

Title:

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Endoscopic Misdiagnosis of a Polypoid Gastric Neuroendocrine Neoplasm: A Case Report and Literature Review

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Keyword: Gastric Neuroendocrine Neoplasms (NENs). Polypoid Lesion. Gastroscopic Misdiagnosis.

Dear Editor,

A 75-year-old man presented to our department, complaining of recurrent abdominal pain for the past month. Esophagogastroduodenoscopy (EGD) revealed a single 0.6 cm polypoid lesion, classified as Yamada Type II, at the lesser curvature of the lower body of the stomach. The lesion exhibited a smooth surface, pale pink coloration, and no depression, ulceration, or erosion (Figure 1A). Narrow-band imaging (NBI) demonstrated sparse superficial microvascular patterns on the lesion's surface (Figure 1B). The observed polypoid lesion was treated via endoscopic mucosal resection (EMR) (Figures 1C). Pathological examination of the EMR specimen (Figures 1D-1E) revealed a neuroendocrine neoplasm (NEN) in the gastric body, classified as grade G3. Immunohistochemical staining demonstrated that the tumor cells were positive for pan-cytokeratin (P-CK), CD56, synaptophysin, INSM1, and Ki67 (60% positive). Given the high grade, the patient underwent a subsequent partial gastrectomy. Pathological examination of the surgical specimen demonstrated a microscopic region of approximately 2 mm with dark-staining nuclei (Figures 1F). Immunohistochemical staining showed positivity for CD56 and synaptophysin, and negativity for CD20 (Figures 1G). These findings were consistent with residual NEN, with the residual lesion measuring approximately 2 mm in maximum diameter.

Discussion

NENs are a group of highly heterogeneous tumors originating from neuroendocrine cells and peptidergic neurons. They can arise in diverse anatomical sites, with the highest prevalence observed in the lungs and gastroenteropancreatic regions (1). The incidence rate of NENs

has increased annually, with data demonstrating a rise from 5.25 per 100,000 in 2004 to 6.98 per 100,000 in 2012. Among these, gastric neuroendocrine neoplasms (G-NENs) account for approximately 7.0% of all NENs and constitute less than 1.0% of gastric tumors (2). G-NENs are characterized by a low incidence rate and marked heterogeneity, with distinct diagnostic/therapeutic approaches and prognostic outcomes across different subtypes.

G-NENs are primarily diagnosed via endoscopy combined with histopathological evaluation of biopsy specimens. Endoscopic morphological features of g-NENs under white-light imaging include the following: 1. Submucosal elevations: Most lesions present as well-demarcated, hemispherical, or flat elevations with a smooth mucosal surface that is indistinguishable from adjacent areas. 2. Central depression: A subset exhibits telangiectasia or central depression (umbilical sign) at the lesion surface. 3. Polypoid lesions: A few cases manifest as solitary or multiple Yamada II-III type polyps, characterized by smooth surfaces and pale pink coloration. 4. Ulceration or erosion: More aggressive tumors may present with superficial erosions or ulcers (3-5). In this case, the polypoid lesion was initially considered a benign polyp; however, histopathological evaluation of the EMR specimen revealed a G-NEN (G3). Given the aggressive histological grade, curative-intent surgical resection should be considered to achieve adequate oncological outcomes.

References

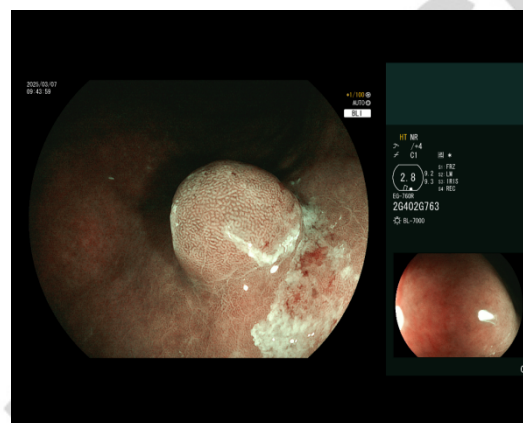
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Figure Legends

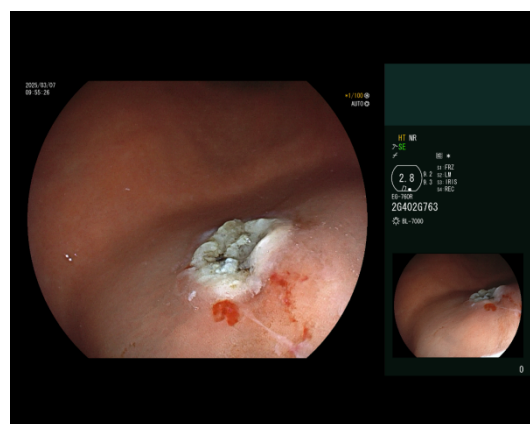
Figure 1. (A) EGD revealed a Yamada Type II polypoid lesion measuring approximately 0.6 cm. (B) NBI identified sparse superficial microvascular patterns on the lesion's surface. (C) The EMR treatment. (D) and (E) H&E staining and immunohistochemical staining of the EMR specimen. (F) and (G) H&E staining and immunohistochemical staining after the partial gastrectomy.



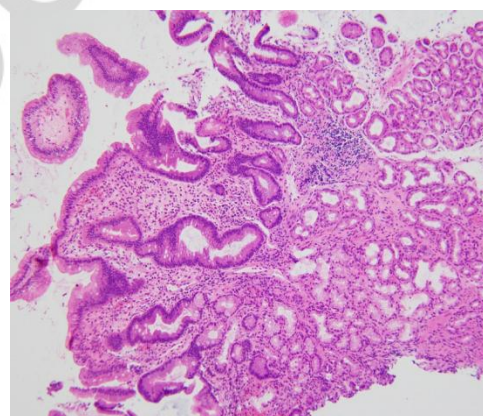
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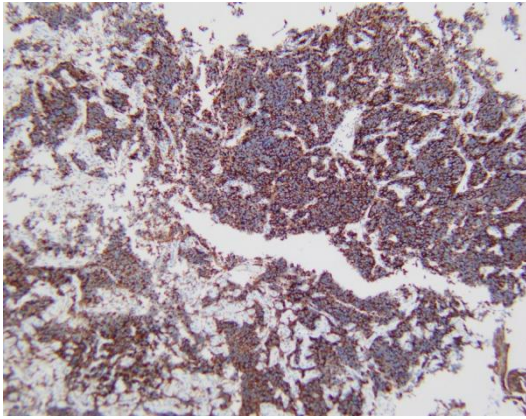
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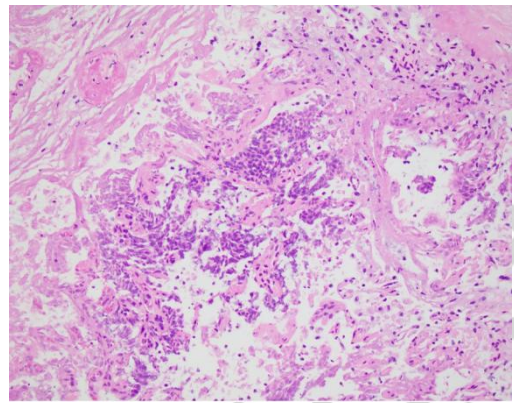
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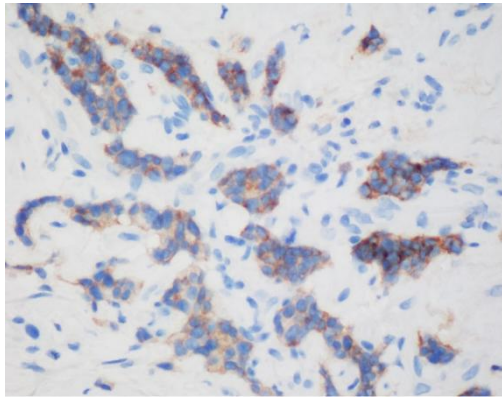
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E



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