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Elective cholecystectomy after reversal of septic shock using multimodality endoscopic gallbladder drainage

Endoscopic ultrasound-guided gallbladder drainage (EUS-GBD) is considered an effective therapy for acute cholecystitis in patients who are unfit for surgery [1–3].

We describe the case of a 90-year-old woman admitted for septic shock due to acute cholecystitis, who underwent EUS-GBD after being considered unfit for surgery because of advanced age and comorbidities (obesity, coronary heart disease) (▶ **Video 1**). Transgastric EUS-GBD with a lumen-apposing metal stent (Hot-Axios, 10×10 mm, Boston Scientific, Marlborough, Massachusetts, USA) was performed using a forward-view echoendoscope (TGF-UC180J; Olympus, Tokyo, Japan) after failure in identifying a safe window with a curvilinear-array echoendoscope [4]. Subsequently, the patient recovered and returned home after 1 week.

However, she was readmitted after 2 weeks because of recurrence of cholangitis and severe sepsis. Computed tomography showed cholecystitis despite the stent still being in place. Almost complete stent occlusion due to tissue overgrowth was observed endoscopically. The gallbladder lumen contained a large amount of pus, which was drained using a nasobiliary tube, leading to a temporary clinical improvement. At multidisciplinary discussion, surgery was still contraindicated due to sepsis and hemodynamic instability, and therefore an endoscopic rescue strategy was planned. We placed a fully covered biliary metal stent over a guidewire through the obstructed Axios, achieving good biliary drainage [5].

Two months later, due to the persistence of biliary pain and ultrasound signs of mild cholecystitis, without systemic sepsis, the patient was considered suitable for elective cholecystectomy. Surgery was not impeded by the presence of the stents. In particular, disconnecting the gallbladder and suturing the gastric wall were undemanding.

We speculate that the suboptimal clinical outcome of EUS-GBD in our patient might have been due to the greater distance between the gallbladder and the antrum, as opposed to the duodenum, leading to traction on the stent and subsequent tissue overgrowth. We showed that surgery could be an effective rescue strategy, even after failure of EUS-GBD.

Endoscopy_UCTN_Code_CPL_1AL_2AD

Video 1 Endoscopic ultrasound-guided gallbladder drainage with a lumen-apposing metal stent; endoscopic view of the proximal flange deployment. Computed tomography showing recurrent cholecystitis, stent still in place, and gastric tissue overgrowth; endoscopic view of nearly complete stent occlusion due to tissue overgrowth, and gallbladder lumen with pus and debris. Endoscopic and fluoroscopic view of a biliary metal stent placed through the obstructed Axios stent (Boston Scientific, Marlborough, Massachusetts, USA). Elective open cholecystectomy, showing the two metal stents between the gastric antrum and gallbladder.

Competing interests

None

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DOI https://doi.org/10.1055/a-0655-1881
Published online: 14.8.2018
Endoscopy 2018; 50: E299–E300
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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