Endoscopic ultrasound-guided angiotherapy of a large bleeding gastrointestinal stromal tumor

Bleeding gastrointestinal stromal tumors (GISTs) have historically been managed with either surgical resection or radiologic embolization. Occasional reports exist of endoscopic therapies such as hemoclips [1], endoloop ligation [2], and endoscopic ultrasound (EUS)-guided angiotherapy [3]. We herein present the case of an elderly patient with recurrent bleeding from a large gastric GIST who was successfully treated with EUS-guided angiotherapy.

A 94-year-old man with severe aortic stenosis presented with symptomatic anemia and hemoglobin of 5.9 g/dL. Esophagogastroduodenoscopy (EGD) identified a large subepithelial lesion at the incisura with a depressed 15-mm central ulcer (Fig. 1). EUS revealed a 40×45-mm hypoechoic well-circumscribed lesion with areas of cystic degeneration arising from the muscularis propria. A corresponding 7-mm hypoechoic malignant-appearing lymph node was identified (Fig. 2). Fine needle aspiration (FNA) confirmed a diagnosis of GIST. Although surgical resection was indicated, the patient’s age and multiple comorbidities precluded this. EUS-guided angiotherapy was considered a suitable option. A curved linear-array echoendoscope (Olympus GF-UC(T)140P-OL5; Olympus America Inc., Center Valley, Pennsylvania, USA) was used, and a vessel deep to the GIST ulcer was identified. Pulse wave Doppler confirmed arterial flow (Fig. 3; Video 1). After the patient had been given an intravenous injection of cefotetan 2g, a 19-gauge needle (Flex 19; Boston Scientific, Natick, Massachusetts, USA) was used to puncture the target artery and 2mL of N-butyl 2-cyanoacrylate (Histoacryl; B. Braun Medical, Melsungen, Germany) was injected. A Doppler image after cyanoacrylate injection showing an absence of vascularity and a posterior acoustic shadow (Fig. 4).
Bethlehem, Pennsylvania, USA) was injected followed by an immediate flush of 2 mL of 5% dextrose.

Cyanoacrylate deposition was seen within the lesion as an area of increased echo-geniarity with posterior acoustic shadowing. Power Doppler confirmed a near absence of vascularity within the GIST (Fig. 4). Repeat EGD/EUS after 4 weeks revealed a substantial reduction in the size of the lesion and the central ulcer. There was a small amount of cyanoacrylate seen protruding through the ulcer bed (Fig. 5). At 6-month follow-up, there was no further evidence of gastrointestinal bleeding.

EUS-guided angiotherapy, as opposed to hemostatic techniques employed under direct endoscopic vision can delineate vascular anatomy and deliver targeted therapy to the vessel of interest [4]. Furthermore, immediate assessment of efficacy through color Doppler can be obtained. Important technical aspects that should be considered include using a 19-gauge needle as the larger diameter will allow a rapid injection. Additionally, we advise against aspiration of blood to confirm the position of the needle as this may lead to cyanoacrylate polymerization within the needle itself.

EUS-guided angiotherapy appears safe, effective, and technically feasible for the management of bleeding GISTs. Importantly, its application is not limited by the lesion’s size. Future directions for its use may include patients with bleeding GISTs requiring a bridging therapy prior to surgery and those not suitable for surgical resection.

Endoscopy_UCTN_Code_TTT_1AS_2AB

Competing interests: Mouen A. Khashab is a consultant for Boston Scientific and Olympus America and has received research support from Cook Medical. Anthony Kalloo is a founding member, equity holder, and consultant for Apollo Endosurgery.


Department of Medicine and Division of Gastroenterology and Hepatology, The Johns Hopkins Medical Institutions, Baltimore, Maryland, USA

References

Bibliography
DOI http://dx.doi.org/10.1055/s-0033-1344875
Endoscopy 2013; 45: E326–E327
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

Corresponding author
Mouen A. Khashab, MD
Department of Gastroenterology
Johns Hopkins Hospital
1800 Orleans St, Suite 7125 B
Baltimore
Maryland 21205
USA
Fax: +1-443-683-8335
mkhasha1@jhmi.edu

Video 1
Endoscopic ultrasound (EUS)-guided angiotherapy of a gastrointestinal stromal tumor (GIST).