Endoscopic ultrasound-guided fine-needle tissue acquisition from a subepithelial lesion in the distal ileum using the forward-viewing echoendoscope

In a context of rapidly expanding indications for endoscopic ultrasound (EUS)-guided procedures, a dedicated forward-viewing linear therapeutic echoendoscope (FV-EUS) has been developed and tested for different clinical indications [1–3]. The frontal endoscopic view combined with the exit of the working channel at the tip of the echoendoscope offers some unique advantages over the standard curvilinear echoendoscope. This has opened up new possibilities for EUS-guided fine-needle aspiration and tissue acquisition (EUS-FNTA) from difficult targets and combined endoscopic/EUS treatment [3, 4]. We have previously described the possibility of using FV-EUS to navigate easily through the colon to reach and sample extracolonic lesions located above the sigmoid tract [4]. We now report the first case of intubation of the ileocecal valve followed by sampling of a distal ileal lesion performed using the FV-EUS.

A 68-year-old woman with a 13-year history of ulcerative colitis was found on routine surveillance colonoscopy to have a 1.5 cm lesion in the terminal ileum that presented characteristics suggestive of a subepithelial lesion with a normal-appearing overlying mucosal layer (Fig. 1). To exclude extrinsic compression, computed tomography was carried out and confirmed the presence of a wall thickening or lesion at the level of the terminal ileum, close to the ileocecal valve. Colonoscopy using the FV-EUS was attempted and was completed up to the cecum. The terminal ileum was then intubated and, under EUS guidance, a hypoechoic lesion measuring 14 × 10 mm and confined to the third wall layer was detected. EUS-FNTA using a 19-gauge needle was performed (Fig. 2) and a tissue sample obtained (Fig. 3), which revealed a serotonin-secreting neuroendocrine tumor with a Ki67 proliferation index of less than 1%, corresponding to a grade 1 tumor (NET G1). The patient underwent right hemicolectomy, and definitive assessment of the surgical specimen confirmed the diagnosis of a grade 1 serotonin-secreting neuroendocrine tumor with lymph node involvement (pT3N1) [5].

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Competing interests: None

Domenico Galasso1, Fabia Attili1, Franco Scaldaferri2, Giuseppe Vanella1, Frediano Inzani3, Guido Costamagna1, Alberto Larghi1
1 Digestive Endoscopy Unit, Catholic University, Rome, Italy
2 Gastroenterology Division, Catholic University, Rome, Italy
3 Department of Pathology, Catholic University, Rome, Italy

Fig. 1 Endoscopic image of the subepithelial lesion in the terminal ileum in a 68-year-old woman.

Fig. 2 a Endoscopic ultrasound (EUS) view of the subepithelial lesion in the terminal ileum, demonstrating a hypoechoic lesion measuring 14 × 10 mm and confined to the submucosal layer. b EUS-guided fine-needle tissue acquisition from the lesion using a 19-gauge needle.

Video 1
Intubation of the ileocecal valve under endoscopic guidance, endoscopic ultrasonography-guided fine-needle tissue acquisition from the detected subepithelial lesion, and histologic features of the collected specimen.
Fig. 3  Tissue specimen showing solid nests of neoplastic polygonal cells with mild atypia (main image), immunoreactivity to chromogranin A (right upper), and a Ki-67 proliferation index of about 1% (right lower). Staining: hematoxylin and eosin (H&E) (main image), immunoperoxidase (smaller images).

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Corresponding author
Alberto Larghi, MD, PhD
Università Cattolica del Sacro Cuore
Largo A. Gemelli 8
00168 Rome
Italy
Fax: +39-06-30156581
albertolarghi@yahoo.it