The Ovesco OTSC System was subject of several talks, papers and posters presented on the UEG week in Barcelona. Major topics were the treatment of gastrointestinal defects like ulcers, fistulas and perforations. Also the use of the FTRD System in endoscopic full-thickness resection was discussed.

**OTSC System**

**Long-term experience with 223 OTSC placements in endoscopic routine use**

P. Valli from the University Hospital Zürich, Switzerland, and C. Honegger, Kantonspital Graubünden, Chur, Switzerland, presented data of 223 OTSC placements in a total of 198 interventions at their institution. In this long-term single center study, the four main indications for OTSC placement were acute gastrointestinal perforation (39.9%), fistulas or anastomotic insufficiency (34.3%) gastrointestinal bleeding (23.2%) and diameter reduction of the gastrojejunal anastomosis after bariatric surgery (2.5%).

Immediate success of OTSC deployment was achieved in 84.4% of the cases. The main causes for failure of OTSC placement (15.2 %) were non-suitable anatomic structure (30%), rigidity of the lesion-surrounding tissue (30%) and lesion size exceeding OTSC size (40%).

After 30 days, 61.1% of the cases were granted as successful OTSC treatment. In 34.8% OTSC treatment failed. In 4% of patients no follow up was indicated. After one year, 42.4% of the cases were followed up. 81% of these cases were considered as permanent successful OTSC treatment. 9.5% were declared as failure of OTSC therapy at this time, whereas 9.5% were lost of follow up.

Dr. Honegger and Dr. Valli call the OTSC System a must-have tool when performing frequent interventional endoscopic procedures and declare it a valuable tool to spare the surgeon.

**Establishment of Over-the-Scope Clips (OTSC) in daily endoscopic routine: a long-term single centre experience.** P. Valli, Zürich/Switzerland and C. Honegger, Chur/Switzerland.

**OTSC as a therapeutic option for iatrogenic perforation, anastomotic leakage and chronic fistula in the GI tract**

J. Stückle, Klinikum Augsburg, Germany, presented the results of a prospective study from 12/2009 to 02/2015. A total of 34 patients (mean age 70 years, 20 men, 14 women) were classified into three groups to achieve data about the efficacy and safety of the OTSC System in the treatment of different gastrointestinal diseases. Group I included 10 patients with iatrogenic perforations caused by piecemeal resection of a duodenal (4) or antral (1) adenoma, ERCP (2), diagnostic colonoscopy (2) and accidental perforation of an endosonographic fine-needle biopsy (1). None of the patients needed surgical treatment after OTSC use and all patients survived with an excellent outcome. In one case
(10%) an insufficient closure could be treated conservatively by means of drainage of a retroperitoneal abscess. Group II included 15 patients with anastomotic leakage after bariatric surgery (2), duodenal leakage after pancreas- or aorta-surgery and cholecystectomy (3), leakage after esophageal (5) or colonic surgery (5). Technical success was achieved in 100% of OTSC interventions. However, 6 patients (40%) did not experience sufficient clinical amelioration caused by additional developed leakage and persisting leakage. Further interventional and surgical treatment was needed. Group III contained 9 patients with GI fistulas after PEG-infection (1), acute-necrotizing pancreatitis (2), enterocutaneous and rectovaginal fistula after radiation therapy (2), gastric ulcer and colonic perforation of unknown reason (3). Primarily all 9 patients were treated successfully by endoscopic OTSC therapy. However, 7 patients (77.8%) developed a fistula relapse or new fistulae arose. Endoscopic treatment failed in these cases.

Following the excellent results, Dr. Stückle deems the OTSC System highly effective and safe in the therapy of iatrogenic GI perforations. The possibility of endoscopic treatment prevented these patients from surgical intervention. Also in anastomotic leakage and chronic fistula the OTSC System can be a feasible and helpful device, although additional interventional or surgical procedures may be required.

The over-the-scope clip (OTSC) as a therapeutic option for iatrogenic perforation (IP), anastomotic leakage (AL) and chronic fistula (CF) in the gastrointestinal tract. J. Stückle, J. Brueckner, A. Probst, M. Bittinger, A. Ebigbo, H. Messmann and S. Goelder, Augsburg.

Clinical experience of OTSC in treatment of perforated peptic ulcer

F. Swahn from the Skane University Hospital in Lund, Sweden, presented a poster on the topic of endoscopic treatment of perforated peptic ulcers with the OTSC System. During 2010 - 2015 12 patients with a median age of 72 years (range 33-89 years; 9 men, 3 women) were treated at the time when a CT-scan revealed free air in the abdominal cavity. Ten out of twelve patients (83%) were successfully treated with endoscopic OTSC closure at the first attempt. Two patients were directly converted to surgery due to complex perforation and hard surrounding tissue, which made it impossible to grasp the edges. Follow-up endoscopy four days later demonstrated intact closure in all 10 cases. The OTSC therapy was associated with a smooth postoperative period and shorter hospital stays (4-5 days).

Dr. Swahn assesses the Over-the-Scope Clip System as a good alternative to surgery in selected cases, especially in patients with short medical history of perforation irrespectively of comorbidity and age.


EFTR with defect closure using OTSC for gastric subepithelial tumors

J. Guo from the China Medical University Shengjing Hospital in Shenyang/China presented data of a retrospective study with the aim to evaluate the feasibility and safety of fistula closure using the
OTSC System. From October 2013 to March 2014 a total of 23 patients underwent EFTR for gastric subepithelial tumors originating from the muscularis propria with a tumor diameter ≤2 cm.

The full-thickness resection rate of gastric tumors was 100%. The success rate of defect closure by OTSC was 100%. The average time of defect closure was 4.9 min (2-12 min). All patients experienced no postoperative complications such as bleeding and perforation. The postoperative follow-up time was 1–6 months (mean 3 months), and no OTSC detachment was found.

Guo sees the OTSC as a simple, convenient, safe and effective device to perform defect closure after endoscopic full-thickness resection.


**Comparison of simple suction vs. Twin Grasper in use of OTSC System**

H. Kobara from the Kagawa University, Japan, reported about a retrospective comparative study at five medical centers including 56 patients. The aim of the study was to investigate the better choice of suction methods in OTSC placement by comparing simple suction (SS) versus the Twin Grasper (TG).

In 14 Patients the simple suction method was used, whereas the Twin Grasper was used in 42 patients. Significant differences between the two groups were observed only in the mean procedure time (SS 5.9 min vs. TG 14.1 min).

The clinical success rate (CSR) of SS with diameter ≤10 mm, immediate or acute in refractory bleeding was 100%. The CSR, 78.6% of SS despite technical success (TSR, 100%) had a tendency to decrease due to delayed leakage, compared to TG (TSR, CSR; 88.1%), revealing that TG assist is desirable for leak and fistula with defect of whole layer. However, OTSC using TG had some limitations in situations with diameter >20, chronic, refractory bleeding and fistula.

Kobara assesses that an individualized choice of the suction method, considering the defect size and duration from onset, is most important for OTSC success.


**OTSC for treatment of endoluminal GI defects**

In his poster presentation P.T. Kroener from the Hirschowitz Endoscopic Center of Excellence, University of Alabama, Birmingham/USA, reported about an observational, open-label, retrospective, single-arm case series with the aim to evaluate the clinical outcome of patients treated with the OTSC System.
A total of 116 clips were applied in 90 patients (median age 57 years, 31 women). Indications included GI bleeding (n=21), gastrocutaneous fistulas (n=17), trachea-oesophageal and/or oesophagopleural fistulae (n=20), gastrocutaneous fistulae (n=24), resection of submucosal tumor (n=16), stent fixation (n=10), and perforation closure (n=8). The deployment success rate for the OTSC device was 97.4% (113/116), the clinical success rate was 84.4% (98/116). The clinical success was highest in gastrocutaneous fistulae (95.2%), peptic ulcer bleeding (95.2%), stent anchoring (90%), and closure of perforation (85.7%). The lowest clinical success was seen in the treatment of trachea-oesophageal fistulae (50%). Complications related to the application of the clipping device included minor bleeding (n=2). No further intricacies occurred.

Facing the high success rates, Dr. Kroener assesses the OTSC System a useful device in a variety of primary and iatrogenically-induced endoluminal GI tract disorders, including leaks, bleeding, fistulas and stent anchoring, even in very old and frail patients.


FTRD System

EFTR in the duodenum - a case series

A. Schmidt, Klinikum Ludwigsburg, Germany, presented data of a case series of four consecutive patients with non-lifting adenomas (n=2) or subepithelial tumors (n=2) in the duodenum who underwent endoscopic full thickness resection (EFTR). The aim of the study was to demonstrate the feasibility of EFTR using the FTRD Device. (Remark: FTRD is not intended for use in the upper GI tract).

All duodenal lesions could be resected successfully in this case series. The mean resection specimen was 28.3 mm (range 22-40 mm); the mean procedure time was 67.5 min (50 - 85 min). Minor bleeding was observed in two cases. No complications like immediate or delayed perforation occurred. Histology confirmed complete (R0) full thickness resection in 3 of 4 cases. Endoscopic follow-up after two months was performed in two patients. In both cases, the OTSC was still in place and could be removed without complications, tumor recurrences were not observed.

Dr. Schmidt deemed the FTRD System a safe and effective treatment option in EFTR with the potential to spare surgical resections.

Endoscopic full-thickness resection in the duodenum - a case series. A. Schmidt, B. Meier and K. Caca, Ludwigsburg.

For further information:

Ovesco Endoscopy AG
Dorfackerstr. 26
D-72074 Tuebingen
science@ovesco.com