Vacuum sponge therapy using the pull-through technique via a percutaneous endoscopic gastrostomy to treat iatrogenic duodenal perforation

Fig. 1 a Duodenal perforation with free intra-abdominal fluid and air (arrow) in a patient undergoing argon plasma coagulation treatment for recurrent adenocarcinoma. b The inserted sponge (arrow) had dislocated to the stomach at 24 hours after endoscopic placement in the duodenum in order to treat the perforation shown in a.

Fig. 2 a Duodenal perforation. b Sufficiently granulated cavity at 20 days after sponge treatment.

In 2011, a 37-year old patient with a history of familial adenomatous polyposis underwent a subtotal colectomy and resection of the proximal jejunum and distal duodenum with side-to-side duodenoojejunostomy. The procedure was performed for adenocarcinoma of the duodenum (pT3 pN0 L0 V0 R0 G2). In November of 2013, an endoscopically unresectable recurrent adenoma of the anastomosis was seen. Surgical resection was also impossible because of desmoids of the mesentery. Therefore, it was decided intraoperatively to resect the adenoma endoscopically in piecemeal fashion. Histology again showed adenocarcinoma (pT1 R2), and the residual carcinoma was treated at intervals of 6 months with argon plasma coagulation (APC). In June of 2015, the patient developed fever and abdominal pain 24 hours after the last APC therapy.

Computed tomography showed free fluid and air adjacent to the ablation site (Fig. 1 a). Endoscopy confirmed a duodenal perforation (Fig. 2 a). Because of a lack of surgical options, an Eso-Sponge (B. Braun Melsungen AG, Melsungen, Germany) was placed close to the perforation. However, post-interventional computed tomography showed that the Eso-Sponge had dislocated to the stomach (Fig. 1 b). The risk for persistent dislocation was minimized as follows: First, with a Pexact Device II (Fresenius Kabi AG, Bad Homburg, Germany), the anterior gastric wall was sutured (four polydioxanone [PDS] sutures) before a conventional 20-Fr percutaneous endoscopic gastrostomy (PEG) catheter (Fresenius Kabi AG) was inserted using the pull-through technique. Use of the pull-through technique via PEG for sponge placement and necessary changes during treatment reduces the intraluminal distance of the Eso-Sponge.
tube. Thus, the described method represents an easy way to prevent dislocation and so increase the chance of successful treatment.

Competing interests: None

References
4 Fischer A, Baier P, Hopt UT et al. Laparoendoscopic mediastinal vacuum therapy of a gastric perforation through the diaphragm. Endoscopy 2011; 43 (Suppl. 02) UCTN: E393 – 394
5 Fähndrich M, Sandmann M. A new method for endoscopic drainage of pancreatic necrosis through a gastrostomy site using an endosponge. Endoscopy 2014; 46 (Suppl. 01) UCTN: E459

Bibliography
DOI http://dx.doi.org/10.1055/s-0034-1393369
Endoscopy 2015; 47: E567–E568
© Georg Thieme Verlag KG Stuttgart · New York
ISSN 0013-726X

Corresponding author
Hans-Jürgen Richter-Schrag, MD
Hugstetter Street 55
79106 Freiburg
Germany
Fax: 49-761-270-27750
hans-juergen.schrag@uniklinik-freiburg.de

Torben Glatz¹, Andreas Fischer², Jens Hoeppner¹, Robert Thimme², Christine Walker², Hans-Jürgen Richter-Schrag²
1 Department of General and Visceral Surgery, University Hospital of Freiburg, Freiburg, Germany
2 University Hospital of Freiburg, Interdisciplinary Gastrointestinal Endoscopy, Department of Internal Medicine II, Freiburg, Germany

Fig. 3 a The Eso-sponge tube passes through the percutaneous endoscopic gastrostomy. b Endoscopic placement of the sponge in the duodenum with a forceps.