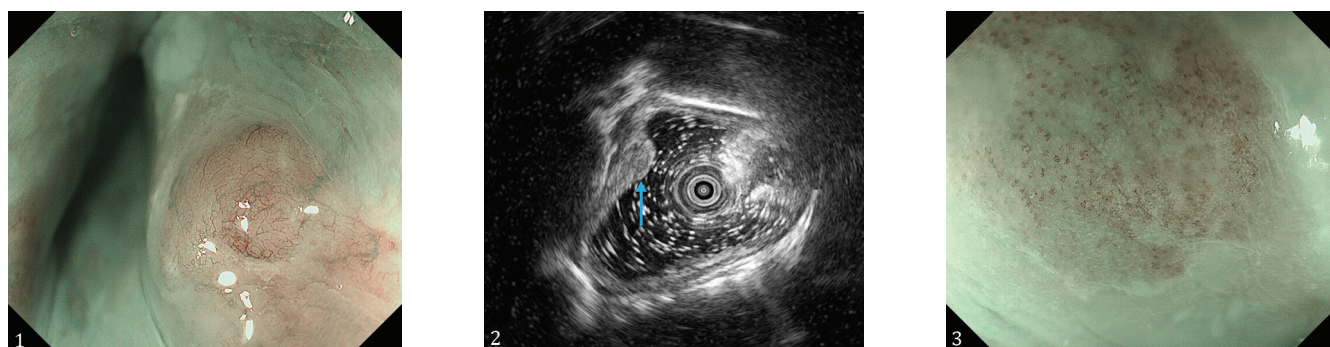


Magnifying Narrow-band Imaging with Endoscopic Ultrasound for the Diagnosis of Synchronous Triple Primary Tumors of the Esophagus

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A 77-year-old woman was referred for treatment of esophageal neuroendocrine carcinoma (NEC) with magnifying narrow-band imaging (ME-NBI) plus endoscopic ultrasound (EUS) rechecked. The NEC, confirmed by biopsy immunohistochemistry, measuring 1.5/1.0 cm, was a solitary submucosal tumor-like lesion at 28 cm below the incisor with type R vessels (JES classification) on ME-NBI (Fig 1), echo-poor and restricted to the submucosa on the EUS (Fig 2). Besides, two other lesions, measuring 1.0 and 1.5 cm in diameter, were also found at 24 cm and 27 cm below the incisor separately, with type B1 vessels (JES classification) (Fig 3). Computed tomography showed no metastasis outside the gastrointestinal tract. Endoscopic submucosal dissection was performed. Microscopic examination showed large tumor cells with abundant eosinophilic cytoplasm. Immunohistochemical studies demonstrated positive staining for Ki-67 (index of 85%), chromogranin A, synaptophysin (Supplementary file, Fig 1), CD56, and D2-40, and negative for p53. The large-cell NEC was found to be invaded the submucosa with infiltration of 1,100 μ m, positive lymphovascular invasion and vertical margin (Supplementary file, Fig 2). The other two lesions were found to be low- and high-grade dysplasia (Supplementary file, Fig 2) with negative margin. The patient received an additional surgery, and residual NEC was confirmed pathologically without lymph node metastasis. Follow-up is still ongoing.

NECs of the esophagus are rare but aggressive neoplasms. Large-cell carcinomas are the rarest among them [1]. There is no established treatment regime for esophageal neuroendocrine tumors, surgery, radiotherapy and chemotherapy are the treatment of choice, which solely or combined can improve prognosis [2]. In our case, NEC together with early esophageal cancer was found at the same time with the help of ME-NBI and

EUS, which has not been reported before. Instead of surgery, endoscopy resection was firstly made. Additional surgery was displayed based on the post-resected histopathology, without chemotherapy or radiotherapy. More research needs to be done to ameliorate our lack of knowledge and to provide better treatment options.

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