

An 'omental patch' created during over-the-scope clipping completely sealed a duodenal perforation after endoultrasonography

Benedetto Mangiavillano, Elisabetta Morandi, Monica Arena, Tara Santoro and Enzo Masci

Keywords: duodenal, endoscopic ultrasonography, omental patch, over-the-scope clip, OVESCO, perforation

Perforation of the inferior knee of the duodenum is a rare complication during endoscopic maneuvers and, in particular, during endoscopic ultrasonography (EUS). A recent study by Carrara and colleagues reported a duodenal perforation rate of 0.09% in a series of 3296 patients who underwent EUS with fine-needle aspiration [Carrara *et al.* 2010]. The data in the literature on surgical management of these perforations are not currently comforting.

An 82-year-old woman was referred to our center after computed tomography had shown a 7 cm diameter pseudocyst and a suspected malignant neoplasia of the proximal third of the common bile duct, causing jaundice. The patient underwent EUS with a linear echoendoscope (Pentax Hamburg, Germany). During retraction of the scope in the duodenum, we observed a full-thickness break of about 12 mm diameter, at the inferior duodenal knee (Figure 1). With an operative gastroscope we immediately placed a sharp-toothed, 10 mm/6 diameter over-the-scope clip (OTSC; OVESCO, Endoscopy, Tübingen, Germany) on the perforation. We preferred a therapeutic endoscope instead of the standard one because of the possibility of mounting a bigger diameter OTSC. During the aspiration we placed the omentum inside the cap. After releasing the OTSC we obtained immediate closure of the perforation, creating an 'omental patch' (Figure 2). The correct positioning of the OTSC and the complete closure of the perforation were subsequently confirmed by X-ray, the day after, when the patient underwent transhepatic biliary drainage (percutaneous transhepatic cholangiography). After releasing the drainage across the

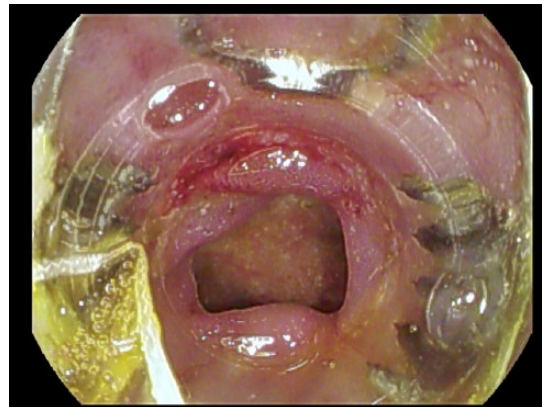


Figure 1. Perforation of the inferior duodenal genu by endoscopic ultrasonography (EUS).

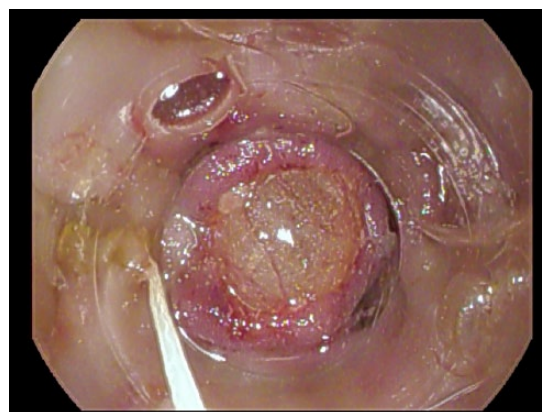


Figure 2. Duodenal perforation sealed by OTSC creating an "omental-patch".

papilla, contrast was injected to check the correct closure of the defect. CO₂ was not used in this case.

Ther Adv Gastroenterol

2014, Vol. 7(6) 280–281

DOI: 10.1177/
1756283X14540223

© The Author(s), 2014.
Reprints and permissions:
[http://www.sagepub.co.uk/
journalsPermissions.nav](http://www.sagepub.co.uk/journalsPermissions.nav)

Correspondence to:
Benedetto Mangiavillano, MD
Gastrointestinal
Endoscopy, Azienda
Ospedaliera San Paolo,
University Hospital,
University of Milan, Via
A. di Rudini n°8, 20142
Milano, Italy
b_mangiavillano@hotmail.com

Elisabetta Morandi, MD
Monica Arena, MD
Tara Santoro, MD
Enzo Masci, MD
Gastrointestinal
Endoscopy, Azienda
Ospedaliera San Paolo,
University Hospital,
University of Milan, Milan,
Italy

The patient developed peritonitis and died 12 days later of respiratory failure despite fasting, antibiotic therapy, nasogastric tube placement and parenteral nutrition support.

As shown in a few reports in the literature [Donatelli *et al.* 2013; Meduri *et al.* 2014; Díez-Redondo *et al.* 2012], given the high rate of morbidity and mortality associated with post-surgical treatment of iatrogenic duodenal perforations, the OTSC should be considered the first option for immediate resolution of this adverse event, taking into account the possible risk of failure.

OTSC may play a part in the armamentarium for the acute management of perforations and other such conditions [Bingener and Ibrahim-zada, 2014].

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.


Conflict of interest statement

The authors have no conflicts of interest to declare.

References

- Bingener, J. and Ibrahim-zada, I. (2014) Natural orifice transluminal endoscopic surgery for intra-abdominal emergency conditions. *Br J Surg* 101: e80–e89.
- Carrara, S., Arcidiacono, P., Mezzi, Petrone, M., Boemo, C., Testoni, P. (2010) Pancreatic endoscopic ultrasound-guided fine needle aspiration: complication rate and clinical course in a single centre. *Dig Liv Dis* 42: 520–523.
- Díez-Redondo, P., Blanco, J., Lorenzo-Pelayo, S., De-la-Serna-Higuera, C., Gil-Simón, P., Alcaide-Suárez, N. *et al.* (2012) A novel system for endoscopic closure of iatrogenic colon perforations using the Ovesco® clip and omental patch. *Rev Esp Enferm Dig* 104: 550–552.
- Donatelli, G., Vergeau, B., Dritsas, S., Dumont, J., Tuszynski, T. and Meduri, B. (2013) Closure with an over-the-scope clip allows therapeutic ERCP to be safely performed after acute duodenal perforation during diagnostic endoscopic ultrasound. *Endoscopy* 45(Suppl. 2): E392–E393.
- Meduri, B., Vergeau, B., Dumont, J., Tuszynski, T., Dritsas, S., Dhumane, P. *et al.* (2014) Endoscopic ultrasound-guided fine needle aspiration and endoscopic biliary drainage following closure of a duodenal perforation with an over-the-scope clip. *Endoscopy* 46(Suppl. 1): E69–E70.

Visit SAGE journals online
<http://tag.sagepub.com>

 SAGE journals