

EDUCATION AND IMAGING

Gastrointestinal: Gastric mixed adenoneuroendocrine carcinoma

A 67-year-old man with early gastric cancer was referred to our hospital for further management. Upper endoscopy identified not only well-differentiated intramucosal carcinoma as previously noted, but also a concave 1.5-cm lesion with a slightly protruding margin in the lesser curvature of the lower gastric body (Fig. 1a). Using magnifying endoscopy with narrow-band imaging, we detected irregular patterns of minute gland ducts in the concave portion of the lesion. Microvessels of varying sizes formed networks without glandular structures (Fig. 1b,c). Endoscopic ultrasonography revealed early tumor infiltration into the submucosal layer. On hematoxylin-eosin staining of a biopsy specimen, in addition to adenocarcinoma components, the outgrowth of atypical cells with enlarged nuclei showing a high nuclear-cytoplasmic ratio in a cord-like solid alveolar pattern was noted (Fig. 2a). On immunohistochemistry, chromogranin A, synaptophysin, and CD56 were positive. The Ki-67 index exceeded 60% (Fig. 2b).

The lesion was diagnosed as a neuroendocrine carcinoma (NEC) of small cell type, accompanied by adenocarcinoma components. The lesion appeared localized on thoracoabdominal CT and surgical resection was performed because of the mixture of NEC components.

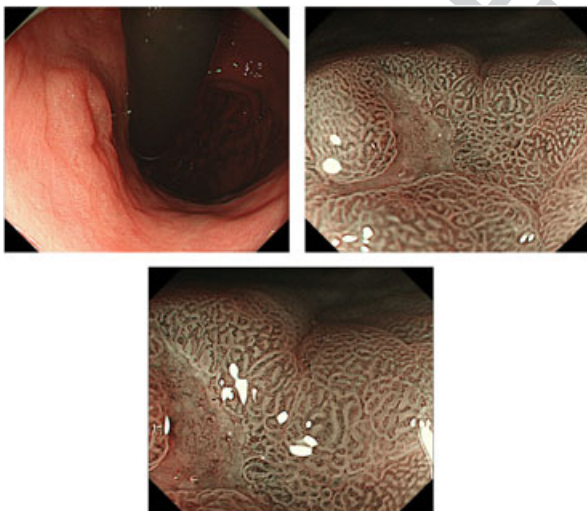


Figure 1 (a) On upper endoscopy performed at our hospital, a concave 1.5-cm lesion with a slightly protruding margin was observed in the lesser curvature of the lower gastric body. Using magnifying endoscopy with narrow-band imaging, minute gland ducts with irregular sizes were irregularly arranged in the concave portion of the lesion (b), and the microvessels of varying sizes formed networks without glandular structures (c).

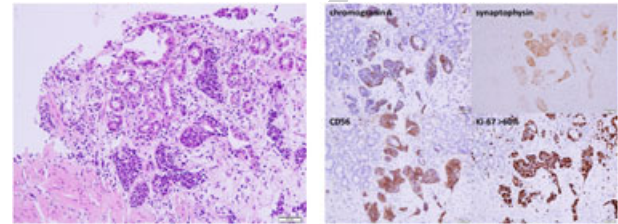


Figure 2 (a) On hematoxylin-eosin staining of a biopsy specimen, in addition to adenocarcinoma components composed of irregular atypical gland ducts, the outgrowth of atypical cells with enlarged nuclei showing a high nuclear-cytoplasmic ratio in a cord-like solid alveolar pattern was noted. (b) On immunohistochemistry, chromogranin A, synaptophysin, and CD56 were positive, and the Ki-67 index was higher than 60%.

Histopathological examination of the resected specimen confirmed the presence of NEC in the deep layer of the lamina propria over the submucosal layer, as well as well-differentiated adenocarcinoma in the epithelium over the superficial lamina propria. Its depth was pT1b (distance of SM infiltration: 1.3 mm). The lesion was diagnosed as mixed adenoneuroendocrine carcinoma (MANEC). Vascular invasion was also noted, and three of 14 lymph nodes demonstrated metastasis of NEC components. The postoperative course has been followed for 1 year without adjuvant therapy, and the patient is alive without recurrence.

Gastric NEC, although rare, is highly malignant. This cancer grows rapidly, and marked vascular invasion and lymph node and liver metastases develop in its early stages. In the 2010 WHO classification, lesions composed of at least 30% adenocarcinoma, and NEC components are defined as MANEC. Because adenocarcinoma components cover the surface mucosa, MANEC is often diagnosed as tubular adenocarcinoma on endoscopic biopsy and is difficult to accurately diagnose prior to surgery. Curative treatment was possible for the present patient, as his cancer was discovered at an early stage and NEC components were successfully detected.

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