

Endoscopic intracavitary vacuum therapy of Boerhaave's syndrome: a case report

Boerhaave's syndrome is a difficult therapeutic challenge. The transmural laceration of the distal esophagus leads to mediastinal inflammation due to translocation of digestive juices into the open mediastinum. The vacuum-assisted closure therapy is well established in the treatment of chronic surface wounds [1]. The successful adaptation of this technique for intracorporeal wounds has been recently demonstrated for anastomotic leakage after anterior resection of the rectum [2]. We modified this technique in order to successfully treat a case of esophageal anastomotic leakage [3]. We describe here the effectiveness of the procedure in the treatment of Boerhaave's syndrome.

A 78-year-old man presented to the emergency department after collapsing with symptoms that included exsiccosis and fever. Clinical diagnostic procedures included gastroscopy, which revealed a 2-cm esophageal tear just above the Z-line; apart from this the gastroesophageal mucosa was normal and, in particular, there were no signs of ischemia. The defect opened into an abscess cavity of 5 cm in diameter (● Fig. 1).

Under endotracheal anesthesia, a stomach tube (Ventrol Levin size 14, Mallinckrodt, Argyle, New York, USA) was inserted through the nose, the distal tip was led out orally, shortened, inserted in a polyurethane foam sponge (Endo-SPONGE®, B-Braun Medical, BV, Melsungen, Germany), and secured by suture. The sponge was size-adjusted to 1 × 1 × 2.5 cm and grasped with a tripod-equipped endoscope and hence introduced into the abscess cavity under direct vision. After placement of the sponge, a vacuum device (V.A.C. ATS®, KCI USA Inc., San Antonio, Texas, USA) was connected and set to continuous 125 mm Hg sub-atmospheric, high-intensity pressure, resulting in the intracavitary fixation of the sponge and closure of the laceration. After 4 days the suction was discontinued, the drain with attached sponge, gently extracted and replaced as described.

Oral nutrition followed the extubation on day 1 of treatment. The vacuum sponge system was changed once on day 4. By then the aspect of the abscess cavity had changed completely. Parietal necrosis ad-



Fig. 1 Boerhaave's syndrome as seen at initial endoscopy.

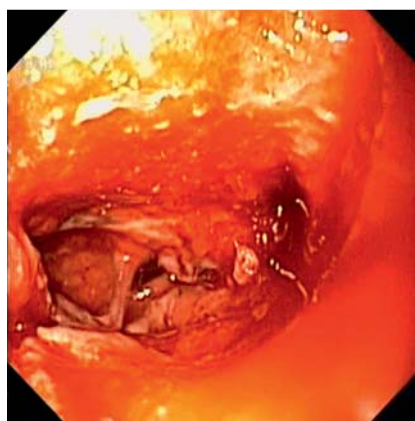


Fig. 2 The mediastinal cavity on day 4, first change of vacuum drainage system.

herent to the sponge was removed with it. Now reduced in size, the cavity was clean and showed developing granulation (● Fig. 2).

A radiological check by computed tomography showed regression of an initial subcutaneous emphysema and no sign of a new abscess formation.

On day 8 of therapy the cavity had further reduced to the diameter of the sponge and contained developed granulation tissue; the endocavitary vacuum therapy was then stopped (● Fig. 3).

At endoscopic follow-up 3 days post-therapy a small diverticulum showed at the place of the laceration; after 10 days a small scar without any stenosis was the only remnant (● Fig. 4).

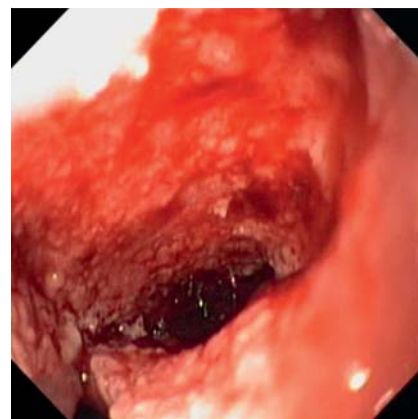


Fig. 3 The mediastinal cavity on day 8, at the end of therapy.

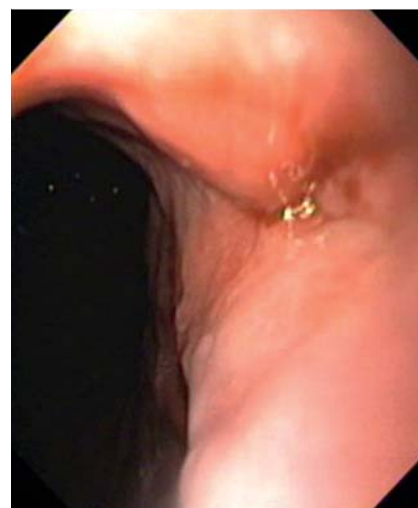


Fig. 4 Follow-up endoscopy at 10 days post-therapy.

The patient had no difficulty swallowing. The endocavitary vacuum therapy represents a new, promising, minimally invasive method in the treatment of esophageal defects. It provides sufficient drainage and occlusion while maintaining regular visual control of the intracorporeal wound.

Competing interests: Dr Loske and Professor Müller have received honoraria from BBD Aesculap for organizing and delivering a workshop dealing with vacuum therapy of anastomotic dehiscence following resections in the upper and lower gastrointestinal tract. T. Schorsch declares no conflict of interest.

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