as in our case. Patients with type I carcinoids have an excellent prognosis with no difference in long-term survival compared with the general population. Depending on size and number, type I carcinoids may be resected endoscopically or monitored conservatively with endoscopic surveillance.³

Learning points

- ▶ Type I gastric carcinoids are neuroendocrine tumours that result from excessive gastrin stimulation of enterochromaffin-like cells as a result of atrophic gastritis or pernicious anaemia.
- ▶ Type I gastric carcinoids are usually asymptomatic and have an excellent prognosis.

Competing interests None.

Patient consent Obtained.

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