

Endoscopic ultrasound-guided angiotherapy in bleeding gastrointestinal stromal tumors with coil deployment and cyanoacrylate injection



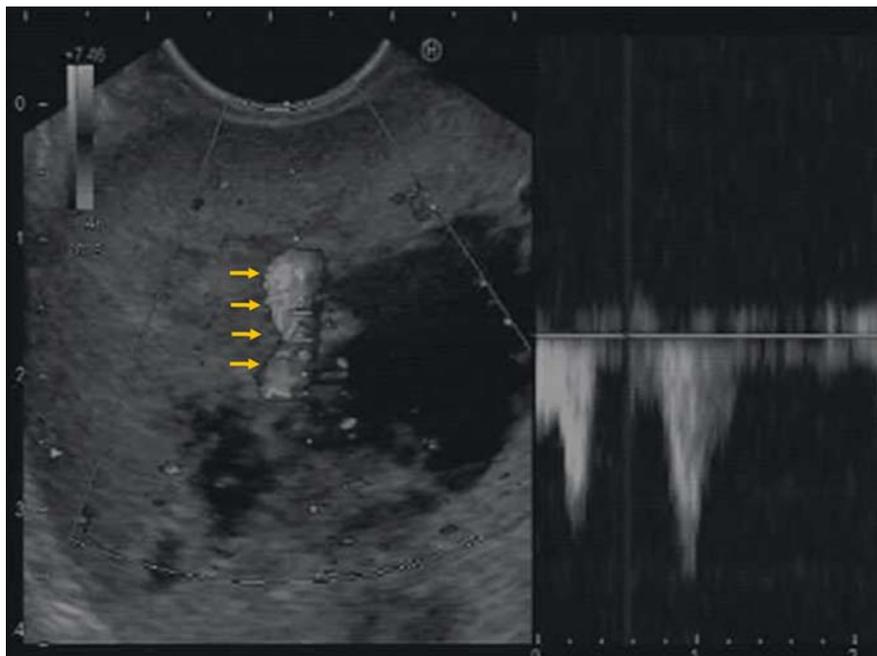
► **Fig. 1** Endoscopic view of the ulcerated bleeding GI stromal tumor (GIST).



► **Video 1** Endoscopic ultrasound (EUS)-guided angiotherapy in two patients with bleeding GI stromal tumors with EUS-guided coil deployment and cyanoacrylate (CYA) injection targeting the feeding artery.

Hemorrhage is the most frequent (30–40%) and dangerous complication of gastrointestinal stromal tumors (GISTs), with surgery being the treatment of choice and emergency surgery having a significantly higher risk than elective procedures [1]. Conventional endoscopic treatment of tumoral lesions is challenging and efficacy limited because of the complex neoangiogenesis of these lesions, which are beyond the reach of endoscopic contact procedures [2]. Cases of endoscopic ultrasound (EUS)-guided therapy of bleeding GISTs with injection of cyanoacrylate (CYA) [3,4] or ethanol [5] have been published. To the best of our knowledge, EUS-guided coil deployment has not been reported in this setting. We present two cases of bleeding GISTs successfully treated with EUS-guided combined coil deployment and further injection of CYA targeting the feeding artery (► **Video 1**).

Case 1: a 72-year-old man was admitted for melena and hemodynamic instability. An ulcerated fundic mass with a necrotic center and a 5-mm intratumoral artery was observed (► **Fig. 1**). EUS-guided injection of CYA (Histoacryl; B. Braun, Melsungen, Germany) into the feeding artery (► **Fig. 2**) with a 22-gauge needle was the initial approach. However, a spurting



► **Fig. 2** Endoscopic ultrasound (EUS) image displaying the feeding artery of the bleeding GI stromal tumor (GIST) (arrows) shown in ► **Fig. 1**.

bleed into the tumor cavity after puncture was observed (► **Fig. 3**). Hemostasis was achieved by deploying a 6-mm × 20-

cm coil (Nester; Cook Medical, Limerick, Ireland) and injecting 2 mL of CYA with a 19-gauge needle (► **Fig. 4**).



► **Fig. 3** Spurting bleed (arrows) after the endoscopic ultrasound (EUS)-guided puncture with a 22-gauge needle.



► **Fig. 4** Endoscopic ultrasound (EUS)-guided deployed coil (arrows) with a 19-gauge needle.

Case 2: a 79-year-old woman was admitted for hematemesis and hypovolemic shock. An ulcerated fundic mass with a 4-mm artery was observed. EUS-guided therapy with a 19-gauge needle was performed employing a 6-mm × 14-cm coil, followed by injection of 2 mL of CYA. The clinical outcome in both patients was uneventful, and scheduled surgery took place 4 weeks later. EUS-guided combined angiotherapy targeting the culprit artery of bleeding GISTs maintained hemostasis until scheduled surgery. Moreover, although the follow-up in these two patients was short, EUS-guided angiotherapy may be a therapeutic option in patients with bleeding GISTs deemed unfit for surgery.

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Competing interests

The authors declare they have no conflict of interest.

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