June 2014 | Prophylactic closure of large mucosal defects after colorectal ESD significantly reduces the inflammatory reaction and abdominal symptoms of patients with neoplasms
Fujihara et al., Department of Gastroenterology and Neurology, Faculty of Medicine, Kagawa University, Kagawa, Japan, assessed the efficacy and safety of a prophylactic closure for large mucosal defects after colorectal ESD.
From April 2010 to December 2012, 68 patients with colorectal tumors were treated with ESD. The prophylactic closure using a conventional clip and the over-the-scope clip (OTSC) system was indicated for patients with excessive coagulation in the muscularis propria or larger resection size. The closure group reduced the peritoneal inflammatory reaction and abdominal symptoms without increasing complications. The closure group also had a significantly lower WBC count (post operative day 1), CRP (post operative day 4) and abdominal pain after colorectal ESD compared to the non-closure group. Perforation occurred in 1 case, and postoperative bleeding in 2 cases, with only 1 bleeding case needing an emergency endoscopy in the non-closure group. One perforation case needed emergency surgery because the endoscopic treatment was ineffective. Without increasing adverse effects, the prophylactic closure efficiently reduced the inflammatory reaction and abdominal symptoms of colorectal ESD in patients with large superficial colorectal neoplasms.

The efficacy and safety of prophylactic closure for a large mucosal defect after colorectal endoscopic submucosal dissection

May 2014 | Sleeve gastrectomy leaks: Closure with the OTSC System
Sleeve gastrectomy is increasing in popularity for the treatment of morbid obesity. The most serious and dreaded complication of this procedure is an anastomotic leak typically at the gastroesophageal junction.
Dr. Ahmad Aly and colleague, Upper GI & Bariatric Unit, Austin Hospital, Heidelberg, Australia present two case reports on managing a sleeve leak with the OTSC System. A 58-year-old woman with a BMI of 45 underwent sleeve gastrectomy without intraoperative incidence. In the case of a 44-year-old woman a conversion from laparoscopic adjustable gastric band to a sleeve gastrectomy was performed. To prevent leakage from the resection line, Seamguard®, a staple line reinforcement product was used in both cases. After initial recovery both patients presented with abdominal pain and fever (8th/30th postoperative day) and a CT scan confirmed leaks at the gastroesophageal junction. Intravenous antibiotics and nutritional support were instituted and fluid collections drained percutaneously and laparoscopically. In the case of the 58-year-old woman conservative management was continued for 6 weeks, but the leak persisted. Therefore it was decided to use the OTSC System. By applying an OTSC clip complete closure was achieved in both patients. After 6 and 8 months respectively, there was no evidence of further leaks and inflammatory markers remained normal. As spontaneous closure of a gastric stapled line fistula is rare, many patients require further complex surgery for definitive closure. The OTSC System has the potential to significantly simplify the management of leaks after sleeve gastrectomy by offering a simple endoscopic solution.

The use of over the scope clip (OTSC) device for sleeve gastrectomy leak

April 2014 | Multipurpose use of the OTSC System to treat endoluminal gastrointestinal disorders
Recently Mönkemüller et al. from Birmingham, AL, USA report the analysis of an observational retrospective case series of 16 patients (median age 65.8 years) with mixed indications for the treatment with the OTSC System. The overall success rate of 75% is well in line with other reports and with the meta-analyses of Weiland et al. with a 71% success rate in fistulas and anastomotic leaks, 79% in acute perforations, and 86% in acute GI hemorrhages.

The range of indications included gastrointestinal bleeding (n=6), gastrointestinal fistulas (n=3), esophagotracheal and/or esophagoptic fistulae (n=3), resection of submucosal tumor (n=2), stent fixation (n=1), and anastomotic leak after esophagectomy (n=1). The overall per case success rate was 70% (14 of 20 applications). Mean follow-up was 10 months (range 1–10). There were no complications (0%) related to endoscopy, sedation or application of the clipping device.

The authors pointed out in the discussion that OTSC allows for the entrapment of a larger amount of tissue, allowing closure of fistula holes and, as shown in these cases, hemostasis superior to other devices. In their critical remarks they also discuss situations where they experienced certain limitations to the system such as the tubular structure of the esophagus which at times might impede an adequate apposition of the device. Comment Ovesco: especially in cases where the apposition of the OTSC System might seem difficult, the OTSC Anchor is usually a very useful device to facilitate the successful application of a clip with the Anchor概念股 as guidance wire for both scope and System (e.g. esophagus, cardia, postpyloric duodenum).

In essence the authors draw a very positive conclusion stating that “the OTSC device is ideally suited to treat soft tissue leaks or fistulizing lesions and high-risk bleeding lesions such as ulcers in the posterior duodenum or Dieulafoy’s lesions” with the main underlying mechanism being compressing the surrounding tissue around the vessel. They continue “...The OTSC device may become a better device to treat bleeding ulcers located in difficult positions because of its barrel-shaped transparent cap design which allows it to suction the bleeding lesion. It is well known that these bleeding ulcers and lesions are of a higher risk and also more difficult to treat because of their awkward location and/or position...” This statement is followed by an elaborate discussion of the shortcomings of alternative devices. It is important to underline also that the authors support “…multiple OTSC applications in a single session...” as sometimes being useful and allowing approximation of tissue to facilitate subsequent closure. “Interestingly, the device does not tear tissue, as it snaps it together. So far, there have been no reports of GI wall tearing...” Finally the authors discuss the issue that once OTSC is deployed it cannot be removed easily, and report of two methods they have been using in this case: the “wire technique” as described by Mönkemüller et al., and the use of an Nd:YAG laser, as described by Fährnich et al. earlier.

Comment Ovesco: we are aware of this issue and are currently finalizing the development of an own, easy to use clip cutter.

Multipurpose use of the ‘bear claw’ (over-the-scope clip system) to treat endoluminal gastrointestinal disorders
April 2014 | Conference report | 44th DGE-8V Congress, Hamburg

The 44th DGE-8V Congress of the German Society for Endoscopy and Imaging Procedures/Diagnostics was held in Hamburg, April 3–5, 2014 under the presidency of Prof. Dr. Thomas Rösch.

Again a significant number of both oral presentations and posters have been featured at this year’s event. In summary they all reported their mostly positive experiences with the OTSC System in all main indications. In addition our products were featured in several hands-on courses alongside the conference (Chairs: Hochberger J., Maises J., Kraus F.). Ovesco presented their new products, the DC Clip Cutter and the FTRD device which are both due to be launched later this year. The reaction of the medical world was more than promising.

• **Neo Clips für Blutung und Verschlusstechniken**

  Caca K. Ludwigshafen, Germany

  K. Caca gave a talk on “New tools for the treatment of GI-hemorrhage and perforation.” Even though also mentioning other devices he mainly elaborated on the OTSC System. In his summary of clinical cases he took his home message was: “the OTSC device achieves hemostasis more quickly than all other devices and is more effective particularly regarding acute, difficult and heavy bleedings.” For the treatment of perforation OTSC was the standard choice. Also, he showed first experiences with the all new DC Clip Cutter device as an important tool for removing the OTSC which will be launched later this year.

• **Update Endoskopie – meine Top papers**

  Häfler M. Vienna, Austria

  M. Häfler updated the plenary session on important recent papers on GI hemorrhage. There he cited two papers by Manta et al. (2013) and Chan et al. (2014) where OTSC had proven to be safe, effective and efficient also in severe bleeding when other procedures had already failed.

**Over-the-scope clip (OTSC) represents an effective endoscopic treatment for acute GI bleeding after failure of conventional techniques**


**Endoskopische Behandlung von akuten Blutungen mit einem Over-The-Scope Clip (OTSC)**

Braun A, Richter-Schrug HJ, Fischer A, Freiburg, Germany

• **Clinical experience in the treatment of perforations, leakages, and fistulas in the GI tract with the Over-The-scope clip (OTSC)**

  J. Stückle et al. report their retrospective results in the standard indications of OTSC.

  21 patients (Median 69 years (30–87), m=11, f=10) were treated for leakages and fistulas (n=11, 52%) due to anastomotic leaks. 5 patients had complications due to diagnostic or therapeutic endoscopy. 2 patients had fistulas due to necrotizing pancreatitis. 2 patients suffered from a persistent PEG fistula. Technical success was reported in 20/21 cases (95%). All 5 endoscopic complications could successfully be treated with OTSC. 7/11 anastomotic leaks could successfully be treated as well. One patient with duodenal leak due to acute necrotizing pancreatitis and a patient with perforated antrum died due to sepsis. The treatment of persistent PEG fistula was clinically not successful in this series.

  The authors conclude that altogether the treatment of perforations, leakages, and fistulas with OTSC is very promising, and point out that this is especially true for the management of complications during endoscopy and surgical complications like anastomotic leakage.

**Klinische Erfahrungen bei der Behandlung von Perforationen, Leckagen und Fisteln im Gastrointestinaltrakt mit dem Over the scope Clip (OTSC)**


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The authors conclude in their discussion that OTSC is the preferred primary therapy of smaller post-interventional leakages. It might also be used in combination where cSEMS treatment was incomplete. They conclude that the longer treatment period with cSEMS and the higher complication rate might be due to sicker patients, but also due to the relevant dislocation rate of cSEMS.
April 2014 | Efficacy and safety of OTSC Proctology confirmed by clinical data at two major German conferences

40th Congress of the German Society for Coloproctology, April 3–5, 2014 in Munich under the presidency of Prof. Dr. h.c. W. Hohenberger

Prospective multicentric trial shows 90% success rate for OTSC Proctology in anal fistula closure

R. Proost and co-authors, Stuttgart and Mannheim, Germany, presented data from a prospective multicentric trial including 20 patients treated with OTSC Proctology for anal fistula. 18 of 20 patients (90%) reached the treatment success defined as clinical healing of the anal fistula and absence of recurrence at 6-month postoperative period. The authors conclude that OTSC Proctology is a newly minimally invasive device for the treatment of anorectal fistula which is procedurally simple and time efficient. The risk profile is favourable, without relevant risk of fecal incontinence.

Anorektaler Fistelverschluss mittels OTSC Proctology: Ergebnisse einer prospektiven Beobachtungsstudie

R. Proost, A. Joss, A. Herold, D Bussen, W. Ehni
Proktologisches Institut Stuttgart & Enddarmzentrum Mannheim

The 131st Congress of the German Society for Surgery, March 25–28, 2014 in Berlin under the presidency of Prof. Dr. J. Jaehne

OTSC Proctology in retrospective analysis of mixed case series: efficacy and safety confirmed

S. Dango and colleagues, Kassel and Goettingen, Germany presented their experience using OTSC Proctology in the treatment of transspincteric anal fistula. They conclude that OTSC placement is a promising sphincter-preserving minimally invasive method with considerably less complications than in more invasive types of surgical fistula treatment.

Efficacy and safety of the over-the-scope clip in the treatment of anal trans-sphincteric fistula

S. Dango, D. Schrader, M. Ghadimi, F. Antonakis, R. Hestener
Dept. of General and Visceral Surgery, Rotes Kreuz Krankenhaus, Kassel and Dept. of General and Visceral Surgery, University Hospital, Goettingen

R. Menningen et al., Muenster, Germany report about their first experience with OTSC Proctology fistula closure in patients who had recurrence after fistula surgery. 9 consecutive patients were included into the trial. The authors conclude that OTSC is a safe and effective procedure for closing recurrent anal fistula even in more complex cases with Crohn’s disease or multiple surgical pretreatments.

Verschluss analer Rezidivfisteln mit dem OTSC Proctology System

R. Menningen, M. Laukoetter, N. Senninger, E. Rijken
Klinik für Allgemein- und Viszeral chirurgie, University Hospital, Muenster
For more detailed information on the studies see reports in a pdf file on www.ovesco.com.

April 2014 | The OTSC System: a surgery-sparing device for the management of iatrogenic duodenal perforation during endoscopic ultrasound

Duodenal perforations are a rare but serious complication during endoscopic ultrasound examinations. The closure of these perforations with the OTSC System can be a surgery-sparing approach. Three case studies published by Dr. Silvia Saladot et al., Dept. of Digestive Disease, University Hospital, Barcelona, Spain and by Dr. Gianfranco Donatelli and colleagues, Endoscopy Unit, Hôpital Privé des Peupliers, Paris, France demonstrate the successful use of the OTSC System in cases of iatrogenic duodenal perforation. Two patients (aged 88 and 67) presented with cholangitis, one 74-year old woman with obstructive jaundice. In all three cases perforations occurred during endoscopic ultrasound procedures. Two perforations were located in the duodenal bulb, one at the superior duodenal flexure. By deploying an OTSC clip successful duodenal closure was achieved in all cases, no further surgical interventions were required. The two patients with cholangitis underwent therapeutic endoscopic retrograde cholangiopancreatography (ERC) afterwards without any complications. Oral food intake was re-started after 2 or 5 days, respectively.

Endoscopic closure of duodenal perforation with an endoscopic ultrasound-guided cholangiopancreatography

Saladot S, Gomals JB, Maisterra S, Pons C, Busquets J, Fabregat J
Rev Esp Enferm Dig. 2012 Sep;104(9):489-90

March 2014 | OTSC@FISMAD, Naples, Italy: 77% success rate in anastomotic leak treatment

At the 20th National Congress of Digestive Diseases, Naples, Italy, March 19-22, MA Bonino and colleagues, Department of Surgery, Turin University reported about a consecutive series of 26 patients treated with OTSC for postsurgical colorectal leaks. The mean defect size was 8.7 mm. in 10 cases there were acute and in 16 cases chronic leaks (fistula). 4 cases were complicated by recto-vaginal, 3 by recto-vesical and 7 by colo-cutaneous fistula. In 3 cases OTSC was used to complete earlier vacuum sponge therapy. The overall success rate was 77% (20/26), 90% in acute (9/10) and 69% (11/16) in chronic cases. There were no OTSC-related complications, additional surgery was needed in 2 cases.

Anastomotic leakage is a serious and non infrequent complication in colorectal surgery. The reported success rate ranges from 1 to 39%. Clinically relevant leaks are commonly seen in 3-6% of the cases. OTSC closure of colorectal post-surgical leaks and fistula is a safe technique with a high success rate.

Efficacia della clip OTSC per il trattamento di deiscenze e fistole chirurgiche del colon-retto

OTSC System in the treatment of colorectal post-surgical leaks and fistulas

Bonino MA, Verra M, Salvià A, Bulano A, Rapetti L, Arezzo A, Morino M
January 2014 | OTSC in mucosal flap closure after peroral endoscopic myotomy (POEM)

Maintaining the integrity of the mucosal flap and the reliable closure of mucosal entry during peroral endoscopic myotomy (POEM) is paramount in preventing leakage of esophageal contents into the mediastinal space. In a recently published case series (n=2) Payal Saxena, MD and colleagues, Dept. of Medicine and Divic of Gastroenterology and Hepatology, Johns Hopkins Medical Institutions, Baltimore, USA describe their positive experience with the application of the OTSC System for reliable and easy flap closure after POEM.

Both patients presented with dysphagia and regurgitation and were diagnosed with achalasia. It was decided to proceed with POEM. After myotomy of the inner circular muscle bundles it was noted that the mucosal incision had elongated from 2 cm to 4 cm in one case. Whereas the distal part of the mucosal entry was successfully closed with conventional hemostatic clips (Resolution Clip, Boston Scientific) in both cases, closure of the proximal half was not possible even with different clips. As the clips were noted to slip to one side of the mucosal incision, there was a risk of displacing clips into the submucosal tunnel. Hence, all partially attached clips were removed with a biopsy forceps. Finally, complete closure of the mucosal incision was performed with the OTSC clip and the OTSC Twin Grasper in both cases. Contrast swallow of the esophagus the following day revealed no leaks in either patient.

The authors state that the OTSC clip provides more durable closure than standard hemostatic clips and full-thickness closure is achievable due to greater compressive force. Considering that failure of closure risks serious adverse events, like mediastinitis and sepsis, these features of the OTSC clip appear even more attractive.

An alternative method for mucosal flap closure during peroral endoscopic myotomy using an over-the-scope clipping device

Saxena P, Chavez YH, Kord Valeshabad, A, Kallo AN, Khashab MA
Endoscopy. 2013 Jul;45(7):579–81

March 2014 | Management of esophageal perforation with the OTSC System – four new case studies by different authors report favourable results.

Spontaneous or iatrogenic esophageal perforation is a life-threatening condition that can lead to severe mediastinitis, sepsis and multiple organ failure. Endoscopic management has contributed to the decrease of morbidity and mortality associated with surgical repair. Four different case reports lately published by Dr. Alexander Braun et al., Div. of General Surgery, University of Freiburg, Germany, Dr. Davide Bona et al., Div. of General Surgery, University of Milan, Italy and Dr. Alexandre Ferreira, Dept. of Gastroenterology and Hepatology, Hospital de Santa Maria, Lisbon, Portugal illustrate the successful closure of esophageal perforations with the OTSC System. Two patients presented with Boerhaave’s syndrome, one patient had an iatrogenic perforation and one patient suffered from a perforation caused by a catheter. In all four cases a minimally invasive approach with the OTSC System was chosen. Two patients were treated with the OTSC clip within 12 hours. Although the two other patients were admitted to hospital not until after 48 h after an episode of vomiting, late management of the esophageal perforation with the OTSC System was successful. After complete closure of the defect, all patients were kept on antibiotic therapy and were discharged in stable condition after 10 days (patient with iatrogenic perforation), 21 days (patient with perforation caused by a fishbone) and 20 or 28 days respectively (patients with Boerhaave’s syndrome). 3-month follow-up revealed a free esophageal passage and correct placement of the OTSC clip. The OTSC clip is a new, safe and effective treatment alternative for the management of esophageal perforation. Due to the endoscopic approach and short hospital stay, the procedure is more cost effective than conventional surgical procedures.


Management of Boerhaave’s syndrome with an over-the-scope clipping device

Bona D, Aiolli A, Rusa E, Bonavina L

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February 2014 | New case series on use of OTSC for treatment of refractory upper GI bleeding

Apart from using the OTSC System in acute and chronic perforations (i.e. perforations, anastomotic leakage, fistulae) the authors of the renowned Institute of Digestive Disease, Department of Surgery, Chinese University of Hong Kong are reporting on patients in whom OTSC was used for endoscopic control of refractory or major upper gastrointestinal bleeding from lesions in the gastrointestinal tract between 1 July and 31 December 2012. Nine patients were included (median age 72.5 years, range 20–91) with bleeding gastric ulcers (n=2), bleeding duodenal ulcers (n=5), bleeding gastrointestinal stromal tumor in the stomach (n=1), and bleeding from ulcerative carcinoma of the pancreas (n=1). The median size of the ulcers was 2.5 cm (range 1–4). Six of the nine patients had undergone previous endoscopic hemostasis. Technical success (defined as hemostasis achieved at index endoscopy) was achieved in all patients and the clinical effectiveness was 77.8% (defined as technical success with no rebleeding). All procedures were carried out by two experienced endoscopists. Those two patients that experienced rebleeding suffered from complex duodenal ulcer. One of them had been treated with radiotherapy for residual disease after resection of common bile duct chol- angiocarcinoma. After several additional EGDS, transarterial embolization, and one surgical intervention which all failed to stop the bleeding, OTSC was performed eventually. The second patient bled from the inferior pancreaticoduodenal artery and needed arterial embolization as well.

The authors discuss a meta-analysis of 1156 patients in 15 randomized trials where endoclips were shown to be superior to injection alone, and as effective as heater probe treatment. The overall rate of rebleeding in those conventionally treated patients ranged between 7.1% and 9.5% though. Since rebleeding correlates with the adverse outcome of this indication they speculate that control of bleeding would have a positive impact on patient outcome. Even though the study was carried out in patients with complex duodenal ulcer and underlying malignancies the technical success rate of OTSC was 100%. They also point out that usually in cases like these the application of conventional clips is difficult, the repeated application of heater probe being associated with a higher risk of perforation. Whereas the application of OTSC allows for larger amounts of tissue and constitutes a safe procedure (5% of the patients that had a perforation were admitted to ICU and only in 1 patient a temporary drainage was necessary). The authors conclude that the use of OTSC is a safe and effective method of endoscopic hemostasis for major bleeding from miscellaneous upper gastrointestinal causes and should be considered in refractory bleeding after conventional endoscopic hemostasis, before surgery or angiographic embolization.

Comment by Ovesco: a prospective controlled randomized multicenter trial with 64 patients with recurrent upper GI bleeding is recruiting in Germany (Endoscopic Treatment of Recurrent Upper GI Bleeding: OTSC [Over the Scope Clip] Versus Standard Therapy (STING). ClinicalTrials.gov Identifier: NCT01388800)


February 2014 | Retrospective study on efficacy and safety of the OTSC System in the treatment of GI bleeding, fistula and perforation: primary technical success rate 91.3%, durable clinical success rate 82.6%

Dr. Norko Nishiyama and colleagues, Dept. of Gastroenterology and Neurology, Kagawa University, Japan, recently presented their retrospective study on efficacy and safety of the OTSC System in endoscopic closure of gastrointestinal bleeding, fistulas and perforations, concluding that the OTSC System is a highly useful device that can safely be utilized for these indications. Their case series consisted of 23 consecutive patients treated between November 2011 and September 2012 (mean age 77 years) including the following indications for OTSC application: stopping GI bleeding (n=9), closing perforation (n=10), closing chronic fistula (n=4) and prevention of post endoscopic submucosal dissection (ESD) duodenal artifical ulcer perforation (n=1). One patient had a perforation that formed a fistula. Lesions were located in the esophagus (n=1), the stomach (n=10), the duodenum (n=5), the sigmoid colon (n=3) and in the rectum (n=4). In 8 patients other therapies preceded OTSC application (e.g. conventional hemostatic clips, local injections, hemostatic coagulation forceps). Median follow-up time was 67 days. The primary technical success rate was 91.3% (21/23). In two cases application of the OTSC clip was not possible due to insufficient passage or access (complete closure by using only OTSC clips) was 82.6%. Major contributing factors for OTSC failure were a large lesion size (greater than 20 mm) and a delayed diagnosis (more than 1 week). No patient reported any complications associated with OTSC placement. In conclusion, the OTSC is an interesting and novel device that enhances the armamentarium of therapeutic gastroenterologists.


March 2014 | OTSC: easy to use with good results, decreasing morbidity and mortality in diagnostic and therapeutic endoscopy

In the quest to describe the use and the clinical applications of OTSC System in an environment where endoscopic and surgical techniques are increasingly more complex and frequent Singhal et al. have searched and analysed the literature using the key words „endoscopy“ and „over-the-scope clip“ in order to identify human studies evaluating the application of OTSC from January 2001 to August 2012. The indication, efficacy, complications, and limitations were recorded. The overall success rates of OTSC based on the current literature are in the range of 75% to 100% for closure of iatrogenic gastrointestinal perforations, 38% to 100% for closure of gastrointestinal fistulas, 50% to 100% for anastomotic leaks, and 71% to 100% for bleeding lesions. OTSC has shown 100% success rates in managing postbariatric surgery weight gain secondary to dilation of the gastro- jejunostomy.

The authors conclude that OTSC is easy to use with good results, thus decreasing the morbidity and mortality associated with complications secondary to both diagnostic and therapeutic endoscopy and avoiding surgery in many situations.


February 2014 | OTSC in mucosal flap closure after peroral endoscopic myotomy (POEM)

Maintaining the integrity of the mucosal flap and the reliable closure of mucosal entry during peroral endoscopic myotomy (POEM) is paramount in preventing leakage of esophageal contents into the mediastinal space. In a recently published case series (n=2) Payal Saxena, MD and colleagues, Dept. of Medicine and Div. of Gastroenterology and Hepatology, Johns Hopkins Medical Institutions, Baltimore, Maryland, USA describe their positive experience with the application of the OTSC System for reliable and easy flap closure after POEM.

Both patients presented with dysphagia and regurgitation and were diagnosed with achalasia. It was decided to proceed with POEM. After myotomy of the inner circular muscle bundles it was noted that the mucosal incision had elongated from 2 cm to 4 cm in one case. Whereas the distal part of the mucosal entry was successfully closed with conventional hemostatic clips (Resolution Clip, Boston Scientific) in both cases, closure of the proximal half was not possible even with different clips. As the clips were noted to slip to one side of the mucosal incision, there was a risk of dislocating clips into the submucosal tunnel. Hence, all partially attached clips were removed with a biopsy forceps. Finally, complete closure of the mucosal incision was performed with the OTSC clip and the OTSC Twin Grasper in both cases. Contrast swallow of the esophagus the following day revealed no leaks in either patient.

The authors state that the OTSC clip provides more durable closure than standard hemostatic clips and full-thickness closure is achievable due to greater compressive force. Considering that failure of closure risks serious adverse events, like mediastinitis and sepsis, these features of the OTSC clip appear even more attractive. An alternative method for mucosal flap closure during peroral endoscopic myotomy using an over-the-scope clipping device. Saxena P, Chavez YH, Kord Valeshabad A, Kalloo AN, Khashab MA. Endoscopy. 2013 Jul;45(7):579-81. doi: 10.1055/s-0032-126398

January 2014 | Avoiding Surgery: Minimal invasive endoscopic management of an iatrogenic colon perforation

Iatrogenic lesions of GI organs are a significant complica- tion of diagnostic or interventional endoscopic procedures. Dr. Pilar Diez-Redondo and colleagues, Dept. of Gastroenterology, Hospital Universitario, Río Hortega, Valladolid, Spain present a case report on OTSC clipping for colon perforation closure: For assessment of iron deficiency an 82-year old woman was referred to the endoscopic unit. A gastro- scope confirmed a hiatal hernia. Colonoscopy revealed no abnormalities, 18 cm proximal to the anus an iatrogenic perforation with a size of 12 mm occurred. To close the perforation endoscopically an 11a OTSC clip was chosen. The target tissue and a piece of omentum were pulled into the applicator cap by suction and the clip released successfully, approximating the edges of the lesion. A small residual re-
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December 2013 | First report on successful management of delayed presentation of Boerhaave’s syndrome

Current guidance has advocated surgery for delayed presentations of Boerhaave’s syndrome with evidence of mediastinal contamination. However, Dr. Eamon Ramhamadany and colleagues, Dept. of General Surgery, University Hospital Coventry and Warwickshire, UK, present the successful management of Boerhaave’s syndrome in a 69-year-old man. Since there was no improvement of the leak after a period of conservative management, the man presented to hospital with an episode of forceful vomiting. A chest radiograph was performed revealing a pleural effusion. After several days without improvement a CT chest showed an oesophageal perforation with mediastinitis. Because of the size of the defect and the delay in presentation, it was decided not to perform surgery, but to apply the OTSC clip for endoscopic repair. A contrast swallow confirmed the correct placement of the clip and the successful closure of the leak. After a total parenteral nutrition for 3 days, the patient was fed via a naso-jejunal tube. Intravenous antibiotics and bilateral chest drains were added to a resolving mediastinitis. The whole procedure resulted in a favourable outcome without the need for surgery.

The authors conclude that the OTSC can be used to manage patients with delayed presentation of Boerhaave’s and that further evaluation is needed to define the indications for minimally invasive techniques like the OTSC System.

December 2013 | Management of postoperative gastrointestinal leakages and fistulas with the OTSC System: long-term success rate of 79% (n=114)

Dr. Rudolf Menningen and colleagues, Dept. of General and Visceral Surgery, University Hospital of Muenster, Germany, recently presented a study on efficacy and safety of the OTSC System in endoscopic closure of postoperative gastrointestinal leakages and fistulas, concluding that the OTSC System dramatically increases the possibilities of defect closure by endoscopic clipping as opposed to conventional endoclip.

Their case series of 14 consecutive patients (May 2011–November 2012) included patients with anastomotic leakage (n=9), treatment of a perforation after fundoplication (n=1) and post-operative fistulas (n=7, colo-cuta-neous, enterocuta-neous, gastrobrachial, rectourethral, rectocutaneous, gastropleural). 11 of the 14 lesions were chronic (treated by OTSC later than postoperative day 14) and in 9 patients other therapies preceded OTSC application (e.g. covered stent application, fibrin glue injection). Median follow-up time was 5.5 months.

The primary procedural success rate was 100%. 3/14 patients (21%) required further treatment during follow-up. Reasons for OTSC failure were massive fibrosis of the fistula and application in an actively inflamed bowel segment in Crohn’s disease. However, unsuccessful OTSC treatment did not impair subsequent surgical therapies. Complete and clinically durable closure of the defects was achieved in 79%, indicating from the authors’ point of view that the OTSC will play an important role in the therapy of post-operative leakages.


November 2013 | OTSC in endoscopic treatment of acute GI bleeding after failure of conventional techniques: primary hemorrhage of 97%

The OTSC System can overcome the limitations of conventional clips in the treatment of patients with acute GI bleeding by providing compression of large amounts of tissue, leading to a more efficient hemostasis. Dr. R. Manta and colleagues, Gastroenterology and Endoscopy Unit, New S. Agostino Hospital, Modena, Italy draw this conclusion from retrospective analysis of a consecutive case series of 30 patients with severe acute GI bleeding treated with the OTSC System after failure of conventional techniques.

Data were collected from six high-volume endoscopy units in a period between December 2011 and September 2012. All 30 patients suffered from bleeding lesions unresponsive to saline/adenalin injection and through-the-scope clipping located in the upper and lower GI tract in 23 and 7 cases, respectively. Bleeding lesions included duodenal ulcer (n=12), gastric ulcer (n=6), Mallory-Weiss (n=2), Dieulafoy (n=2) and surgical anastomosis (n=1) in the upper GI tract and endoscopic mucosal ressection (n=5), endoscopic submucosal dissection (n=1) and colonic diverticulum (n=1) in the lower GI tract.

Primary hemostasis with OTSC was achieved in 29 of 30 cases (97%). Rebleeding in two cases was successfully treated with injection of saline and adrenaline. Endoscopic follow-up after 2–4 days and after 1 month revealed correct placement of the OTSC clip and no procedure-related complications. Thus, the OTSC is an effective and safe device for treatment of acute GI bleeding and represents a useful adjunct to the therapeutic armamentarium in endoscopic emergencies.

Over-the-scope clip (OTSC) represents an effective endoscopic treatment for acute GI bleeding after failure of conventional techniques


October 2013 | OTSC System: Effective closure of esophageal fistula following total gastrectomy

Postoperative leaks after total gastrectomy are among the most common early complications. Dr. C. N. Ferreira and colleagues, Serviço de Gastroenterologia e Hepatologia, Hospital de Santa Maria, Lisbon, Portugal report on a 78-year old woman presenting with melena. She was diagnosed with gastric adenocarcinoma and treated with total gastrectomy and esophageogjunal Roux-en-Y anastomosis. On the fifth postoperative day she developed a septic condition caused by a fistulous orifice just above the intact anastomosis. Due to her poor general condition a surgical intervention was not feasible. Thus, it was decided to treat the fistula endoscopically by means of the OTSC clip. By using the OTSC Twin Grasper to approximate the edges of the fistula and application of an OTSC clip the orifice was effectively closed. The patient was discharged in stable condition two weeks later. In a commentary to this publication Dr. David
Robbins, Assistant Editor of the Journal Gastrointestinal Endoscopy emphasizes the significantly higher strength of the OTSC clip for hemostasis and closure of GI tract wall in comparison to conventional endoscopic clips.

Total gastrectomy in an elderly patient complicated by esophageal fistula: rescue by the over-the-scope-clip

October 2013 | Efficacious OTSC hemostasis in Dieulafoy’s gastric lesion resistant to conventional endoscopic treatment
Dr. B. Mangiavillano and colleagues, Gastrointestinal Endoscopy, Azienda Ospedaliera San Paolo University, Hospital-University of Milan, Italy, present a case study of a 69-year-old woman with an episode of melena. EGD showed a Dieulafoy’s bleeding lesion in the proximal third of the posterior wall of the stomach. The lesion was treated with an epinephrine injection and application of two conventional working-channel delivered metallic clips and the patient was discharged two days later. After three days the patient again presented with melena. Blood transfusions were necessary. An EGD was performed, showing no sign of an actively bleeding ulcer. The patient was admitted to hospital and suffered from another episode of melena with hemorrhagic shock. The now actively bleeding Dieulafoy’s lesion was then treated with an OTSC clip, stopping the hemorrhage completely and persistently. Endoscopic follow-up after 30 days displayed correct placement to the OTSC and no signs of further bleeding.

Successful treatment with an over-the-scope-clip of Dieulafoy’s gastric lesion resistant to conventional endoscopic treatment

September 2013 | OTSC in post-surgical complications: retrospective case review confirms high clinical efficacy
Dr. Alisa Coker and colleagues, Dept. of Surgery, University of California San Diego, USA, report on their experience with the OTSC System in a retrospective review of all cases treated between August 2011 and March 2012. All 10 patients had clinically significant gastrointestinal post-surgical complications. Indications included: gastric leaks after sleeve gastrectomy (n=4), post-operative colonic leak following extended hemicolectomy and palliative debulking (n=1), gastric-gastric fistulas following Roux-en-Y gastric bypass (n=2), esophageal perforation (n=3). Three of the four patients with gastric leaks had undergone previous unsuccessful attempts at endoscopic repair (stenting, fibrin glue application, traditional clipping, endoscopic suturing). The overall clinical success rate was 70%. Re-surgery was needed in the two cases of gastric-gastric fistulas. In the colonic leak patient the clip placement procedure was aborted due to a fixed tortuous sigmoid colon as a result of the metastatic disease and adhesions, limiting endoscope passage. For the subgroup of seven patients treated for leaks and perforations a success rate of 67.5% with complete resolution was achieved over the mean follow-up period was 53 days. No complications occurred. The authors conclude that the OTSC System is simple to use, safe and effective with a great potential for success in a broad number of applications. For the treatment of gastric leaks following sleeve gastrectomy the OTSC System is their first-line treatment.

Initial Experience with an Innovative Endoscopic Clipping System

September 2013 | Preventive closure of duodenal lesion after endoscopic submucosal dissection with the OTSC System to obviate delayed perforation
The two case reports published in the journal Digestive Endoscopy by Dr. Ines Maria Mori and her colleagues, Dept. of Gastroenterology and Neurology, Faculty of Medicine, Kagawa University, Japan illustrate the complete closure of secondary duodenal ulcers after endoscopic submucosal dissection (ESD) with the OTSC System without any complications. Two elderly patients were diagnosed with early duodenal cancer. ESD was carried out successfully removing the lesions on bloc. In one case the muscle layer was slightly injured but not perforated. Because of the exposure to bile and pancreatic juices the risk of post-ESD delayed perforation is much higher in the duodenum than in other parts of the gastrointestinal tract. As conventional clips are less suitable due to small size and insufficient grasping power, Dr. Mori and his team used the OTSC System to close the lesion completely without any complications. The ulcer closure procedure time was 7 resp. 10 min. In both cases control endoscopy revealed a complete healing of the ulcer after 30 days. Dr. Mori and his colleagues consider the OTSC System to be one of the most effective devices to prevent delayed perforations in post-ESD ulcer.

Successful closing of duodenal ulcer after endoscopic submucosal dissection with over-the-scope-clip to prevent delayed perforation

September 2013 | First two publications of endoscopic closure of gastrocolic fistula using the OTSC System
Dr. Alberto Murino, Wolfson Unit for Endoscopy, St Mark’s Hospital, London, UK, and his colleagues report on a successfully treated gastrocolic fistula using the OTSC System. A migrated PEG tube caused a gastrocolic fistula in the transverse colon in a 41 y/o male with cerebral palsy. The fistula led to extensive diarrhea and mouth odor. The CT showed an involvement of the greater curvature of the stomach. By using the OTSC Anchor to approximate the tissue the OTSC clip was released precisely closing the fistula orifice completely. Diarrhea and mouth odor were stopped. The 3 months’ follow-up revealed a complete healing of the fistula. The second case report published in the World Journal of Gastrointestinal Endoscopy by Prof. Klaus Mönkemüller and colleagues, Division of Gastroenterology and Hepatology, Basel Hirschlorz Endoscopic Center of Excellence, University of Alabama, Birmingham, USA, describes the effective endoscopic closure of a large gastrocolic fistula with the OTSC System in an extremely marnathomized patient with complicated surgical upper GI anatomy. The 47 y/o man presented with chronic diarrhea and severe weight loss of 32 kg in a 1-year period. He had a history of chronic pancreatitis, alcoholism and Bilroth II gastrojejunostomy due to a perforated peptic ulcer. Endoscopy showed a clean based ulceration at the anastomosis and a second orifice that represented the fistula. Connecting stomach and colon, the fistula measured about 10–12 mm. Because of the patient’s poor clinical status he could not benefit from a surgical intervention so an endoscopic procedure using the OTSC System was chosen. To ensure a definitive closure of the fistula the OTSC Twin Grasper was used to approximate the edges of the fistula. The application of the OTSC led to a complete closure of the gastrocolic fistula which was confirmed by an endoscopy. For Prof. Mönkemüller this case “adds to the growing evidence that the OTSC System is a useful device to treat clinically significant endoluminal GI defects.” He believes that “this device is a major breakthrough for the management of various types of discontinuous fistulae or fistulae of the GI tract (...) and that “the OTSC System should be incorporated into the therapeutic armamentarium of the advanced endoscopist.”

First report of endoscopic closure of a gastrocolic fistula using an over-the-scope clip system (with video)

Endoscopic closure of gastrocolic fistula using the over-the-scope clip system

August 2013 | The interesting case: OTSC closure of esophagobronchial fistula
Dr. E. Zolotarevsky and colleagues from the Department of Gastrointestinal Endoscopy and Intervention Service at Memorial Sloan-Kettering Cancer Center, New York City report about an interesting case in which OTSC clipping was used for closing an esophagobronchial fistula. An 83 y/o woman presented with a symptomatic fistula arising from an esophageal diverticulum with recurrent pulmonary infections. Placing a covered self-expanding metal stent was not believed to result in adequate seal of the chronic lesion. The placement of a percutaneous gastrostomy tube was refused by the patient. Also bronchial stenting and surgery were not considered as good options in this case. In this situation closure of the fistula with the OTSC clip was decided. A 12/6/1 clip was placed under endoscopic control.
July 2013 | OTSC effective in emergency closure of iatrogenic GI perforations instead of abdominal surgery

Dr. Hagel and colleagues, Dept. of Gastroenterology, University of Erlangen-Nuremberg, Germany reported about a consecutive series of 11 cases with perforations of the digestive tract, treated with OTSC clipping. All cases were considered as being candidates for abdominal surgery for closing the perforation. In 11 cases perforation closure with OTSC was immediately successful, thus avoiding surgery in 64.7%. In 6 cases surgical closure was done. The area size of perforation in the successful cases was 21.1±9.1 sqmm; in the unsuccessful group the area size was 97.8±149 sqmm. Unsuccessful cases had on average a larger size, necrotic margins and required more OTSC clips during closure attempts (2.3±0.5, p=0.018).

The authors conclude: ‘OTSC application yields a high rate of endoscopic perforation closure in patients with macroscopic gastrointestinal perforation, even in an emergency setting, representing an alternative to surgery, especially when the size of the lesion is not too large and when vital or solid perforation margins are expected.’

Over-the-Scope Clip Application Yields a High Rate of Closure in Gastrointestinal Perforations and May Reduce Emergency Surgery

Hagel AF, Naegel A, Kessler H, Matzel K, Dauth W, Neurath MF, Raithel M
J Gastrointest Surg. 2012 Nov;16(11):2132-8
[Epub 2012 Aug 18] 88

July 2013 | Recommendation of OTSC System in complex GI bleeding

In an overview article the authors are referring to the current guideline therapies available and new developments. They report that other new three-dimensional clips seem to be even less efficacious than normal hemoclips. Thus, the authors conclude that obviously one of the key elements to successful hemostasis is the strength of the jaws of a clip and the amount of tissue captured. They state that this is obviously fulfilled by the design of the OTSC System which allows for the capture of a large amount of tissue and is more secure than other clips in the experimental setting. Thus the OTSC System is being recommended and used in complex GI bleeding. According to Leung & Lau a single clip suffices for most circumstances and therefore the procedure is shorter when compared to multiple applications of hemoclips.

Comment by Ovesco: In a recently published series of 83 patients with severe and complicated GI bleedings (e.g. relapses after conventional endoscopic hemostasis or indication for a surgical intervention) the success rate was close to 93% with OTSC (Kratt T et al., Poster DGE-BV meeting, Munich 3/2013)

New endoscopic hemostasis methods

Leung KJ EL, Lau JY
Clin Endosc. 2012 Sep;45(3):224-9

June 2013 | Report on successful removal of an OTSC Clip

Prof. Mönkemüller and colleagues presented a clip removal case in a letter to the editor of Gastrointestinal Endoscopy. Ten days after treating an anastomotic leak with the OTSC System, there was still a leak due to misplacement of the clip. The clip had to be removed to place another OTSC clip onto the leak. At first clip rising was accomplished by injecting saline solution below the OTSC. A snare was positioned around the clip, slowly closed and released to seal the invaginated tissue before resection. The clip was still found in place at 1 month follow-up by chest X-ray but passed spontaneously and uneventfully as seen in CAT scan 45 days after the procedure. Final follow-up at 3 months revealed no recurrence or postprandial cough.

Esophagogastrointestinal fistula closure using a novel endoscopic over-the-scope clip

Zolotarevsky E, Komous Y, Baimish M, Schatten M

July 2013 | OTSC update 14

July 2013 | OTSC System in transgastric appendicectomy

Kaehler et al. report the results of their first 15 patients in a prospective trial on ‘Transgastric appendicectomy’ which now already recruited 30 eligible candidates. From April 2010 the Mannheim group offered to their patients already recruited 30 patients who are currently under follow-up. Kaehler et al. report the results of their first series of transgastric appendectomy using the OTSC System (and the second series overall). All 30 patients who have been recruited altogether will be reported in a separate publication.

Transgastric appendicectomy

Kaehler G, Schoenenberg MB, Kienle P, Post S, Magdeburg R

July 2013 | Ovesco’s Full Thickness Resection Device (FTRD) presented in live endoscopy at Endo-Update meeting

During clinical live demonstrations at endo-update which took place under the presidency of Prof. Dr. H. Messmann and Prof. Dr. H.-D. Allescher in Augsburg, Germany, a neuro-endocrine tumor (NET) in the rectum was resected with the new Full-Thickness Resection Device of Ovesco Endoscopy: the FTRD. A 62 year old patient showed a submucosal tumor of about 9 mm diameter. Biopsy revealed a neuroendocrine tumor. Prof. Dr Thomas Rösch (University Hospital Hamburg-Eppendorf) used the FTRD to resect the lesion. The FTRD consists of an elongated OTSC cap premounted with a specially designed, derivative OTSC clip and the cap incorporates a resection snare. Prof. Rösch grasped the lesion with a grasping forceps and pulled the target tissue into the cap in a full thickness fashion. After mobilizing the tissue into the cap, the clip was released to seal the invaginated tissue before resection. Right afterwards the snare was closed and the tissue resected with HF current. The resection specimen included the full thickness of the wall carrying the NET, with a safety margin. The serosa was seen in histology, confirming that the specimen was a full-thickness resection.

The FTRD device is not yet commercially available.
Venue: Klinikum Augsburg, Augsburg, Germany

May 2013 | Iatrogenic digestive tract perforations: OTSC closure as preferred method

Dr. C. Gubler and Prof. P. Bauerfeind, Dept. of Gastroenterology, Zurich University Hospital, Switzerland report about the use of the OTSC clip for endoscopic closure of iatrogenic organ perforations. In a consecutive patient series (n=14) they investigated technically successful closure of perforations that occurred as a result of an endoscopic intervention. All patients were followed clinically for 24 hrs. Endoscopic closure was achieved in 13 of the 14 cases (92.9%). In 3 patients abdominal pain led to evaluation of the closure site by laparoscopy as a precaution. All 3 OTSC closure sites were found intact and no segmental resection of the bowel was needed. One OTSC gastric closure perforation was measured by histology revealed gastric adenocarcinoma after endoscopic mucosal resection. The authors conclude that GI perforations up to 30 mm diameter, observed during endoscopy should be treated with endoscopic OTSC clip closure.

Endoscopic closure of iatrogenic gastrointestinal tract perforations with the over-the-scope clip

Gubler C, Bauerfeind P
Epub 2012 May 17 81

April 2013 | OTSC System found safe and appropriate for closure of acute perforations in the stomach

In this first trial from China (after compassionate use cases in patients earlier on) the authors investigated the feasibility of the OTSC System for the closure of gastric perforations in the fundus. This location is of special interest since the handling of a flexible scope in the retroflex position is sometimes quite challenging. The investigation was done in a dog model. The perforation was performed with electrocautery and a needle knife in seven dogs. Closure was performed with one OTSC clip each. The closure was performed in 18.5 +/- 6.4 minutes (team without prior experience). The following leak pressure test with maximum air inflation and 500 ml methylen blue solution resulted in one minor leak (laparoscopic control) without clinical consequences though. The authors conclude that the OTSC System is safe and appropriate for the closure of acute perforations in the stomach despite the well known difficulties with the J-maneuver.

Feasibility study of secure closure of gastric fundus perforation using over-the-scope clips (OTSC) in a dog model

Zhang XL, Qi JH, Sun G, Tang P, Yang YS
J Gastroenterol Hepatol. 2012 Jul;27(7):1200-4 86

OTSC® update 13

OTSC® update 14
The clinical presentations conformed to the OTSC clipping in a range of indications

Königsrainer, Tübingen, presented data of their

Kratt T, Stüker D, Gräpler F, Schnek M, Adam P, and

OTSC to prevent migration of covered self-expanding stents

Fährndrich M, Pohl T, Rolffs S, Sandmann M, and Heike M, Dortmund, presented their technique of using OTSC to avoid migration of covered, self-expandable stents. Stent migration has an incidence of up to 30% and represents a significant clinical challenge. To prevent this, the authors used OTSC to fix the stent permanently to the neighboring GI wall. In 24 cases with benign indication for stent placement OTSC fixation was carried out in the following locations: esophagus, small bowel and colon. After 5–8 weeks the OTSC clips were removed by Nd:YAG laser cutting to intentionally remove the stent. In all 24 patients the procedure was technically successful. In 1 patient an undesired stent migration before intentional removal was observed. In another case the stent had to be removed after a few days due to intolerance by the patient in a location close to the upper esophageal sphincter. The authors conclude that OTSC clipping was found to be a safe and practical technique and has prevented stent migration in 98% of the cases studied.

Hospitalisation time and 30-days mortality in GI perforations after technically successful and unsuccessful OTSC closure

Hagel A, Nägel A, Raithel S, Diebel H, Neurath M, and Raithel M, Erlangen, showed data on the management of GI perforations with OTSC clips. They studied 19 patients with apparent perforation of a digestive organ wall in various anatomical locations. In 13 patients the perforation could be closed with OTSC (‘O+’) to avoid emergency surgery. In 6 patients OTSC closure was technically unsuccessful and emergency surgery was needed (‘O-‘). In the O+ group the duration of hospital stay was 10.7 ± 2 days. In the O- group hospital stay was 12.1 ± 7 days, no mortality, 2 patients in this group had co-morbidities unrelated to clip closure, leading to a prolonged hospital stay; excluding these 2 patients, hospitalisation was 5.8 ± 2 days. In the O+ group hospital stay was 12.1 ± 7 days, one patient with esophageal perforation died after emergency surgery. The authors draw the conclusion that OTSC treatment can significantly reduce morbidity and mortality in GI perforations.

OTSC-Anwendung bei manifesten GI-Perforation: 30-Tages-Mortalität, Hospitalisationsdauer und Outcome nach endoskopisch erfolgreicher und nicht-erfolgreicher Perforationsverschlüsse

A. Hagel, A. Nägel, S. Raithel, H. Diebel, M. Neurath, and M. Raithel, Erlangen

Monocentric case experience with OTSC in a broad range of wall closure indication: safe transmural closure

Nietsch H, Hammelmann F, and Asperger W, Halle, summarized their initial experience with OTSC in endoscopic closure of the GI organ wall in 10 consecutive applications. Indications included: postsurgical rectal anastomotic leak (n=2), rectal ESD perforation (n=1), gastric ESD perforation (n=2), esophageal perforation and aspiration dilation (n=1), Mallory-Weiss tear (n=1), perforated gastric ulcer (n=1), post-surgical duodenal leak (n=1) and post-surgical biliary suture line leak. All cases were successful. The authors conclude: OTSC enables a safe transmural closure of spontaneous and iatrogenic perforations. In a majority of cases further management of the target tissue is not required and only one or two clips are sufficient. In well-trained endoscopy centers the learning curve for OTSC is short.

Erfahrungsbericht der ersten 10 Anwendungen des endoskopischen OTSC-Clip-Systems

H. Nietsch, F. Hammelmann, and W. Asperger, Halle

OTSC for closure of distal esophageal perforation

Braun A, Richter-Schrag H, Hopt U, Fischer A, Freiburg, showed data on OTSC in the treatment of distal esophageal perforation after vomiting (Boerhaave, n=1) and iatrogenic injury (n=1). Esophageal perforation is a life-threatening situation with a high complication and mortality rate. In both cases endoscopic closure of the esophagus was achieved within 12 hrs after the lesion. Both patients received bilateral thoracic drainage and antibiotic therapy. No patient developed sepsis. Starting oral intake was without problems. Control endoscopy after 3 months revealed no stenosis and both clips were found in place. The authors summarize that the closure of esophageal perforations with OTSC is a safe and effective method and is significantly more economic than common surgical therapy requiring longer hospital stay.

Endoskopischer Verschluss von distalen Ösophagusperforationen mit einem Over-The- Scope Clip (OTSC)
retrieval with the primary purpose of enhanced histological examination of an in-to-to full-thickness specimen. The target lesions were in the upper GI tract, melanoma metastasis (n=1), GIST (n=2) or in the lower GI tract (adenoma or early colorectal cancer, low risk histology; n=4). The presentation gave a detailed case history of an elderly patient with recur- rent adenoma (high grade dysplasia, partially adenocarcinoma) of the rectum. The patient had full-thickness resection with FTRD under single-shot antibiosis and was discharged the following day. As histology demonstrated complete re- moval of the lesion, no further therapy was done. Follow- up was uncomplicated. After 14 weeks control endoscopy revealed that the clip had detached from the tissue, normal scar formation was seen at the resection site and no signs of residual lesion or new recurrence were found.

Klinische Evaluation eines neuen endoskopischen GI-Trakt-Vollwandresektiionsystems: das OTSC-basierter „full thickness resection device“ (FTRD)
T. Kratt, D. Stüker, F. Gräpler, M. Schene, R. Adam, and A. Königsmüller, Tübingen
FTRD is not yet commercially available.

March 2013 | Dr. Thomas Kratt, University of Tuebingen, Germany, wins award for clinical research with Ovesco’s FTRD
Dr. Thomas Kratt, Interdisciplinary Endoscopy, University Hospital, Tuebingen, Germany, received an award for this presentation of clinical research in the field of full-thickness resection at the 43rd Congress of the German Society for Endoscopy and Imaging (DGE-BV), held in Munich, March 14–16, 2013.

Dr. Kratt presented data of his first 8 cases with FTRD, a de- vice of Ovesco Endoscopy, not yet commercially available. It combines modified OTSC clipping with tissue resection. In 7 of the 8 cases the procedure was technically feasible, in 1 case the target lesion could not be reached.

The cases treated included various indications in which FTRD was used as a device for full-thickness tissue retrieval with the primary purpose of enhanced histological examination of an in toto full-thickness specimen. The target lesions were in the upper GI tract, melanoma metastasis (n=3), GIST (n=1) or in the lower GI tract (adenoma or early colorectal cancer, low risk histology; n=4).

The presentation of Kratt gave a detailed case history of an elderly patient with recurrent adenoma (high grade dysplasia, partially adenocarcinoma) of the rectum. The patient had full-thickness resection with FTRD under single-shot antibiosis and was discharged the following day. As histology demonstrated complete removal of the lesion, no further therapy was done. Follow-up was uncomplicated. After 14 weeks control endoscopy revealed that the clip had detached from the tissue, normal scar formation was seen at the resection site and no signs of residual lesion or new recurrence were found.

March 2013 | Prospective trial on OTSC Proctology in anal fistula treatment presents first data
Munich, March 8, 2013. The annual conference of the German Society for Coloproctology (DGK) was held in Munich, March 8 and 9, 2013. At this conference first data were pre- sented from an investigator initiated multicentric prospective observational clinical trial on the use of OTSC Proctology in the treatment of anal fistula. The two participating trial sites are the Stuttgart Institute of Proctology (PD. Dr. R. Prost, Dr. W. Ehni), Stuttgart and the German Anorectal Center (EB.Dr. A. Joos, Prof. Dr. A. Herold, PD Dr. D. Bussen), Mannheim.

The trial presented an interim analysis on the first 15 patients. Inclusion criteria are supra-, extra- or high-transsphincteric anal fistula, including first recurrence but excluding patients with IBD.

Mean follow-up was 6.9 months (1–15 months) after OTSC placement. 8 patients had already completed follow-up (6 months), 7 patients were still followed. In patients who had already completed the trial, mean follow-up was 10.8 months (n=15 months).

In these patients the healing rate, defined as post-surgical closure of the fistula, absence of drainage from the fistula and absence of recurrence after 6 months was 88%.

In his presentation PD Dr. R. Prost, Stuttgart, coordinator of the trial, summarized that data were encouraging but com- pletion of the trial had to be awaited. The trial is expected to close in 2013.

March 2013 | EndoResect study – Endoscopic full-thickness resection of gastric subepithelial tumors
Meining et al. report on 20 patients with gastric subepithelial tumors (SET) up to 3 cm in diameter. Patients were pros- pectively enrolled and 14 of them treated by endoscopic re- section using the OTSC Anchor and a monofilament snare. In cases where perforation occurred the defect was closed with Twin Grasper and OTSC System. The authors conclude that this method seems to be faster and easier than other endoscopic techniques such as ESD or submucosal tun- neling. Perforation could be adequately managed by the OTSC System (100% closure). Thus, endoscopic resection without laparoscopic control seems possible in selected pa- tients with purely intraluminal tumors. The authors discuss the malignant potential of SETs, especially GISTs which cannot be reliably determined by either endoscopic or en- doproctologic surveillance. According to guidelines GISTs larger than 2 cm should be resected. However, since also smaller tumors have malignant potential complete resection of all suspected lesions seems advisable according to the authors. They argue that GISTs rarely develop lymph node metastases, and thus local resection with large negative margins and without lymph node resection are considered curative approaches.

Comment by Ovesco: since only tumors without connection to the muscular propria layer have a 80–100% resection rate in literature, it might be feasible to perform full-wall resect- ions in SETs and similar tumors. Ovesco is currently completing the development of a new Full Thickness Resec- tion Device (FTRD) for the lower GI tract to start with.

January 2013 | Combined use of OTSC System and stent to close large EMR-related perforations
Treatment of large EMR-caused perforations with a com- bined use of OTSC and stenting is reported by Hadj Amor et al.

One patient with a 20-mm esophageal perforation was treated with an OTSC, several other clips and an endoloop. A fully covered stent was placed on top to bypass the perfor- ation. The large duodenal perforation in the other patient was initially unsuccessfully treated with a fully covered stent and several clips to avoid migration. After removal of the stent an OTSC and two other clips were used to close the perforation completely. The perforation was bridged by another fully covered stent that was placed over the closed perforation without fixation. In both patients the stents were removed after several weeks and both sites showed healing on non-contrastive imaging.

Successful endoscopic management of large upper gastrointestinal perforations following EMR using over-the-scope clipping combined with stenting
Hadj Amor WB, Bonin EA, Vilot V, Djeueux A, Grimaud JC, Barhet M
Endoscopy. 2012;44 Suppl 2 UCTN:E277-8
[Epub 2012 Aug 29]
Full-text link: dx.doi.org/10.1055/s-0032-1309861

January 2013 | OTSC used to prevent stent migration in the treatment of anastomotic leak
Toshniwal J et al. report about the use of the OTSC System to anchor a fully covered self-expandable metal stent to pre- vent stent migration. The patient underwent distal esopha- gectomy with gastric pull-up. The stent was placed to a post- operative anastomotic leak in the esophagus. However, the stent partially migrated into the stomach. The stent was then repositioned onto the leak. The OTSC System was placed using the OTSC Twin Grasper to grasp the stent edge and suction. After application the OTSC clip fixed the stent to the esophageal wall. Follow-up showed successful closure of the anastomotic leak.

The authors conclude that the placement of the clip was easy, fast and prevented stent migration effectively. The fixation of stents is not a common indication for the OTSC System and there is only very limited experience.

February 2013 | Retrospective multicentric re- view of early OTSC patients in the US: overall clinical success rate of 71%
Dr. Todd H. Baran and colleagues, Division of Gastroentero- logy & Hepatology, Mayo Clinic, Rochester MN, USA report about their experience with 45 patients and 48 OTSC clip placements from March 2011 to January 2012. Median fol- low-up time in this mixed cohort was 77 days (30–330 days). Indication breakdown included hemostasis (n=77), closure of chronic fistula (n=28), closure of iatrogenic perforations (n=5), closure of post-esophagectomy anastomotic leakage (n=3) and miscellaneous (n=2).

Before OTSC placement 49% of the patients had undergone other therapies for their condition that had failed. The overall clinical success rate was 71%. Hemostasis was achieved in 100% of cases. Anastomotic leakage and fistula was closed in 65%. Also one case of OTSC clip removal by means of APC-cutting of a clip hinge is described.

The authors conclude that the OTSC clip appears clinically effective and is a welcome addition to the therapeutic armamentarium in the closure of leaks, fistula, perforations and non-vascular bleeding.

Use of an over-the-scope clipping device: multicenter retrospective results of the first U.S. experience
Baron TH, Song LM, Ross A, Tokar JL, Irani S, Kozarek RA
Gastrointest Endosc. 2012 Jul;76(1):202-8
Combination of the “bear claw” (over-the-scope clip system) and fully covered stent for the treatment of colorectal postsurgical leaks and chronic fistulae – a meta-analysis

The success rates for hemostasis in severe GI bleeding, perforation closure and chronic fistula closure are 88%, 79% and 73%, respectively

The OTSC System has been described in more than 40 clinical papers in the scientific literature covering a range of indications. In order to summarize the clinical data published so far and to evaluate the overall clinical efficacy, Ovesco Endoscopy has commissioned systematic literature research on the OTSC System. The study was limited to clinical publications and covered the key applications of the OTSC System, hemostasis, closure of acute GI lesions (perforations) and chronic GI lesions (fistula). Only clinical reports with >4 patients were included into the survey, that was carried out by Dr. Timo Weiland, novineon CRO, a specialized contract research organization for the medical device industry (www.novineon.com).

The success rates defined as permanent achievement of the therapeutic goal for hemostasis in severe GI bleeding, perforation closure (including acute anastomotic suture line failure) and chronic fistula closure are 88%, 79% and 73%, respectively. The OTSC System compares to the effectiveness of a surgical intervention in the respective indications or offers a new therapeutic option in situations where surgery is not feasible.


(English)


(German)
October 2012 | Hemostasis in large gastric ulcer with the OTSC® System
Vormbrock et al. report a successful treatment of gastric ulcer bleeding with the OTSC System. In an emergency EGD removal of clots and fresh blood revealed an ulcer with a 2-mm thick pulsating vessel. Injection therapy was difficult due to the fibrotic tissue. Thus OTSC placement was decided. To mobilize the target tissue into the cap, two edges of the ulcer were grasped by each of the two jaws of the OTSC Twin Grasper. After retraction of the grasper and additional suction the OTSC was applied and immediate hemostasis achieved.

The authors conclude that the OTSC was effective for hemostasis in this fibrotic ulcer which was very hard to treat with other endoscopic methods. They state that the placement of OTSC was quick and easy resulting in potentially life-saving hemostasis.

Use of the “bear claw” (over-the-scope clip) to achieve hemostasis of a large gastric ulcer with bleeding visible vessel
Vormbrock K, Zabelinski M, Münkemüller K
Gastrointest Endosc. 2012 Oct;76(4):S17-8

October 2012 | Postsurgical colorectal anastomotic leaks: OTSC® clip recommended as treatment of choice at SMIT conference
Barcelona, September 21st 2012: The 24th conference of the Society for Minimally Invasive Therapy (SMIT) was held in Barcelona, Spain, under the presidency of Dr. Enric Laporte. Prof. Dr. Alberto Arezzo and colleagues, 2nd Dept of General Surgery, University of Turin, Italy, presented latest data of 25 clinical cases with postsurgical anastomotic leaks or fistula after colorectal surgery.

In the general literature anastomotic leak and fistula have an incidence of about 7–9% after laparoscopic or open colorectal surgery. In the 25 cases prospectively collected in Turin, 21 were successfully treated with endoscopic OTSC clipping alone. This is a success rate of 84%. In 3 patients the fistula did not heal, and in 1 patient additional surgery was needed to close the defect.

In conclusion the authors recommend the use of endoscopic OTSC clipping for lesions up to 12 mm in size as the primary treatment for patients with postsurgical leaks and fistula after colorectal surgery.

Efficacy of the over-the-scope clip (OTSC®) for treatment of colorectal postsurgical leaks and fistula
Arezzo A, Vera M, Reddavì R, Craverò F, Bonino MA, Morino M

OCST® update 11
August 2012 | OTSC® featured for gastro-intestinal bleeding and NOTES in UEGW 2011 Report
In the UEGW 2011 Report: putting endoscopy into perspective, Papanikolaou and Rösch feature the OTSC® System or gastrointestinal bleeding and NOTES: UEGW 2011 report: putting endoscopy into perspective
Papanikolaou IS, Rösch T
Endoscopy 2012; 44:512-526. [Epub 2012 Apr 24]

The authors conclude that although OTSC being “promising, further clinical experience will help to identify the optimal role and indication for OTSCs in gastrointestinal bleeding”. Ovesco would like to add that recently Dr. T. Kratt (Endoscopy Unit, Dept. Gen. Surgery, University of Tübingen) has presented 60 consecutive patients with complicated GI hemorrhages with encouraging results (see Ovesco news below “June 2012 | OTSC® in emergency hemostasis: new data demonstrate superior results”). At the same time a multicenter prospective, randomised, controlled trial is about to start to identify patients and lesions that are most suitable for the OTSC device, comparing its efficacy and safety relative to those of established techniques. In the NOTES chapter they state that even though the number of NOTES related papers were on the decline the “management of iatrogenic perforations of the gastrointestinal tract is a basic aspect that influences safety and outcomes not only in NOTES but also endoscopic resection…”

The recently developed OTSC was presented in some interesting studies at UEGW 2011*. Apart from two cited papers (v. Renteln et al. Endoscopy 2011; 43: 01A47, Hul et al. Endoscopy 2011; 43: 01A48) that deal with animal models and prove safety and efficacy of OTSC, the authors are referring to “an interesting German prospective study … on snare resection of gastric subepithelial masses (>3 cm) in 16 patients (Schlag et al. Endoscopy 2011; 43: 01A329). Al-though endoscopic resection was possible in 12/16 cases, perforation occurred in four patients, which was successfully treated with an OTSC clip. The technique per se can be regarded as a step towards transgastric endoscopic surgery, and the possibility of securing closure with the OTSC has a pivotal role providing safety of the procedure…”

Remark from Ovesco: G. Kähler (Dept. of Surgery, Endoscopy unit, University Hospital Mannheim) during the 2012 meeting of the German Congress for Coloproctology in Munich reported preliminary data of 25 transgastric appendectomies where gastric closure was successfully performed with the OTSC System in 100% of cases. It is planned to stop patient recruitment after 30 patients.

July 2012 | OTSC® System or clipping for gastrocutaneous fistula closure: The over-the-scope system – a novel technique for gastrocutaneous fistula closure: The first North American experience
Kothari TH, Haber G, Sonpal N, Karanth N

June 2012 | OTSC® in emergency hemostasis: new data demonstrate superior results.
Freiburg, Germany, June 15, 2012 – Congress of the South-West German Society for Gastroenterology, Dr. Thomas Krott, Department of Visceral and Transplant Surgery of Eberhard-Karls University, Tuebingen, Germany, presented latest data on the use of OTSC in the emergency treatment of GI hemorrhage. He reported on a consecutive series of 60 patients with severe GI bleeding based on different pathologies, mainly peptic ulcer and different locations. 69 OTSC clips had been placed in these patients. In 19 cases OTSC clipping was chosen due to acute failure of conventional other hemostatic techniques to stop the bleeding or relapse of the bleeding after such conventional treatment. The overall success rate was 65 of 69 or 94.2%. No severe complications related to the OTSC procedure were noted and 2 minor complications (mucosal injury), requiring no further treatment.

OTSC® update 10
July 2012 | Experimental study from Norway confirms efficacy and safety of OTSC® in gastric closure for NOTES
Researchers at St. Olavs University Hospital, Trondheim, Norway report about a new experimental trial in the porcine animal model (=15). After transgastric approach had been established and flexible pentroscope had been performed, gastrotomy closure with OTSC clips and T-bars was studied. The safety of closure was tested with the methylene blue test after the procedure. The animals were kept for 2 weeks postoperatively and then re-operated for sample retrieval and histological examination. No postoperative complications were found and the methylene blue test did not reveal any leaks. Histology demonstrated full-thickness healing of all gastric lesions. Differences between both closure methods were not observed.

Efficacy and safety of transgastric closure in natural orifice transluminal endoscopic surgery using the OTSC System and T-bar sutures: a survival study in a porcine model
Suhai AH, Mårkvi R, Haigrost J, Kuhry E

July 2012 | First North American literature report on OTSC®
In a recent issue of the Canadian Journal of Gastroenterology, Dr. T.H. Kothari, Dr. G. Haber and colleagues from the Dept. of Gastroenterology at Lenox Hill Hospital, New York City, reported about their initial experience using Ovesco’s OTSC clip.

They report about the application of OTSC in the treatment of gastrocutaneous fistula. A case report describes the use of OTSC in a patient with a persistent gastrocutaneous fistula after PEG feeding tube removal. 2 clips were placed to occlude the gastric orifice of the fistula tract. The closure was immediately successful and the patient was discharged home. At 3-month gastrointestinal follow-up the fistula had completely healed. The 2 clips were found spontaneously detached from the tissue and were removed from the gastric cavity with an endoscopic net retriever. The authors conclude that the results from the literature and their own experience demonstrate efficacy of the OTSC system in the closure of gastrocutaneous fistula.
June 2012 | OTSC®@EAES 2012: new data in the treatment of post-surgical leaks and fistulas

From June 20–23 the 20th International Congress of the European Association of Endoscopic Surgery took place in Brussels, Belgium.

New clinical data on Ovesco’s OTSC clip were presented by Prof. Dr. Alberto Arezzo and colleagues from Turin, Italy. They described results from a consecutive patient series with post-surgical leaks and fistula, closed with OTSC clipping. 16 patients were treated at the Department of Surgery at Molinette Hospital in Turin. The rate of permanently successful closure was 86%.

Effective Over-The-Scope Clip for double enterocutaneous anastomotic fistula treatment after right hemicolectomy

Arezzo A, Reddavid R, Verra M, Cravero F, Bonino MA, Monno M (S24, Thursday)

In a second talk, Prof. Dr. Arezzo presented a case study on OTSC closure of a double enterocutaneous fistula after colonic resection.

Endoscopic treatment of colorectal post-surgical leaks and fistulas using an Over-The-Scope Clip (OTSC)


May 2012 | Conference report: OTSC® at German Society for Endoscopy (DGE-BV) – latest clinical data

The German Society for Endoscopy and Imaging Techniques (DGE-BV) held its XXXIIIth Annual Conference in Munich, Germany, from March 22-24.

Ovesco’s OTSC clip was the topic of a number of presentations in the scientific programme, as listed below. Part of these presentations were recently published on ‘Endoskopie’.

Dres Faehndrich and Sandmann from Dortmund presented their 2-year experience using OTSC in various indications. Their case series included 31 patients with GI fistula, acute perforations or post-surgical suture dehiscence. The therapeutic goal of closure was achieved in 83%, 100% and 75%, respectively. They also report about successful removal of clips with Nd:YAG laser. A special application of OTSC in the Dortmund case series was endoscopic gathering of the hiatus in patients with reflux disease.

FV17 Neue Einsatzmöglichkeiten des OTSC-Systems im Gastrointestinaltrakt – Ergebnisse und Verläufe nach 2 Jahren praktischer Anwendung

Sandmann M, Heike M, Fähndrich M

In a further paper, the same authors reported on the use of OTSC in a clinical case series with full-thickness colon resection (n=8). In 4 patients polypomectomy revealed T1 colon cancer, in 3 patients an accidental carcinoid was found and in 1 patient local recurrence after several mucosectomies for colonic adenoma. In all these cases an 14-size OTSC system was deployed to close the full thickness of the wall after the lesion had been pulled into the OTSC application cap. Then a snare was used to cut the folded tissue just above the level of the clip. Complete lesion removal, confirmed by histology was achieved in all 8 cases. In 5 cases the level of resection was in the deep muscular layer and in 2 cases the entire wall layers were involved. The authors conclude that deep wall or even full thickness resection with closure by OTSC is safe and fast and can be seen as an alternative to surgical resection in specific clinical cases.

FV9 Ergebnisse der endoskopischen Vollwandresektion im Gastrointestinaltrakt mithilfe des OTSC-Systems

Fähndrich M, Sandmann M, Heike M

The group of Prof. Hochberger from Hildesheim presented their results of a consecutive series of 40 OTSC interventions. In 85 % of cases the primary therapeutic goal was reached. Dr. Wedi reported on 23 cases of upper GI bleeding which had been refractory to other therapy before being treated with OTSC clipping. 19 patients were successfully treated, 2 patients died in spite of attempted surgical hemostasis and 2 other patients for reasons not related to the endoscopic intervention. He also showed data of 3 perforations with a closure rate of 100 %. Also 2 complications were reported. 1 new sigmoid perforation that was seen after successful closure of an EMR-related perforation in the hepatic flexure and one impingement of an endoscopic instrument with an OTSC clip.

FV24 Der Over-The-Scope-Clip (OTSC) – Erste klinische Erfahrung bei der Behandlung von schweren Blutungen und Perforationen im Colon ascendens

Prof. Dr. Hochberger

The group around Prof. Raithel from Erfangen summarized their experience of 17 cases of OTSC perforation closures in a retrospective evaluation. Dr. Hagel reported an overall success rate of 64.7%. He distinguished between cases

Pure natural orifice transluminal endoscopic surgery (NOTES) with ultrasonography-guided transgastric access and over-the-scope-clip closure: a porcine feasibility and survival study

with vital and with necrotic or infected tissue margins. In cases with non-vital wound margins the number of clips was greater that in cases with non-altered wound margins (1.1 +/- 0.3 vs 2.3 +/- 0.5 clips per case).

P22. Pure-thrope-side-clip – Applikation ermöglicht eine hohe Verschlussrate bei verschiedenen Arten von gastrointestinalen Perforationen


In a pre-clinical study Dr Bernhard and co-workers, Rostock, assessed OTSC for gastric closure after pure NOTES sigmoids resection using a combined transgastric and transsec- toral approach in 5 animals. Closure of the gastric cavity with the OTSC clip was successful in all cases. All clips were still present at the end of the follow-up period (5 weeks). The mean operative time was 3 h 20 min (2.5 – 4.5 hrs).

P22. Pure-NOTES-Sigmaresektion in einem Tier-Über- lebensmodell


Further presentations dealt with the application of the OTSC system:

Ovesco-Clip bei Fisteln und Anastomoseninsuffizienz

Fähndrich M, Dortmund

Ovesco-Clip bei iatrogenen Perforationen und zum Verschluss von Vollwandresektionen

von Renteln D, Hamburg

Endoskopische Vollwandresektion von subepithelialen Magentumoren (EndoResectStudie)

Schöll C, von Delius S, Feussner H, Wilhelm D, Meining A, München

Perforationen am GI-Trakt: Wann endoskopische Therapie, wie lange warten, wann Chirurgie?

Pohl J, Wiesbaden vs. Fucha KH, Frankfurt/Main

Transgastrale Appendektomie

Kähler G, Mannheim

Moreover, several posters showed results of OTSC-system applications.

Stentführung mit Hilfe des OTSC-Systems zur Verhin- derung von Stentmigrationen

Fähndrich M, Sandmann M, Heike M, Dortmund

Over-the-scope-clip – Applikation ermöglicht eine hohe Verschlussrate bei verschiedenen Arten von gastrointestinalen Perforationen


Hocheffektive konservative Therapie einer begin- gung gastrointestinalen Perforationen

Fähndrich M, Sandmann M, Heike M, Dortmund


Immediate closure was endoscopically successful in 33 patients (92%). One patient developed an esophageal perfora- tion while the cap was introduced, and in 2 patients the perforations did not close; these 3 patients were successfully treated with surgery. None of the patients had leakage of soluble contrast on the basis of contrast x-ray. One patient with a closed colonic perforation deteriorated clinically within 6 hours after the procedure. Despite surgery the patient died within 36 hours. The remaining 32 patients had successful endolu- minal closures; the overall success rate was 89% (95% con- fidence interval, 75% – 96%). The mean endoscopic closure time was 5 minutes 44 seconds ± 4.15 minutes. The authors conclude that the OTSC system is effective for the endoluminal closure of acute iatrogenic perforations. It allows patients to avoid surgery, and 89% of patients had successful closures without adverse events.

Efficacy of Endoscopic Closure of Acute Perfora- tions of the Gastrointestinal Tract


March 2012 | OTSC® closure of esophago- pericardial fistula

In the recent issue of the journal Endoscopy C Gabler and P Bauerfeind, Dept. of Gastroenterology and Hepatology, University Hospital, Zurich, Switzerland, report about the use of an OTSC clip for closing an esophago-pericardial fistula.

A 56 year old female patient had received a lung transplant and was under triple immunosuppression. She developed a septic postoperative course with atrial fibrillation, septic shock and renal failure. CT revealed pneumopericardium, which was shown to be caused by an esophageo-pericardial fistula through endoscopy. As an acute measure, a covered self-expanding metal stent was placed. After general improve- ment of the clinical condition of the patient the stent was removed and an OTSC clip of the type 11/3/a was placed. After 6 days the pericardial drain could be removed and closure of the fistula was confirmed by radiography. 4 weeks after the treatment that patient was on an oral diet with no further signs of pericardial effusion.

Successful closure of an esophagopericardial fistula with an over-the-scope-clip

C Gabler, P Bauerfeind | Endoscopy 2012; 44:E1-E2

March 2012 | OTSC® for treating anal fistula in proctology

The use of a new OTSC® clip, modified for proctology, has been described by R. Prosst et al. in the journal Colorectal Proctology. The authors present the data of a successful pre-clinical trial in which the new OTSC® Proc- tology was achieved in all cases. No compli- cations were encountered. Compared to control fistula, left untreated in each animal, OTSC® clipping demonstrated superior results. 40% residual tracts and a more intense formation of granulation tissue were only found in the area of the fundus, where OTSC® clipping demonstrated ed for proctology, has been adapted to meet the requirements for appli- cation in the anal canal. The authors present the data of a successful pre-clinical trial in which the new OTSC® Proctology was studied for closure of anal fistula in the porcine animal model.

Artificial anal fistula had been created in 10 cases. Closure with OTSC® Proctology was achieved in all cases. No comp- lications were encountered. Compared to control fistula, left untreated in each animal, OTSC® clipping demonstrated superior results. 40% residual tracts and a more intense formation of granulation tissue were only found in the area of the fundus, where OTSC® clipping demonstrated ed for proctology, has been adapted to meet the requirements for appli- cation in the anal canal. The authors present the data of a successful pre-clinical trial in which the new OTSC® Proctology was studied for closure of anal fistula in the porcine animal model.

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The setting of the trial was prospective for studying OTSC® and used a historic control group of alternative endoscopic clips, studied earlier under identical model conditions. The Erlangen Active Simulator for Interventional Endoscopy (EASIE) study represents a well-established and standardized ex-vivo model for training and research. The EASIE model is equipped with an active and pressure-controlled bleeding simulator, operating a close to physiological hemodynamic conditions. Two investigators took part in the trial, each treating 16 standard EASIE bleeding sites. Both investigators used either suction through the scope for positioning the OTSC® applicator cap at the bleeding site or the OTSC® Anchor (n=8, each application condition). Systemic pressure in the EASIE circulation system was measured one minute before, during and one minute post clip application to objectify the effects of clipping on the vessel diameter. In result, OTSC® clipping led to significant increase of systemic pressure (indicating effective hemostasis) and vessel diameter decrease (p<0.001). The application technique had no significant effect on the main outcome variable. Historic comparison with conventional endoscopic clips, studied earlier, demonstrated a significantly higher hemodynamic efficacy of the OTSC® system.

Hemodynamic efficacy of the over-the-scope clip in an established porcine cadaveric model for spurting bleeding


January 2012 | Experimental trial on full-thickness perforation closure with OTSC®: defects 20 to 30 mm safely closed with one clip

The Boston research group around Dr. K. Matthes, Children's Hospital and Dr. R. Chuttani, Seth Israel Deaconess Hospital and Harvard Medical School, investigated the defect sizes to be closed by one clip. The study was done as a prospective ex-vivo trial in the endoscopic simulator. Full-thickness defects were created in colon and gastric porcine tissue models; defect sizes were standardized in steps from 10 to 35 mm and 5 to 25 mm, respectively. Each site was treated 5 times and tested each time for burst pressure under water. The results of the study were recently published in the December issue of Gastrointestinal Endoscopy. Successful closure in the stomach was achieved in all defect sizes from 5 to 20 mm with 12-mm OTSC® clips. Mean burst pressure was 74.9 +/- 17.5 mm Hg for 15-mm defects and 49.3 +/- 21.6 mm Hg for 20-mm defects. In 25-mm lesions the mean burst pressure was not adequate with one clip. In the colon successful closure was feasible up to 30 mm with one clip. Mean burst pressures were 117.9 +/- 40.1 mm Hg for 20-mm defects and 57.4 +/- 4.2 mm Hg for 30-mm defects. 35-mm lesions were not adequately closed with one clip. The authors see the limitations of their study in the ex-vivo conditions and the endoscopy simulator situation which may not reflect clinical conditions. For lesions larger than 20 mm in the stomach or 30 mm in the colon more than one clip is needed.

Efficacy of full-thickness GI perforation closure with a novel over-the-scope clip application device: an animal study


January 2012 | Unusual case of foreign body-related lower GI bleeding managed with OTSC®

Dr. Milhena H. Strat and colleagues from the Dept. of Gastroenterology of Viktor Babe University Hospital, Timisoara, Romania, report about an unusual case of lower GI hemorrhage. A male patient was diagnosed with a toothpick impaction at the recto-sigmoid junction. Normally swallowed toothpicks are entrapped in the upper digestive tract. In the reported case endoscopic removal was possible and hemostasis was achieved by means of OTSC clipping.

Successful Endoscopic Treatment of an Unusual Cause of Lower Gastrointestinal Bleeding Using the Ovesco System


December 2011 | Closure of therapy-resistant enteric fistula with OTSC® clip and OTSC® anchor

PD Dr. J. Grossmann and colleagues, Evangelisches Krankenhaus, Moenchengladbach, Germany, report about a special case of OTSC® treatment in the recent issue of Deutsche Medizinische Wochenschrift. A patient suffered from recurrent subphrenic abscesses following a complicated postoperative course after sigmoidectomy for chronic recurrent diverticulitis. Two previous attempts of abscess treatment by transcutaneous drainage had failed. Radiographic studies revealed a fistula of the descending colon leading to the abscess formation. An OTSC® clip was applied on the enteric fistula, retracted by means of the OTSC® anchor. This led to complete closure of the fistula within four days as demonstrated by radiographic studies and repeat dye installation. Subsequently the transcutaneous drainage was successfully removed within 14 days of OTSC® application without recurrence of abscess formation.

Endoskopische Verschluss einer chronischen Fistel des Kolons unter Anwendung des „Over-the-scope“-Clips [OTSC] [Article in German]


[Epub 2011 Oct 29]

December 2011 | Systematic literature review: OTSC® is a safe and uncomplicated alternative to surgery in perforation closure

The recent issue of "Endoskopie heute", the official journal of the German Society for Endoscopy (DGE-BV), publishes a systematic literature review on Ovesco's OTSC® clip. The paper, presented by Dr. A. Kirchmair et al., Dept. of Surgery, Tuebingen University, Tuebingen, Germany, summarizes data of 37 original Medline-referenced publications. This includes 29 clinical and 8 experimental publications. In summary the authors state that the current literature supports the use of OTSC® for the closure of spontaneous and iatrogenic perforations in the digestive tract up to 20 mm in size. OTSC-Clipsystem – Klinische Anwendungen und Experimentelle Erfahrungen – Systematischer Review [OTSC-Clip System – Clinical Applications and Experimental Experiences – A Systematic Review]


November 2011 | In retrospect: OTSC® notably of 16 prospective patients with gastric subepithelial masses (3 cm or more) endoscopically resected with OTSC® clip in 12/16 cases. In 4/12 patients gastric perforation occurred and was cured with an OTSC® clip successfully. The authors conclude that endoscopic snare resection of gastric subepithelial masses (<3 cm) seems to be a safe and minimal invasive procedure.
If perforation occurs, it can be adequately managed by placing the OTSC® clip. These results can be regarded as a further encouraging step towards transgastric endoscopic surgery.

P1080 ENDOSCOPIC FULL THICKNESS RESECTION OF GASTRIC SUBEPITHELIAL MASSES – A STEP TOWARDS NOTES?
Christoph Schlag, Germany; Stefan von Delius; Hubertus Feussner; Dirk Wilhelm; Analena Beitz; Roland M Schmidt; Alexander Meining
Donatky et al. evaluated the feasibility of combining transgastric (TG) pure NOTES pentoescopy and intraperitoneal EUS (ip-EUS) with intralumenal EUS (il-EUS) for peritoneal evaluation, and the safety of EUS-guided access and OTSC® clip closure in a survival model with 10 pigs. All animals survived with histologically proven full-thickness closure again with signs of inflammation and micro-abscesses. They conclude that NOTES pentoescopy and ip-EUS are feasible and render sufficient peritoneal evaluation, given that the OTSC® system ensures a full thickness closure of the stomach.

P1044 TRANSGASTRIC PURE NOTES WITH PERITONEOSCOPY AND INTRAPERITONEAL EUS. A PORCINE SURVIVAL AND FEASIBILITY STUDY
Anders Moller Donatky; Denmark; Luisa Andersen; Ole Lerberg; Karibeth Dahl; Barbara Holmström; Peter Vilmann; Sven Meinsen; Lars Naasen; Theodor Jürgensen; Jacob Rosenberg
Thomas Hül; et al. reported of NOTES-assisted transgastric cholecystectomy in a porcine survival model with 10 pigs. The intervention was successfully performed in all cases (mean overall time ±5 min). OTSC® closure was successful in all cases as well (mean time ±9 min, range 4-12 min). All animals survived without complication. The authors concluded that hybrid cholecystectomy was feasible and safe with the OTSC® system for gastric closure being safe and efficient.

P1100 NOTESASSISTED MINILAPAROSCOPIC TRANSGASTRIC CHOLECYSTECTOMY
Tomas Hül; Czech Republic; Máté Kock; Marek Benes; Martin Krak; Jana Maluskova; Eva Kieslichova; Martin Oliverius; Julius Spykac
Pierre H. Deprez gave an oral presentation on 193 ESD procedures with en-bloc resection rates of <95%, and R0 resection in 87% of cases. He emphasizes that all bleedings procedures with en-bloc resection rates of <95%, and R0 success rate of 90% (9 out of 10 patients).

August 2011 | OTSC® clipping for closure of gastrocutaneous fistula after surgery for peptic ulcer
Dr. G. Kouklidis and colleagues from the University General Hospital of Alexandroupoli, Greece, describe a case of gastrocutaneous fistula after surgical treatment for a perforated gastric ulcer. By means of OTSC® clip placement the fistula was successfully closed. Therapeutic success was verified at the 2nd and 6th week after the application of the clip. The authors judge endoscopic application of the OTSC® device was safe and effective for the treatment of a gastrocutaneous fistula.


August 2011 | Endoscopic Full Thickness Resection with OTSC® as a spin-off from NOTES research for the therapeutic gastroenterologist
The research in natural orifice transluminal endoscopic surgery (NOTES) has brought significant advances in flexible endoscopy. In a recent overview in Minerva Gastroenterologica RR Watson and CC Thompson analyze NOTES research and indicate candidate NOTES spin-off procedures. Among them is Endoscopic Full Thickness Resection of GI lesions with subsequent full thickness closure of the organ wall with an OTSC® clip by Ovesco Endoscopy. Preclinical research at Ovesco includes combined mechanisms for full thickness resection of polyps, adrena or other suitable lesions, and a Technical Report on the prototype of a dedicated Full Thickness Resection Device (FTRD) has been recently published by MO Schurr et al. in Minimally Invasive Therapy & Allied Technologies.

NOTES spin-off for the therapeutic gastroenterologist: natural orifice surgery
RR Watson, CC Thompson Minerva Gastroenterologica e Dietologia 2011 Jun;57(2):177-91

Endoluminal full-thickness resection of GI lesions: A new device and technique
MO Schurr, F Baur, CN Ho, G Anhöck, T Kratt, T Gottwald Minimally Invasive Therapy, 2011;20:189-92

July 2011 | Removal of over the scope clips (OTSC) with an Nd:YAG Laser.
Fähndrich et al. from Dortmund recently reported of their experience with a Nd:YAG-Laser for the removal of the OTSC®-clip in 3 cases. (i) after closure of an oesophageal fistula, (ii) after closure of a perforation of the distal common bile duct in the roof of the papilla and (iii) after clip misplacement in a case of a wide oesogastromedial fistula resulting in a severe oesophageal stenosis. Clinically relevant thermal lesions were not observed after the procedure. If clinically necessary, the OTSC-system® can be safely removed by the Nd:YAG Laser in centres for interventional endoscopy according to them.

Removal of over the scope clips (OTSC) with an Nd:YAG Laser.
Fähndrich M, Sandmann M, Heike M. Z Gastroenterol. 2011 May;49(5):579-83. [Epub 2011 May 9]

July 2011 | Benefit of a clipping device in use in intestinal bleeding and intestinal leakage
Recently JG Albert et al. published the results of their experience with the OTSC® System for the treatment of intestinal bleeding and closure of GI leaks in a series of 19 consecutive patients (12 leaks, 7 hemorrhages). All bleeding cases had unsuccessfully undergone conventional endoscopic treatment and were therefore included. The primary

September 2011 | Endoscopic treatment of perforated peptic gastric ulcer: case report of two patients
The surgical unit CLINTEC, Karolinska Institutet vid Karolinska Universitetssjukhuset Huddinge, Stockholm, Sweden, reports of a 42-year old woman with a 3x4-mm perforation in the antrum which was successfully treated with the OTSC® System. The patient was discharged after 4 days. At follow-up, a month later, the patient presented fully recovered.

The second patient, a 83-year old man, had a 23-mm perforation which could also be closed successfully using two OTSC® clips.

The authors conclude that endoscopic closure with the OTSC® System offers an interesting alternative to conventional surgical treatment of peptic ulcer perforations.

September 2011 | Closure rate of 90% in fistulas, anastomotic leaks and perforations treated with OTSC®: a new case series published
A new case series, reported by Dres Sandmann, Heike and Faehndrich, Klinikum Dortmund Mitte, Germany, was published in the English Zeitschrift fuer Gastroenterologie.

The authors present a series of 10 patients with penetrating defects within the digestive tract. Pathologies were fistulas (esophagotracheal, esophagopleural, gastrocutaneous and colovesical), perforations (after mucosectomy, after papillotherapy and BPD/PEG replacement) and anastomotic leaks (after gastroscopy and gastronomy). They report a closure success rate of 90% (9 out of 10 patients).

Application of the OTSC System for the Closure of Fistulas, Anastomotic Leaks and Perforations within the Gastrointestinal Tract

August 2011 | OTSC® clip among most promising technologies for closure of perforations in the digestive tract
In the latest issue of the Spanish journal Gastroenterologia y Hepatologia Dr. F. Junquera and colleagues, from the Servicio de Aparato Digestivo, Corporación Parc Taulí, Sabadell, Spain, describe the OTSC® System and its use in full thickness perforations of the digestive tract. The authors conclude that OTSC® is one of the most promising technologies for closure of perforations of the gastrointestinal tract because of its efficacy, safety and rapidity. Other indications include severe gastrointestinal bleeding, fistulose, anastomotic leaks, and bariatric surgery anastomosis remodelling.

OVESCO: a promising system for endoscopic closure of gastrointestinal tract perforations (in Spanish)
success rate then was 100% with 3/7 patients requiring further treatment afterwards. The overall success rate regarding leaks was 66% (ranging from closure of stom-ach perforation due to necroising pancreatitis to gastrocutaneous fistulas and postoperative leaks). The follow-up time ranged from 6 to 88 weeks.

Benefit of a clipping device in use in intestinal bleeding and intestinal leakage


June 2011 | Clinical case studies on OTSC® presented at Hungarian gastroenterology congress

At the 53rd Annual Meeting of the Hungarian Society of Gastro-entrology (4–7 June 2011 in Tihany) Dr. János Sümegi from the Borsod-Abauj-Zemplén County Hospital in Miskolc, Hungary, reported about unusual clinical cases successfully treated with Ovesco’s OTSC® clip. The cases included the closure of an esophageal fistula due to suture line failure after esophageojejunostomy and the management of gastric hemorrhage from a Dieulafoy ulcer.

June 2011 | Cost advantages for OTSC® treatment of gut fistula compared to surgical alternative

In their recent report about a series of 12 consecutive pa-tients with post-surgical or traumatic fistulas of the gastro-intestinal tract treated by OTSC® clipping, R. Manta et al., Modena, Italy carried out a cost comparison. They found OTSC® therapy considerably cheaper than alternative surgi-cal intervention (USD 1,050 vs USD 3,800 in this particular hospital setting). Besides the cost advantage also the the-rapeutic results are reported as favourable: “No complica-tions occurred, and the leaks were all healed at follow-up 1–3 months later. In 9 of the 11 patients, the leak was sealed within 4 days by a single application.”

The authors conclude that OTSC® clipping is an effective and technically simple technique for the closure of wall defects.

Endoscopic treatment of gastro-intestinal fistulas using an over-the-scope clip (OTSC) device: Case series from a tertiary referral center

Manta R, Manno M, Bertani H, Barbiera C, Pigó F, Mirante V, Longinotti E, Bassotti G, Conigliaro R.

March 2011 | The Over-The-Scope Clip (OTSC®) for the treatment of gastro-intestinal bleeding, perforations, and fistulas

In the latest issue of Surgical Endoscopy Andreas Kirschniak et al. report of a series of 50 patients that has been treated with the OTSC system for hemostasis (n = 27) in the colon and the upper GI tract, closure of esophageal, gastric, and colonic perforations (n = 11) as well as closure of fistulas (n = 8) and for preoperative marking (n = 4).

The primary treatment was reported successful in all cases. In more detail, there were two secondary bleedings that required endoscopic re-intervention, and the permanent clo-sure of fistulas could not be achieved in all cases. The au-thors conclude that the OTSC system is effective and safe for complicated bleeding and closure of fresh perforations of the gastrointestinal tract.

The Over-The-Scope Clip (OTSC®) for the treatment of gastrointestinal bleeding, perforations, and fistulas

Kirschniak A, Subotova N, Zieker D, Königsrainer A, Kratt T

May 2011 | Case report: closure of broncho-esophageal fistula

In the April issue of the journal Gastrointestinal Endoscopy A Rebello and colleagues, Ato Ave Hospital, Guimarães, Portugal, present a case report with closure of spontaneous esophageo-bronchial fistula in a lung cancer patient, after radio-chemotherapy. Closure of the fistula was feasible by means of OTSC clip application and additional placement of a self-expandable covered stent. Besides partial occlusion of the fistula orifice the OTSC clip also worked as an anchoring mechanism for the stent to avoid migration. Until one month after there were no signs of fistula re-open-ing. The patient died of the underlying pulmonary tumor.

Complex endoscopic resolution of a large broncho-esophageal fistula

Rebelo Ana, Moutinho-Ribeiro Pedro, Cotter José
Gastrointestinal Endoscopy 2011;73:4 833-4

April 2011 | Post-surgical gastrointestinal fistulas treated with OTSC®

In the March issue of the journal Endoscopy R. Manta et al. report about a case series of 12 consecutive patients treated with OTSC for closure of post-surgical gastrointestinal fistu-la in a tertiary referral center (S. Agostino Estense Hospital, Modena, Italy).

Fistula closure with OTSC clipping was successful in 11 out of 12 cases. Healing was confirmed by radiographic control or endoscopy. No device-related complication occurred. The authors conclude that OTSC clipping is an effective and technically simple technique for the closure of wall defects.

Endoscopic treatment of gastrointestinal fistulas using an over-the-scope clip (OTSC) device: Case series from a tertiary referral center

Manta R, Manno M, Bertani H, Barbiera C, Pigó F, Mirante V, Longinotti E, Bassotti G, Conigliaro R.

March 2011 | OTSC® System sucessfully administered in full wall resection for early colon cancer

Dr. Martin Fähndrich and Dr. Marcel Sandmann of the Department of Gastroenterology, Klinikum Dortmund, Germany for the fourth time successfully used the OTSC® System in a full wall resection for early colon cancer. The tumor was secured within the resection cap of the system, the clip then released, and the target tissue even-tually resected safely. The procedure was broadcasted by Germany’s largest public broadcasting company WDR, Co-logne. Audience ratings indicated almost 1 million viewers of the transmission.

February 2011 | EURO-NOTES working group report: safe closure with OTSC®

The 4th EURO-NOTES Meeting, Rome (September 2010) was also the venue for the official working groups of EURO-NOTES. The report of the working group meet-ing was recently published in the journal Endoscopy. With regard to closure of transmural access lesions in NOTES the report states that several studies menti-oned safe access and closure with new devices such as anchor systems or Ovesco’s large scale clip (OTSC®)

Natural-orifice transluminal endoscopic surgery (NOTES) in Europe: summary of the working group re-port of the Euro-NOTES meeting 2010

Endoscopy 2011; 43: 140-3

February 2011 | Advance notice: OTSC® System prominently represented at 41st Congress of the DGE-BV, 17–19 March 2011 in Munich, Germany

The 41st Congress of the German Society for Endoscopy and Imaging Procedures (Deutsche Gesellschaft für Endoskopie und Bildgebende Verfahren, DGE-BV) is held at The Westin Grand München Arabellapark under the presidency of Prof. Dr. Hubertus Feussner. Ovesco is present at the industry exhibition, booth # 205. Ovesco is also sponsoring several workshops for advanced endoscopists:

Thursday, 17 March 2011

Hands-on Training at the EASIE simulator, Workshop I1+2

Kompilationsmanagement: Perforationen und post-operative Leckagen

Workshop J1 and Workshop J2

NOTES-Tool-Box und neue Technologien – Dissektoren, neue Blutstillungs- und Verschlussysteme, Nähmaschinen.

Furthermore, the OTSC® System is dealt with in a number of presentations:

Thursday, 17 March 2011

Neue Methode der endoskopischen Vollwandresektion mit Hilfe des OTSC Systems nach endoskopischer R Resektion eines low grade kolorektalen Frühkarzinoms

M Sandmann, M Heike, M Fähndrich, Dortmund

Successful complication management of a colon perforation after PEG implantation with the OTSC system

M Fähndrich, M Sandmann, M Heike, Dortmund

Comparison of endoscopic closure modalities for stand-ardized colonic perforations in a porcine colon model

Voermans RP, Vergouw F, Breedveeld P, Fockens P, van Berge Henegouwen MI


Further reading:


March 2011 | OTSC® System successfully presented at FISMAD conference, Torino, Italy

Dr. Andreas Kirschniak, Dr. Katarina Kunst, Dr. Martin Fähndrich, and Dr. Marcel Sandmann presented a new study on the treatment of a cutaneous fistula in a lung cancer patient, after radio-chemotherapy. Closure of the hypopharynx. The lesion was endo-scopically closed by means of an OTSC clip. 3 days af-ter the procedure normal contrast swallow with gastro-grafin demonstrated normal liquid passage, a CT-scan showing no mediastinal emphysema or fluid collection. The patient had some discomfort with pharyngeal for-eign body feeling. After 5 weeks the clip detached and was swallowed by the patient without complications. The further course was uneventful.

March 2011 | OTSC® comparable to surgical suture for the closure of colonic perforations in a standardised porcine model

RP Voermans et al. report of an animal series of ex vivo colonic perforations that were treated with several methods, surgical suture being considered the gold standard.

Mean colotomy leak pressure (mmHg) as primary out-come was comparable in surgical suture, flexible stap-lers, and OTSC®.
January 2011 | Successful treatment of duodenal fistula after gastrectomy with the OTSC® clip
Dr. R. Bini and colleagues, SG Bosco Hospital, Torino, Italy, report about the successful closure of a duodenal fistula with Ovesco’s OTSC® clip. The fistula arose in an elderly patient who was treated with emergency gastrectomy for severe peptic ulcer bleeding. The postoperative fistula was associated to sepsis, malnutrition and hydro-electrolyte disorders and did not respond to surgical and medical treatment attempts. The fistula was then closed endoscopically by means of an OTSC® clip.

Endoscopic Treatment of Postgastrectomy Duodenal Fistula With an Over-The-Scope Clip

January 2011 | Closure of rectovesical fistula by means of OTSC® and cyano-acrylate reported
Dr. Benedetto Mangiavillano, Dept. of Gastrointestinal Endoscopy, University of Milan, Italy and colleagues report about the closure of a rectovesical fistula in a patient after laparoscopic sigmoid resection for adenocarcinoma of the sigmoid. A two-step approach was used in which the 6-mm fistula orifice was first reduced by an OTSC® clip, and a small residual opening was subsequently closed with cyano-acrylate injection in a second procedure. The patient was followed for approx. 10 weeks when CT showed the fistula completely closed. The authors conclude that OTSC® clipping with possible additional cyano-acrylate can be effective in the treatment of anastomotic leakage and fistula and should be considered in such cases before the patient is referred to surgery.

Endoscopic sealing of a rectovesical fistula with a combination of an over the scope clip and cyano-acrylate injection
J Gastrointest Oncol. 2010; 1:122-4

December 2010 | “Sparing the surgeon”: OTSC® for gastrointestinal perforation
The Gastroenterology Department of the University of Zurich, Switzerland (Dr. L. Seebach, Prof. Dr. P. Bauerfeind, Dr. C. Gubler) reports about 7 patients treated with OTSC for gastrointestinal perforation. The study was carried out in the porcine animal model (n=16). A hybrid-NOTES technique was used, adding two 2-mm trocars and one umbilical laparoscope. The survival follow-up time was 10 days. Main outcome parameters included technical procedural success and organ closure, uncomplicated survival and histology-confirmed full-thickness closure of the gastric access site. Transgastric organ closure was successful in all cases in a mean time of 7 min (SD 3 min). Necropsy demonstrated absence of infectious complications. Histology revealed full-thickness healing in all cases (95% CI: 81-100%). The authors conclude: “Use of OTSC for gastrotomy closure is feasible, reliable and results in histology-proven full-thickness closure in survival porcine experiments.”

Hybrid NOTES transgastric cholecystectomy with reliable gastric closure: an animal survival study
Vennemann RP, van Berge Henegouwen MT, Bemelman WA, Fockens P
doi: 10.1007/s00464-010-1242-4

October 2010 | September issue of Endoscopy: The treatment of esophageal perforations with the OTSC® clip – a valid alternative to stenting
The September issue of the journal Endoscopy discusses the use of the OTSC clip for the closure of esophageal perforations. In the editorial, Dr. P. Eisendrath, Brussels, Belgium, states that the use of larger clips, such as the OTSC clip, could reduce the number of clips that must be placed and the dedicated forceps (remark: OTSC Twin Grasper®) may help to overcome the difficulties in approximating the two edges of the leak.

Esophageal leaks: extending our toolbox?
Eisendrath P | Endoscopy 2010; 42:753-4
An initial case series (n=2) on endoscopic closure of postoperative esophageal leaks with the OTSC clip is presented by Dr. J. Pohl et al., Wiesbaden, Germany. The authors conclude that OTSC clipping is an effective endoscopic treatment of intrathoracic esophageal leaks and might be considered as a valid alternative to stent treatment in selected cases.

Endoscopic closure of postoperative esophageal leaks with a novel over-the-scope clip system

September 2010 | OTSC® for closure of rectovesical fistula after radical prostatectomy
There is growing positive clinical experience worldwide with the use of Ovesco’s OTSC clip in the treatment of chronic fistula. Dr. M. Cavina and coauthors, Reggio Emilia, Italy, report about the successful treatment of a chronic recto-vesical fistula in a male patient, subsequent to prostatectomy. The size of the chronic fistula was 4 mm and it was effectively occluded by means of a single OTSC 12/6a clip. The case was reported in the Italian Journal of Digestive Endoscopy, Utilizzo della clip Ovesco nel trattamento di una fistola retto-vesicale
Maurizio Cavina, Romano Sassettili, Francesco Azzolini, Luigi Cavallini, Francesco Bolognini, Veronica Fori, Giuliana Serci, Cristiana Todî, Giuliano Bedogni
Servizio di Gastroenterologia ed Endoscopia Digestiva, Arcispedale Santa Maria Nuova di Reggio Emilia, Giorn Ital End Dig 2010;33:147-8

September 2010 | OTSC® clip enables secure and fast gastric closure after transgastric experimental oophorectomy
In a recent experimental study, V. Turulescu et al., Bucharest, Romania, studied the use of OTSC® and other closure methods for managing the gastric access site after transgastric oophorectomy. The procedure was carried out in the porcine animal model (n=10). In 5 animals a hybrid-NOTES technique with supplemental laparoscopic access
Endoscopic full-thickness resection and defect closure in the colon
v. Renteln D, Schmidt A, Vassilou MC, Rudolph HU, Caca K
Gastrointestinal Endoscopy 2010 Jun; 71(7):1267-73

July 2010 | Successful management of GI perforations with the Ovesco OTSC® clip
A multicentric study performed at 2 Italian endoscopy centers (General Hospital, San Remo, and Humanitas Hospital, Milan) has investigated the use of the OTSC® clip for closure in 10 patients. Indications for digestive organ wall closure included acute perforations, fistula and anastomotic leak. The location of the leak was gastric (n=2), duodenal (n=2) and colonic (n=6). The leak diameter ranged from 7 to 20 mm. After closure with the OTSC clip, patients received follow-up endoscopy 3 months after the intervention. The technical success was 8 out of 10 cases. None of the cases with initial technical success required additional treatment.

The authors of the study conclude that the OTSC System is a useful device for the management of larger GI leaks in a variety of clinical indications.

Endoscopic management of GI perforations with a new over-the-scope clip device
A Paradisi, A Repici, A Pedroni, S Bianchi, M Conio

June 2010 | Successful OTSC closure of esophagobronchial fistula reported at national gastroenterology congress in Portugal
Dr. P. Mortinho-Ribeiro and colleagues, Centro Hospitalar do Alto Ave – Guimarães, Portugal, report about the successful closure of a 15-mm esophagobronchial fistula in an esophageal cancer patient following chemoradiotherapy. By using the OTSC® Anchor to pull the fistula orifice to the tip of the OTSC cap and application of an OTSC clip, the fistula was successfully closed. Supplementary stent placement was done to secure the result. The case was presented at XXX National Congress of the Portuguese Society of Gastroenterology in Vilamoura, June 9-12, 2010.

June 2010 | Tuebingen University reports success in 60 consecutive patients treated with OTSC®
Bruchsal, Germany, June 11, 2010. At the XXIV Congress of the Southwest German Society of Gastroenterology Thomas Kratt, MD, Surgical Endoscopy, Tuebingen University Hospital, Germany, reported about a case series of 60 patients treated with OTSC for various indications. 37 patients were treated for stopping gastrointestinal hemorrhage, 11 for closure of perforation, 8 for closure of fistulae and 4 for the marking of lesions. In all 60 cases technical success, defined as ability to place the OTSC at the desired location, was achieved. In the 37 cases of GI bleeding 2 release blepsades were seen. In all 11 cases of GI perforation therapeutic success, defined as absence of failure/recurrence was achieved. In the 8 fistula patients 3 recurrences were found.

The authors conclude that on their experience OTSC® is best applied in the following indications:
- Emergencies:
  - Severe peptic ulcer bleeding
  - Iatrogenic perforations
  - Spontaneous perforations
  - Hemorrhoidal post-surgical hemorrhage

- Elective:
  - Anastomotic failure
  - Fistula
  - Anastomotic correction
  - NOTES

Das Over-The-Scope Clip System (OTSC®): Erfahrungen in der klinischen Anwendung bei 60 Patienten
Kratz T, Stüker D, Küper M, v. Felizzi M, Königraiser A, Kirschniak A
There were two more reports on successful application of Ovesco’s OTSC® system:
- Ulkus-Arrosionshilfen bei der A. gastroduodenalis – Vermeidung des Notfallegebrifs durch ein neuartiges Clip-System – zwei Fallberichte
  - Krat T, Stüker D, Bürcher B, Heininger A, Miller S, Königraiser A

Aus dem Labor in die Klinik: Die transgastrisch-flexible NOTES-Laparoskopie

June 2010 | Ovesco’s OTSC® Anchor for supporting gastric mucosal resection
Daniel von Renteln, MD, and co-authors report about the use of the OTSC® Anchor in EMR. They carried out an experimental study in 10 domestic pigs using a dual channel endoscope. Gastric lesions of approx. 3 cm were simulated by RF-Marking. The OTSC® Anchor was used through one working channel and a monofilament suture through the other. The tissue anchor was advanced through the suture and anchored in the submucosal layer. After lifting the lesion, the suture was closed and the mucosal resection completed. The mean time to perform gastric EMR was 32 min. The mean surface area of the resected specimen was 9.36 sq cm. Complete en-bloc resection of the large specimen was achieved in one maneuver in 9 cases, it required two maneuvers in one case. One gastric wall perforation occurred. The authors conclude that grasp-and-snare EMR is feasible with the OTSC® Anchor.

Endoscopic mucosal resection using a grasp-and-snare technique

June 2010 | Clinical NOTES experience with OTSC® presented at German D-NOTES meeting in Mannheim, Germany
At the annual meeting of the German NOTES working group, D-NOTES, in Mannheim, Germany, June 3-5, 2010, two research groups reported about their clinical experience with the OTSC clip for gastric closure.
- The chairman of the meeting, PD Dr. Georg Kähler, Mannheim University Hospital, is using the OTSC clip for closure after transgastric appendectomy. Dr. Thomas Kratt, Tuebingen University Hospital for closure after transgastric diagnostic laparoscopy. Both centers have enrolled first patients into their respective studies. OTSC was shown to be effective and safe in closing gastrointestinal perforations.

May 2010 | Central Endoscopy Department (Zentrale Interdisziplinäre Endoskopie) of Mannheim University Hospital starts clinical trial on transgastric NOTES appendectomy
The Central Endoscopy Department at Mannheim University Hospital, Germany (Director: Georg Kähler, MD, PhD) has started enrolling patients into an investigator initiated trial on transgastric NOTES appendectomy. Ovesco’s OTSC® clip is used for closure of the gastric access site after completion of the procedure. The Central Endoscopy Department in Mannheim is among the leading international institutions in interventional endoscopy and NOTES research and is hosting the 2010 D-NOTES meeting, June 3-5, Mannheim, Germany.
May 2010 | Study demonstrates that Ovesco’s Traction Polypectomy Snare is 31% more efficient in tissue acquisition than conventional snares

Ovesco’s Traction Polypectomy Snare is a newly designed, serrated snare for endoscopic tissue acquisition procedures such as polypectomy, endoscopic mucosa resection (EMR) or similar techniques. Its specific design reduces slipping of the snare upon closure and loss of tissue intended for removal. At the same time the Traction Snare has excellent maneuverability and repositioning properties, making its handling simple and efficient.

A recent experimental trial by RL Proost and FE Baur, Stuttg- gart, Germany has shown that the Traction Snare removes 31% more tissue than a conventional snare. Comparing the weight of colonic tissue removed with one snare deployment was 454 mg (SD 202) with the Traction Snare vs 347 mg (SD 165) with a conventional snare. This difference was statistically significant (p=0.017).

The authors conclude that the Traction Snare increases the effectiveness of snare resection by avoiding the accidental loss of entrapped tissue. In addition the achievable reduction of sample numbers during piecemeal resection may increase the precision of histo-pathological assessment.

A new serrated snare for improved tissue capture during endoscopic snare resection

Proost RL, Baur FE | Minim Invas Therapy 2010; 19:100-4+

May 2010 | DDW 2010 – OTSC for endoscopic closure of acute perforations of the gastro-intestinal tract using the Over-the-Scope Clip: A prospective multicenter human trial (CLIPPER-trial)

In his presentation “Endoscopic closure of acute perforations of the gastrointestinal tract using the Over-the-Scope Clip: A prospective multicenter human trial (CLIPPER-trial)” at DDW 2010, New Orleans, May 4, Dr. Rogier Voermans, Dept. of Gastroenterology and Hepatology, Academic Medi- cal Center, University of Amsterdam, Netherlands, gave an update on intermediate results of this prospective multicenter cohort study conducted at 10 tertiary-care medical centers in Europe. The aim of the trial is to evaluate safety and reli- ability of the endoscopic closure of acute perforations of the human gastrointestinal tract (esophagus, stomach, duode- num, colon) using Ovesco’s OTSC System.

The primary endpoint was successful closure, defined as macroscopic adequate closure and no leakage on water soluble contrast X-ray within 24 hours without additional in- terventions. He reported on 24 of 36 planned concur- rent patients in the participating centers. Primary closure could be achieved in 22 of 24 patients. One patient suffered other complications before the clip could be applied, and one pa- tient failed adequate placement of the clip. Only one patient of those 22 patients where the system could be administered suffered delayed leakage and had to be treated surgically. The trial is ongoing. Final results will be published as available.

May 2010 | Ovesco Endoscopy’s OTSC System at DDW in New Orleans: clinical paper presenta- tions, hands-on workshop and industry exhibition

The OTSC System is presented at the Digestive Disease Week, DDW 2010, New Orleans, May 1-5, 2010. Besides scientific paper presentations about clinical experience and data by different authors, the ASGE Hands-on Work- shop „GI Emergencies: Sutures, Closures and Hernostas- is” by Juergen Hoechberger, MD PhD, demonstrates the OTSC System in practical use, supported by K Matthes, MD, G. Haber, MD and RJ Rothstein.

April 2010 | New publication on the use of OTSC in bariatric patients

Dr. Federico Lacopini published a case report on the use of OTSC to treat complications of gastric banding in the World Journal of Gastroenterology. Ovesco’s OTSC clip was used to close full thickness stomach erosions resulting from long- term gastric band implantation. Two patients were success- fully treated.

Over-the-scope clip closure of two chronic fistulas after gastric band penetration

Federico Lacopini, Nicola D Lorenzo, Fabrizio Altiora, Marcel Oliver Schur, Agostino Scozzaro
World J Gastroenterol 2010 April 7; 16(13):1665-9

April 2010 | OTSC System referenced as best gastric closure system in latest review paper

A new review paper by Alberto Arezzo and Mario Morino, Torino, Italy, published in Surgical Endoscopy references Ovesco’s OTSC System as safe and efficacious for gastric closure in NOTES.

Compared to other available closure technologies, such as other clips, T-tags or endoscopic suture devices, OTSC is evaluated „very good” under the categories „simplicity”, „security” and „effectiven- ess”, leading to the highest overall score of all systems.

Endoscopic closure of gastric access in perspective

Arezzo A, Morino M | Surgical Endoscopy 2010 24:2; 298-303

March 2010 | Ovesco supports lunch sym- posium on OTSC clip and is sponsor of the 40th Congress of the German Society for Endo- scopy (DGE-BV) in Hanover, March 11–13, 2010

The 40th Congress of the German Society for Endoscopy (DGE-BV) is held in Hanover under the presi- dency of Prof. Dr. Jürgen Hochberger, Hildesheim. Ovesco supports the lunch symposium on clinical indi- cations and experiences with the OTSC clip on Friday, March 12, 2010, 13:00-14:00 h, Saal 1A

March 2010 | Tübinger University starts clinical NOTES trial on diagnostic laparoscopy

Successful closure of gastric NOTES access

The first patient was recruited in the Transgastric NOTES Laparoscopy Trial. Through an incision in the anterior gas- tric wall which was dilated with a 15-mm balloon, the abdo- men was explored and staging was performed in a patient suffering from an infrequent type of a lymphoma.

The closure was performed with an OTSC clip 12-6 gc. The gastrotomy was immediately gas tight. Postoperative follow-up was without any complications.

March 2010 | Italian gastroenterologists report successful closure of tracheo-esophageal fistula using Ovesco’s OTSC clips

In the recent issue of the journal Endoscopy, Dr. M. Traina and colleagues, Palermo, Italy, report about the closure of a chronic tracheo-esophageal fistula emerging in a patient after long-term ventilation.

The fistula was located 20 cm from the mouth. After closure with an OTSC clip the clinical condition of the patient improved and healing of the fistula was seen at follow-up endoscopy, 2 and 4 weeks later. No complications were reported.

New endoscopic over-the-scope clip system for closure of a chronic tracheo-esophageal fistula


February 2010 | Researchers report secure closure of duodenal perforations using the OTSC clip in a randomized controlled experimental trial

In the recent issue of the journal Gastrointestinal Endoscopy, Dr. Daniel von Renteln and colleagues report about a series of 24 animals (domestic pig) in which duodenal perforations had been intentionally created. All cases were randomized to undergo either surgical repair by hand sewing or endo- scopic closure by means of the OTSC clip.

At necropsy, all OTSC and surgical closures demonstra- teed complete sealing of duodenotomy sites. Mean time for OTSC closure was 5 minutes (range, 3.8-6 min; SD 2).

Leak testing under pressure demonstrated a mean burst pressure of 166 mm Hg (range 80-260; SD 65) for OTSC closures and 143 mm Hg (range 30-300, SD 83) for surgical sutures.

This shows that OTSC closure of duodenal full thickness wall lesions can result in higher pressure resistance than hand sutu- ring, although the difference was not significant. There were no complications related to the OTSC clip reported.

Endoscopic closure of duodenal perforations by using an over-the-scope clip: a randomised, controlled por- cine study

D von Renteln, HU Rudolph, A Schmidt, MC Vasiliou, K Caca Ludwigshurg and Heidelberg, Germany; Lebanon, New Hampshire, USA

Gastrointestinal Endoscopy 2010; 71:1; 131-8

February 2010 | Résumé to the 12th Düsseldorf International Endoscopy Symposium, 5–6 Feb- ruary 2010

This year’s 12. Internationales Endoskopie Symposium again enjoyed an impressive acceptance by a national and international audience as well as an excellent faculty of some of the finest experts in the field.

Prof. Dr. Stefan Seewald from Zürich in his oral presen- tation („Neue Produkte zur endoskopischen Therapie von Perforationen und Fisteln/New devices for endoscopic treatment of perforations and fistulas”) very much focussed on the OTSC System. It was basically cited to be the answer to many problems in GI endoscopy. This was followed by a lively discussion on challenging indications for the system like esophago-tracheal fistulas.

Ovesco’s booth again was able to attract a huge crowd. The feedback on the OTSC System plus the accessories including the latest product “traction snare” was overwhelming.

January 2010 | Korean endoscopists make reference to the OTSC clip as a device in ESD for gastric cancer

Prof. Won Young Cho et al. from the Dept. of Gastro- enterology (Director: Prof. Ju Young Cho) at the College of Medicine, Soonchunhyang University, Korea, refer to the OTSC clip as an endoscopic device for treating post- interventional bleeding or organ wall lesions in the chap- ter on Endoscopic Submucosal Dissection (ESD) of the recently published book “Endoscopic Treatment of Gastric Cancer”. Prof. Won Young Cho and his colleagues are lea- ding users of Ovesco’s OTSC in South Korea.

Endoscopic Treatment of Gastric Cancer

Prof. Dr. Juergen Hochberger, Hildesheim, Germany, showed the use of the Ovesco OTSC System at the 33rd Annual New York Course.

In an experimental laboratory demo, transmitted live from Lenox Hill Hospital, he closed a 8–10-mm full thickness esophageal perforation successfully by means of one OTSC clip.

November 2009 | Ovesco exhibits at Gastro 2009, UEGW/WCOG, the jointly organised landmark meeting of UEGF, WGO, OMEMD and BSG, London, November 21–25, 2009

Moreover, OTSC is focussed in a poster and in an oral presentation: OVER-THE-SCOPE CLIP (OTSC) CLOSURE OF TWO CHRONIC FISTULAS AFTER GASTRIC BAND PENETRATION is the title of a poster presentation of F. Iacopini et al. A 45-year-old woman presented with a band erosion and penetration through two large tears at the posterior wall of the gastric fundus. A sub-epithelial abscess was located by computed tomography (CT-scan). Surgery was performed but external drainage of enteric material persisted for 2 weeks. Both fistulas were successfully closed with OTSCs (one in combination with a fully-covered esophageal SEMS) and remained successfully closed. Both OTSC clips were spontaneously lost after 4 weeks. The authors conclude that if prospective large comparative studies with fully-covered stents and OTSC will confirm this initial observation, the OTSC may be the least invasive, easiest, and safest endoscopic method to close chronic small fistulas or leaks.

In an oral presentation D. v. Renteln et al. report data of a RANDOMIZED CONTROLLED TRIAL COMPARING ENDOSCOPIC CLIP TECHNIQUES FOR NOTES GASTROTOMY CLOSURE. In 20 pigs an 18-mm gastrotomy was created using PEG technique and a wire guided 18-mm dilatation balloon. Animals were randomly assigned to gastrotomy closure using endoclips (n=10, Resolution clips, Boston Scientific) or over-the-scope clips (n=10, OTSC®, Ovesco). The specially designed tissue approximation grasper (Twin Grasper®, Ovesco) was used to achieve optimal tissue approximation prior to placement of OTSCs for closure. Laparoscopic leak tests were carried out after each gastrotomy closure. Necropsies were performed 10–14 days post procedure. The authors conclude that NOTES gastrotomy closure using standard endoclips is associated with significant leaks and the risk of intra-abdominal infection whereas the OTSC System for endoscopic gastro-tomy closure reduces the risk of leakage and intra-abdominal infectious complications. Ovesco also takes part in the Teaching Theatre ESGE/OMED Learning Area with daily practical hands-on demonstrations of the OTSC System for the endoscopic treatment of hemorrhage and closure of acute and chronic organ wall lesions (Mon 23–Wed 25).

November 2009 | Randomized controlled trial demonstrates advantages of OTSC® vs standard endoscopic clips in experimental gastro-tomy closure

A new comparative study published by D. von Renteln et al. in the journal Endoscopy investigated closure safety after NOTES gastro-tomy in the porcine model (n=20) using standard endoclips or Ovesco OTSC®. No leaks were observed after OTSC closure vs 3 minor and 1 major leak after endoclips closure. The time required for the gastro-tomy closure procedure was 8.5 +/-9.1 minutes with OTSC and 31.5+/-24.2 minutes with endoclips. After necropsy 2 animals in the endoclips group showed signs of peritonitis. 1 animal in that group had to be sacrificed before finishing the study due to severe peritonitis. The authors conclude that standard endoclips have an increased risk of failure in the closure of NOTES gastro-tomy. Randomized controlled trial comparing endoscopic clips and over-the-scope clips for closure of natural orifice transluminal endoscopic surgery gastro-tomies D von Renteln, MC Vassilaki, RI Rothstein. Dept. of Gastroenterology and Hepatology. Dept. of Surgery Dartmouth-Hitchcock Medical Center, Lebanon, NH, USA Endoscopy. 2009 Dec41(12):1056-61. [Epub 2009 Nov 6]

November 2009 | Experimental study confirms pressure tightness of gastro-tomy closure with OTSC compared to the gold standard of hand-suturing

R. Voomaens et al. published comparative data on gastric closure after NOTES in the ex vivo experimental model. Gastric closure with the OTSC clip was compared to gastric closure by hand-suturing, determined as the gold standard. Surgical suturing demonstrated pressure tightness of the closure up to a mean leak pressure of 206 mm Hg (SD 59), (n = 15 samples). OTSC closure demonstrated tightness up to a mean pressure of 233 mmHg (SD 47), (11 samples). This was non-inferior to the gold standard (p = 0.003). The authors conclude that closure of gastric incisions meeting predetermined pressure resistance criteria was attainable and easy with the OTSC System.

Novel over-the-scope-clip system for gastro-tomy closure in natural orifice transluminal endoscopic surgery (NOTES): an ex vivo comparison study

RP Voomaens, MI van Berge Henegouwen, WA Berenpelman, P Fockens Department of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands

Department of Surgery, Academic Medical Center, Amsterdam, The Netherlands


November 2009 | Ovesco presents at the EndoClubNord, 6–7 November 2009 in Hamburg, Germany

At this year’s EndoClubNord at the Congress Center Hamburg Ovesco’s OTSC (over the scope clip) system has been presented in a live demo: Prof. Dr. Thomas Rösch (Dept. of Surgery and Clinic for Interdisciplinary Endoscopy, University Hospital Eppendorf, Hamburg) endoscopically removed a submucosal tumor in the anterior wall of the stomach. In a rendez-vous-procedure he was supported by a team of surgeons of the Dept. of Surgery (also UKE) via a single port access. The respective area of the stomach was marked and dissected full well, first by ESD then by transmural endoscopic cutting of the muscular layer. The stomach was closed through the flexible endoscope with two OTSC gc clips, was re-inflated thereafter and proved to be tight. The surgical team then closed the outer of the stomach intraperitoneally with an endo-TEA- stapler.Ovesco is currently testing full thickness resections of the GI tract with the approved OTSC System. Smaller lesions already have been closed through the endoscope alone. Yet, the company is currently developing an “all-in-one” system which will allow for safe resection and closure in one procedure. The device is planned for approval and launch later next year. The new systems will enable healthcare professionals of both specialties to more aggressively diagnose and yet less invasively treat e.g. submucosal tumors of uncertain dignity.


At the 21st Conference of the Society for Medical Innovation & Technology (SMT) Ovesco’s OTSC clip is presented in various scientific sessions.

Dr. Agostino Scozzarro and colleagues, Rome, Italy, report about the successful closure of chronic fistula related to adjustable gastric band erosion, using OTSC clipping.

The use of OTSC in Natural Orifice Transluminal Endoscopic Surgery (NOTES) is presented by Prof. Alberto Arzecco, Torino, Italy, within a hands-on workshop on basic techniques in NOTES. He also shows recent data on transgastric cholecystectomy and secure endoscopic closure of the stomach with the OTSC clip in a surviving porcine model. Further, he reports about the use of OTSC for the treatment of posturgical healing problems in bowel anasto-mosis. He recommends OTSC clipping for suitable cases in his overview presentation on closure of fistula and chronic pelvic abscess after colorectal surgery.

A summarizing overview about global clinical experiences with the OTSC clip is given by Prof. Dr. Marc Q. Schurr, Member of the Executive Board of Ovesco Endoscopy AG.

September 2009 | Reports about the OTSC clip as a closure device at EURO-NOTES workshop, Barcelona, Spain

Leading scientists present their results at the EURO-NOTES workshop, 24–26 Sept. 2009, Barcelona, Spain.

Prof. Dr. P. Fockens, Amsterdam, The Netherlands, explains the mode of OTSC application for NOTES gastric closure and its successful use in the experimental model.

Dr. D. von Renteln and colleagues, Ludwigsburg, Germany, present a randomized controlled trial comparing endoscopic clipping techniques for gastro-tomy closure with favourable results of the OTSC clip.

Dr. R. Voomaens et al., Amsterdam, The Netherlands, present an ex vivo comparison of current colotomy closure modalities, including OTSC.

Successful clinical cases with OTSC for the closure of gastric fistula after gastric banding are shown by Dr. F. Iacopini et al., Rome, Italy.

September 2009 | Ovesco’s OTSC System applied in live demos at 43rd Erlangen Symposium for practical gastroenterology and hepatology, Erlangen University, 18–19 Sept 2009

Future prospects in complication management are a major topic of this meeting (43. Erlanger Tagung für Praktische Gastroenterologie und Hepatologie). Ovesco’s OTSC System is applied in live demos transmitted from the Department of Gastroenterology and favourably pointed out by Prof. Dr. M. Raithel.

Further, Prof. Dr. J. Hochberger emphasizes the significance of the OTSC in view of NOTES.

June 2009 | HU Rudolf is awarded a prize for his study on endoscopic closure of duodenal perforations applying OTSC clips and the OTSC® Twin Grasper® at the XXIV Congress of the South-West German Society of Gastro-enterology

A working group of researchers of the Medizinische Klinik I in Ludwigsburg and the University of Heidelberg Medical Faculty Mannheim was honoured with a poster award for their presentation of results of an experimental randomised animal study on endoscopic closure of duodenal perforations.
Endoskopischer Verschluss von Duodenalperforationen: Eine randomisierte tierexperimentelle Studie
HU Rudolf, D von Renteln, A Schmidt, M Gieselmann, T Gutmann, K Caca
Klinikum Ludwigsburg, Medizinische Klinik I
Universität Heidelberg, Medizinische Fakultät Mannheim

June 2009 | Dr. Thomas Kratt wins award for his presentation of case reports on endoluminal OTSC® treatment of Boerhaave syndrome

At the XXth Congress of the South-West German Society of Gastroenterology in Stuttgart, a poster of a work-ing ing group from the University Hospital Tuebingen presenting a case report on endoluminal OTSC clip therapy with Ovesco’s OTSC clip in Boerhaave syndrome is awarded a poster prize

Suffiziente endoskopische Therapie bei Boerhaave-Syndrom
T Kratt, D Stüker, B Brücher, A Heininger, S Miller, A Königsrainer
Klinik für Allgemeine, Viszeral- und Transplantations-Chirurgie; Klinik für Anästhesie; Klinik für Radiologie
University Hospital Tuebingen

June 2009 | Experimental study proves effectiveness of the new clip version, OTSC gc for gastric closure in NOTES; EAES congress in Prague, 17–20 June 2009

The OTSC gc is a derivative of the established OTSC clip. It is specifically designed for the needs of gastric closure and has longer teeth to support gastric wall capture even more strongly than the OTSC clip.

In his oral presentation at the EAES congress in Prague in a session on Sutureless Tissue Approximation, Prof. Dr. Alberto Arezzo from Torino, Italy, reports on successful gastric closure with the new OTSC gc special clip: Transgastric cholecystectomy and secure endoscopic closure of transgastric approaches in a surviving porcine model.

Hollow organ closure devices and techniques for NOTES.

June 2009 | OTSC clips in combination with Twin Grasper and Anchor referenced as a suitable organ closure device.

In a comprehensive review in the Chirurgische Allgemeine Zeitung (CHAZ, 2009,10.5, 292-296), the German NOTES working group (D-NOTES) resumes all aspects of NOTES in a status report, including an assessment of all current closure techniques. Ovesco’s OTSC clips are highlighted and very favorably described, especially if applied in combination with the OTSC® Anchor and the OTSC® Twin Grasper®.

June 2009 | OTSC gc, a new special version of the OTSC clip for gastric closure, applied in live demo at D-NOTES 2009 in Munich, 11–13 June 2009

Organised by Prof. Dr. H. Feußner and Prof. Dr. A. Meining, Munich, from the D-NOTES working group.

In a live demo of transgastric access techniques Prof. Dr. Karel Caca from Ludwigsburg and PD Dr. Jörn Bernhardt from Rostock demonstrate the application of Ovesco’s new special clip OTSC gc and the OTSC® Anchor for gastric closure in NOTES. Prof. Dr. A. Meining also uses the OTSC® Twin Grasper for gastric closure.

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2014-07-04