EUS-guided drainage of liver abscesses: Video demonstration of two novel endoscopic techniques (with video)

Mihajlo Gjeorgjievski1, Abdelhai Abdelqader1, Avik Sarkar1, Haroon Shahid1, Amy Tyberg1, Michel Kahaleh1
1Department of Gastroenterology and Hepatology, Rutgers Robert Wood Johnson Medical School, New Brunswick, New Jersey, USA

INTRODUCTION

Liver abscesses are purulent collections in the liver parenchyma that can present with fever, sepsis, or multiorgan failure.

Conventionally, they have been drained percutaneously. However, liver abscesses that are accessible by EUS may benefit from an internal drainage as previously described.[1-3] This manuscript emphasizes the need to customize the type of draining depending on the location and aspect of the infection collection.

CASE STUDIES

Case 1
A 71-year-old woman with benign biliary stricture and prior endoscopic biliary stenting presented with worsening right upper quadrant (RUQ) abdominal pain for 3 weeks. Laboratory examination revealed marked leukocytosis 34.4 bil/L (4.0–10.0 bil/L). Computerized tomography (CT) revealed a 12 cm × 8 cm left hepatic abscess [Figure 1]. Given proximity of the abscess to the gastric wall, EUS drainage was made, using a 15 mm × 10 mm cautery-tipped lumen-apposing metal stent (Hot Axios, Boston Scientific), after confirming purulent material by fine-needle aspiration (FNA) of the abscess. After stent deployment, there was an immediate release of 800 mL purulent material sent for analysis. Two 7 Fr ×7 cm double-pigtail stents were placed through the stent [Figure 2] to prevent friction between the wall of the abscess and the lumen-apposing metal stent.

Case 2
A 74-year-old woman with prior medical history of metastatic breast cancer to the liver presented to the hospital with severe RUQ abdominal pain for 2 weeks, leukocytosis, and fevers. CT scan revealed multiple abscesses in the right and left lobe, largest one measuring 6 cm at the hepatic dome [Figure 3]. EUS fine-needle aspiration of one lesion confirmed pus; however, in contrary to Case 1, the abscess was located more distally and was separated from the gastric wall.
A 10 mm × 60 mm fully covered metal stent with antimigration fins (Viabil, Conmed) was deployed, following formation of the tract with a needle-knife sphincterotome, guided by wire [Figure 4]. Both patients rapidly improved after drainage of the abscesses. Those two cases demonstrated two different methods of endoscopic drainage of liver abscesses, each abscess drained being guided by its proximity to the gastric wall [Video 1].

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understand that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
Mihajlo Gjorgjievske and Abdelhai Abdelqader disclose no conflicts related to the article. Avik Sarkar has done consulting work for US Endoscopy and Obalon Therapeutics.

Haroon Shahid has done consulting work for US Endoscopy.

Amy Tyberg has done consulting work for NinePoint Medical, EndoGastric Solutions, and Obalon Therapeutics.

Michel Kahaleh has done consulting work for Boston Scientific, Interscope Med, and Abbvie. He has
received research grants from Boston Scientific, Emcision, Conmed, Pinnacle, Cook, Gore, Merit, and Olympus.

Michel Kahaleh is an Associate Editor of the journal. The article was subject to the journal’s standard procedures, with peer review handled independently of this editor and his research groups.

REFERENCES

1. Noh SH, Park DH, Kim YR, et al. EUS-guided drainage of hepatic abscesses not accessible to percutaneous drainage (with videos). Gastrointest Endosc 2010;71:1314-9.
2. Itoi T, Ang TL, Seewald S, et al. Endoscopic ultrasonography-guided drainage for tuberculous liver abscess drainage. Dig Endosc 2011;23 Suppl 1:158-61.
3. Keohane J, Dimaio CJ, Schattner MA, et al. EUS-guided transgastric drainage of caudate lobe liver abscesses. J Interv Gastroenterol 2011;1:139-41.