

Application of the Over-the-Scope-Clip in manifest GI-perforation:

30 days mortality, hospitalisation length and outcome in patients with and without successful perforation closure

Hagel AF, Nägel A, Matzel K, Schneider I, Raithel S, Diebel M, Neurath MF, Raithel M.

Med. Klinik 1, Gastroenterologie, Endoskopie & Chirurgie Universität Erlangen

Introduction

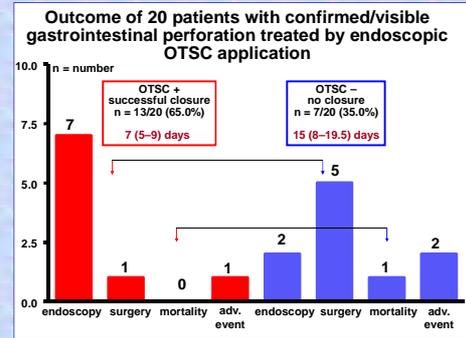
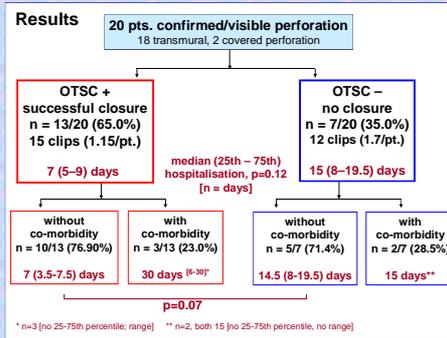
Untreated GI-perforation may lead to escape of air, exsudation of gastric or intestinal secretion, bile or feces into the abdomen with induction of progradient pneumoperitoneum, peritonitis and sepsis with fatal outcome.

The incidence of iatrogenic endoscopic perforations is reported between - 0.01 – 0.60% for diagnostic endoscopies, and - 0.60 – 5.50% for therapeutic endoscopies¹.

The application of the transmural Over-the-Scope-Clip (OTSC) may result in full-thickness, serosa-to-serosa apposition and its use has been described in emergency situations as well as in elective procedures:

- severe GI-bleeding
- spontaneous or iatrogenic perforation
- fistula closure
- closure of the resection site after transmural resection or in NOTES, and
- revisional endoscopy against weight gain after bariatric gastric bypass².

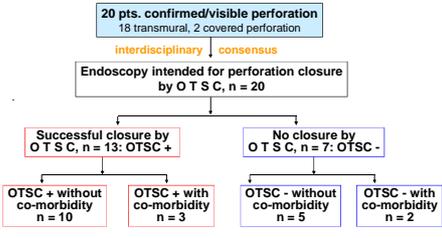
¹ Voermans RP et al. Efficacy of endoscopic closure of acute perforations of the GI-tract. Clin Gastroenterol Hepatol 2012;10:603-609
² Heylen AM. The OTSC in revisional endoscopy against weight gain after bariatric gastric bypass surgery. Obes Surg 2011;21:1629



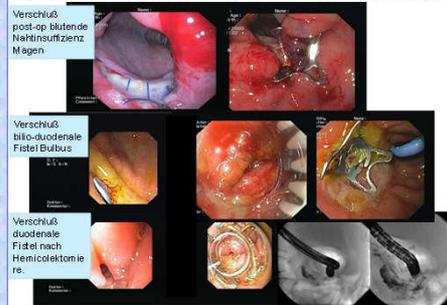
Aim

The present study reports on the efficacy, 30 days mortality and outcome of 20 patients with spontaneous or iatrogenic gastrointestinal perforations using the OTSC

Patient population



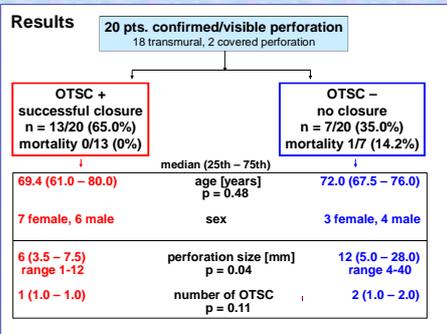
Clinical practice & efficacy of the OTSC procedure



Characterization of GI-perforations for OTSC closure

lesions with low probability for OTSC closure	<ul style="list-style-type: none"> - necrotic, severely inflamed P margin - ischaemic margin, insufficient vascular supply - retracted or fixed tissue (fibrous scar) around the P ostium - P size greater than 12 x 12mm - P exists longer than 72 hours - P proximal to mid esophagus
lesions with medium probability for OTSC closure	<ul style="list-style-type: none"> - shortly (fresh) inflamed P margin - P size between 6-12 x 12mm - P exists 24 – 72 hours - P distal esophagus, proximal stomach or cholecho-bulbar, -duodenal fistula
lesions with high probability for OTSC closure	<ul style="list-style-type: none"> - vital, intact tissue injury/postinterventional P - PEG associated pneumoperitoneum/peritonitis - P size smaller than 6 x 12mm - P exists less than 24 hours - P located distal stomach, rectum

Methods



Discussion & Conclusion

OTSC application in the emergency situation for 20 GI-perforations resulted in successful closure of 65%, while 35% remained and were worsened in 2 patients (10%).

5 of 7 patients with failed OTSC closure required immediate surgical repair.

OTSC application avoided 12 emergency operations in 20 patients, while 1 patient got surgery but the perforation was definitively closed.

Patients with successful OTSC application had a - shorter hospitalization length (7 vs 15 days), - more follow-up endoscopies (7 vs 2 procedures) and - no mortality (0 vs 1 death) than patients with failed OTSC closure.

Perforation size was significantly smaller (6mm) in OTSC+ patients than in OTSC- patients (12mm).