Successful treatment by novel endoscopic ultrasound-guided devascularization for refractory splenic artery aneurysm associated with portal hypertension

Splenic artery aneurysm carries significant risk of rupture and life-threatening hemorrhage [1]. Therapy utilizing digital subtraction angiography (DSA) with embolization is usually safe and effective; however, incomplete occlusion can occur and frequently requires surgical repair [2]. We report the case of refractory splenic artery aneurysm associated with portal hypertension that was successfully treated by a novel endoscopic ultrasound (EUS)-guided devascularization technique.

A 64-year-old woman with chronic hepatitis B presented with epigastric abdominal pain for 4 months. Esophagogastro-duodenoscopy showed isolated gastric varix in the fundus. Computed tomography revealed splenic artery aneurysm and cirrhosis with portal hypertension (Fig. 1). Embolization via DSA was performed successfully, as confirmed by selective splenic arteriography. One week later, a 2-cm residual aneurysm cavity was detected by EUS (Fig. 2). After EUS-guided obliteration of gastric varices, which hamper transgastric puncture to the aneurysm, a standard 22-gauge fine-needle aspiration needle was inserted into the aneurysmal neck, and a pre-loaded 0.018-inch fibered interlock detachable coil (F-IDC; 2D 12 mm, 30 cm; Boston Scientific, Marlborough, Massachusetts, USA) was slowly pushed out of the needle tip into the residual aneurysmal cavity. After confirming that the aneurysmal neck was adequately coiled, the delivery wire was removed. EUS showed the direction of inflow had changed and the velocity had slowed down. Then, 3 mL lauromacrogol was injected into the aneurysmal sac; inflow slowed down further. Rapid injection of 0.5 mL tissue glue followed by 2 mL lauromacrogol generated a hyperechoic clot in the aneurysmal neck, with cessation of inflow (Video 1). EUS with Color Doppler confirmed complete occlusion of the original aneurysm at the 8-week and 16-week follow-ups (Fig. 3).

Angiographic re-embolization of an aneurysm may not be feasible because of small vessel caliber [3]. The key to successful management of refractory aneurysm is selective devascularization of high-velocity blood inflow from the neck of the sac leading to the endoleak, rather than direct deployment of excess coils in the sac with risk of erosion and migration of coils [4, 5]. With more powerful embolization effect and more control in selecting embolization sites, F-IDCs are the preferred treatment modality for vascular lesions with high blood flow that require highly precise embolization. Though not reported in the past, F-IDCs can be used successfully for EUS-guided aneurysm embolization. We therefore considered the EUS-guided selective devascularization with F-IDC, glue, and lauromacrogol to be a valuable therapeutic alternative for refractory cases with both splenic artery aneurysm and gastric varices.

Endoscopy UCTN Code TTT_1AS_2AC
Competing interests

The authors declare that they have no conflict of interest.

The authors

Hongtan Chen¹, Feng Li², Fenming Zhang¹, Jianan Guo¹, Chunhui Nie¹, Junhui Sun³, Guoqiang Xu¹

¹ Department of Gastroenterology, The First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou, China
² Department of Gastroenterology, Christus Trinity Mother Frances Hospital and Clinic, Tyler, Texas, USA
³ Department of Hepatopancreatobiliary Surgery, The First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou, China

Corresponding author

Guoqiang Xu, MD, PhD
Department of Gastroenterology, The First Affiliated Hospital, College of Medicine, Zhejiang University, 79 Qingchun Road, Hangzhou, China, 310003
Fax: +86-571-87236730
xugq@zju.edu.cn

References


Bibliography

Endoscopy 2021; 53: E194–E195
DOI 10.1055/a-1216-0670
ISSN 0013-726X
published online 2.9.2020
© 2020. Thieme. All rights reserved.
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

ENDOSCOPY E-VIDEOS
https://eref.thieme.de/e-videos

Endoscopy E-Videos is a free access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online.

This section has its own submission website at https://mc.manuscriptcentral.com/e-videos