February 2019 | OTSC® is safe and effective in pediatric patients for acute GI bleeding throughout the GI tract

Case series of 11 OTSC applications in 10 pediatric patients shows 100% technical success with immediate hemostasis and no complications. Tran P et al., UT Southwest Medical Center, Children’s Health – Children’s Medical Center Dallas, TX, USA, published the center’s experience utilizing OTSC® for nonvarical gastrointestinal bleeding in pediatric patients. Overall 10 patients (median age 14.7 years, range 3.9 – 16.8 years, median weight 39 kg, range 17.4 – 85.8 kg) underwent 11 endoscopic procedures utilizing the OTSC® System for hemostasis. Upper GI bleeding due to stomach or duodenal ulcer was seen in 4 patients, 2 of these had ulcer disease of the stomach and duodenum, respectively, secondary to nonsteroidal anti-inflammatory drug use. 1 patient had peptic ulcer disease of unknown etiology and 1 had duodenal ulcers secondary to active Helicobacter pylori infection. Upper intestinal bleeding was found in 2 other patients, 1 with postpolypectomy bleeding in the stomach and 1 with biliary sphincterotomy. Lower intestinal bleeding was seen in the remaining 4 patients. 1 patient had ulcer located in the sigmoid colon confirmed to be secondary toisteral ischemia. 1 had postpolypectomy bleeding in the sigmoid colon, and 2 patients had anastomotic ulcers, 1 at an ileocolic and 1 at an ileocolonic anastomosis. 4 patients (40%) had OTSC® placed as first-line therapy. Placement of the OTSC® was technically successful in all patients resulting in immediate hemostasis. No complications occurred. The two patients with anastomotic ulcers have continued to have clinical bleeding resulting in chronic anemia. One of these patients continues to require monthly iron infusions and the other remains transfusion dependent. The remaining 8 patients have had no evidence of recurrent bleeding at follow-up (median follow-up time 32.9 months, range 21.2 – 39.4 months). The authors concluded that the OTSC® System is a reliable and effective tool for active GI bleeding or high-risk lesions and should be considered for high risk or urgent/emergent cases of bleeding in children.


January 2019 | OTSC®: A meta-analysis of 1517 cases over 9 years confirms its outstanding clinical effects for rescue therapy

OTSC® use in patients with refractory gastrointestinal diseases achieved an overall clinical success rate of 78%, 85% for bleeding, 85% for perforation, 52% for fistula, 66% for anastomotic dehiscence, and 95% for other conditions. Overall OTSC®-associated complications were 1.7%, severe OTSC®-associated complications 0.59%. Kobara H et al., Departments of Gastroenterology and Ultrasound, University Medical Centre Goettingen, Germany presented prospectively collected multicentric data from 02/02009 to 09/2015 from all patients who underwent emergency endoscopy for high-risk NVUGIB in two academic centers and were treated with OTSC® as first-line (n=81) or second-line therapy (n=19). 100 consecutive patients (mean age 72 years, range 27-97) were included in the study. 51% had severe cardiovascular comorbidity (ischemic heart disease, congestive heart failure, hypertension, valvular heart disease, peripheral arterial occlusive disease, atrial fibrillation) and 73% were on anticoagulation therapy presenting with non-varical upper GI bleeding from ulcers with median size of 3 cm. OTSC® therapy led to 94% primary hemostasis and 24% long-term clinical success. Non-varical upper gastrointestinal bleeding (NVUGIB) is a common clinical problem with high rates of morbidity and a mortality rate between 5-10%. An aging patient population with a high prevalence of cardiovascular comorbidity has led to increased mortality. In contrast, NVUGIB in patients aged 70 years. A high comorbidity rate has also been identified as an independent risk factor for complications and mortality after NVUGIB. Wied E et al., Department of Gastroenterology and GI Oncology, University Medical Centre Goettingen, Germany presented prospectively collected multicentric data from 02/02009 to 09/2015 from all patients who underwent emergency endoscopy for high-risk NVUGIB in two academic centers and were treated with OTSC® as first-line (n=81) or second-line therapy (n=19). 100 consecutive patients (mean age 72 years, range 27-97) were included in the study. 51% had severe cardiovascular comorbidity (ischemic heart disease, congestive heart failure, hypertension, valvular heart disease, peripheral arterial occlusive disease, atrial fibrillation) and 73% were on anticoagulation therapy presenting with non-varical upper gastrointestinal bleeding (NVUGIB). OTSC® use decreased the rebleeding rate in high-risk patients (RS ≥ 8) and intermediate-risk (RS = 4 – 7) Rockall score patients as compared to the rates reported by the Rockall study, respectively. When compared to the institution’s prior study, a decrease in the rebleeding rate was found with OTSC® (0% vs. 21%, p = 0.06) in the intermediate-to-high risk Rockall score patients (RS ≥ 4). There was no difference in mortality rates as compared to both control studies. The authors concluded that use of OTSC® is safe, efficacious and appears superior to standard treatment for NVUGIB. OTSC® should be considered as first-line treatment for HR-AO bleeding. Use of over-the-scope-clip (OTSC) improves outcomes of high-risk adverse outcome (HR-AO) non-varical upper gastrointestinal bleeding (NVUGIB). Asokkumar R, Soetinro R, Sanchez-Yague A, Wie UK, Salazar E, Ngu JH. Endoscopy International Open 2018; 06: E786-E796 C.

December 2018 | Conference Report United European Gastroenterology Week (UEGW) 2018

The 26th United European Gastroenterology Week (UEGW) was held on October 20-24, 2018, in Vienna, Austria. The annual meeting is the main platform for original research with Ovesco technology and procedures. Hands-on training sessions in the ESGE learning area with the OTSC System attracted lively interest.

OTSC® System: Lively interest in Hands-On Trainings with the OTSC System

The European Society of Gastrointestinal Endoscopy (ESGE) offered an ESGE Learning Area to all delegates of the UEGW to provide an ideal setting for live encounter and interaction among aspiring endoscopists and renowned experts in the field. In the ESGE Learning Area, three 90-minute Hands-On Trainings with the OTSC System were offered. All Hands-On Trainings were fully booked.

Besides, a talk on the OTSC System was held in the ESGENA Lunch Session (A. Caputo: “Advantages of the OTSC System in the treatment of UGIB”) and the exhibition of Ovesco products attracted lively interest.

Large systematic review shows 77.96% clinical success of OTSC® in various indications without the need for further intervention

N. Bartell et al., Department of Gastroenterology and Hepatology, University of Rochester, United States, reported on a systematic review with the OTSC System. The study evaluated a large body of literature to determine the overall efficacy and safety of OTSC®. 81 case series/
OTSC® Hemostasis Update 5 | Research & clinical trials

November 2018 | Conference Report DGVS / DGHIN

The 73th annual conference of the German Society of Gastroenterology, and Digestive and Metabolic Diseases with Endoscopy Section (DGVS) took place together with the 12th autumn conference of the German Society of General Surgery and Visceral Surgery (DGAV) on September 12-15, 2018 in Munich, Germany. Over 1300 participants attended in talks, posters, research, innovation and video forums and hands-on training sessions. Dr med. Edis Wedi (University Hospital Geottingen) received the DGVS endoscopy research award and the award of the Olympus Europe foundation for 2018 for his work.

OTSC® System – presented studies confirm superiority of the OTSC in acute gastrointestinal haemorrhage

Marburg: OTSC highly effective for the treatment of acute ulcer bleeding
A Walldhater presented retrospective data gathered in the University Hospital of Giessen and Marburg evaluating different endoscopic modes of therapy for non-variceal upper gastro-intestinal bleeding (NV-UGIB). Between November 2016 and January 2017, 158 patients (median age 68 years, 117 male, 41 female, Blatchford score > 14), 77 male) with NV-UGIB were treated. In 68 patients, the bleeding required intervention at the time of examination. Cause of hemorrhage was a peptic ulcer in 47 cases (69.1%; 31 duodenum, 13 stomach, 1 cardi, 2 ischemia), variceal bleeding in 10 cases (14.9%; 8 esophageal, 2 gastric), and other causes in 11 cases (15.9%). Primary endoscopic therapy consisted of a combination approach using injections and hemoclipping (n=15), injections (n=10), hemoclipping (n=90), OTSC (n=12), thereof 8 for duodenal ulcer) and thermal coagulation (n=1). 9 of the 68 treated patients suffered from recurrent ulcer bleeding (6 from a duodenal ulcer, 2 from anastomosis, 1 patient with Mallory-Weiss syndrome), none of these had received OTSC as primary therapy (rebleeding rate primary OTSC vs primary other treatment 0% vs 8%; p=0.001). 4 of the 6 patients suffering rebleeding from duodenal ulcer were treated with OTSC. The two remaining patients received a combination therapy consisting of injection and hemoclipping, both patients developed a second rebleeding which in turn was treated using an OTSC Clip. The authors concluded that therapy of acute ulcer bleeding with the OTSC proves to be highly efficient as primary and secondary therapy. They enhanced the fact that none of the patients included in the present study, which received an OTSC, developed recurrent rebleeding. Advantages of OTSC treatment especially arose in the therapy of duodenal ulcer not only in cases of recurrent bleeding but also as primary therapy. OTSC Therapie der nicht varikösen obere gastrointestinalen Blutung – eine retrospektive Analyse (OTSC treatment of non-variceal upper gastrointestinal bleeding in hospital routine – a retrospective analysis).


Augsburg: closure of ulcer bleeding with high risk of recurrence: one and done in 75 %
S. Gölder et al., Department of Internal Medicine III, Klinikum Augsburg, Germany, presented a study evaluating the use of OTSC for the treatment of high-risk peptic ulcer bleeding (HRUB). Between 4/2014 and 3/2018, 100 patients with peptic ulcer bleeding (Forest a-Ib), in the stomach of the duodenum were treated with OTSC. The OTSC was used as first-line therapy in 68 patients. Successful primary hemostasis could be achieved in 89.4%. The OTSC was used as secondary treatment after failure of an initial endoscopic treatment in 34 patients. OTSC clipping led to successful primary hemostasis in 94.1%. Recurrent bleeding occurred in n=9 for primary OTSC (15.3%) and in n=7 patients with secondary OTSC (21.9%) (p=0.812). No treatment beside the single OTSC clip was necessary in 75.8% (n=50) in the primary-OTSC arm and in 73.5% (n=25) in the secondary-OTSC arm, respectively. OTSC was successful in closing ulcer in large ulcers (>3 cm, p=0.03), in the duodenal bulb (p=0.03) and in ulcers with negative helicobacter test (p=0.045). The patients with OTSC failure received more blood transfusions (p=0.002).
No statistical difference was found for the Rockall score (median 7.5, the Glasgow-Blatchford score (median 15.5), NSF score, coagulation.
The authors concluded that the OTSC has a high rate of bleeding control in first- and second line treatment of peptic ulcer bleeding. Potential risk factors for treatment failure are location in the duodenal bulb, longer ICU stay, higher amount of transfusions and a higher reimbursement per case.

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November 2018 | Conference Report DGVS / DGHIN

Over the Scope Clip (OTSC) bei Magen- und Duodenalulzera mit hohem Blutungsrisiko – One and done? (Over-the-Scope Clip (OTSC) for gastric and duodenal ulcers with high bleeding risk – one and done?)

Analysis of the STING treatment cases: haemorrhage treatment with OTSC in comparison to standard of care therapy not only costs but also achieve higher success rates. A Kümmerl et al. presented results of a study based on data gathered during a prospective randomized study (STING), exploring whether OTSC treatment is more cost-effective than conventional clips due to the higher success rate, the shortened hospital stay and potential cost savings for the overall treatment. The ACER for the overall costs was 30,721.58 € for standard therapy and 15,066.26 € for OTSC therapy. ACER for the endoscopic procedure showed 4,562.90 € and 2,311.52 € for standard and OTSC therapy respectively, concluding that OTSC therapy of recurrent ulcer bleeding was rated cost-effective and cost-cutting when compared to standard approaches.


Cross-sector routine data from social health insurance confirms safety and efficacy of colonic OTSC D Horenkamp-Sonntag et al., German Technicians’ Health Insurance, Hamburg, presented a study based on cross-sector routine data gathered by social health insurance carriers. OTSC was used for insured patients with peptic ulcer bleeding in the colon. Indication, patient characteristics, outcome and complications were assessed in the actual care setting. 348 patients (median age 67 years, 60% male) were subject to colonic OTSC (OPS-Code 546003). Using further codes from different performance segments, suspected indications were identified: (iatrogenic perforation (n=58), polypectomy (n=210), bleeding (n=34) and others (n=46). A total of 16 patients (4.6%) underwent an additional endoscopic intervention within 10 days of therapy. In 43 patients (12.4%) within 100 days of the initial procedure. 12 patients (3.4%) received abdominal surgery within 10 days after OTSC procedure, 41 patients (11.8%) within 100 days of the procedure. Surgery after more than 30 days after OTSC application was caused due to treatment of underlying disease (carcinoma, diverticulitis etc.). Overall 9 patients (2.6%) deceased within 100 days after the intervention. The authors concluded that, in the actual care setting, OTSC is most possibly used for polypeodermies and iatrogenic indications. The presented data supports first findings indicating that OTSC application in the colon is safe and helps to prevent surgery due to iatrogenic complications.

Sind OTSC-Clips am Kolon effektiv und sicher? Evidence-Generierung von endoskopischen Innovationsprodukten (Are OTSC-Clips in the colon effective and safe? Evidence generation of endoscopic innovations with health

OTSC® Hemostasis Update | Research and clinical trials | Version 5 | 2019-03-15
OTSC® Hemostasis Update 3

July 2018 | Large single center experience presented: Establishment of the OTSC® clip in daily endoscopic routine Honegger C and colleagues, Division of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland, presented data on 262 OTSC placements in a total of 233 interventions. Since 2009, the placement of OTSC has been established at the University Hospital Zurich for the entire spectrum of indications. OTSC has become a device of daily practice. A retrospective study now presents data of all patients treated with the OTSC device at the institution, focussing on indications, anatomic site of OTSC deployment, complications, and immediate and 30-day success rates.

Patient age ranged from 14 to 93 years with a median of 61 years. 51.5 % were male. Immediate success of OTSC treatment was observed in 87.1 % of all sessions (203/233). The success rates per indication were as follows: spontaneous bleeding 84.8 % (28/33); iatrogenic bleeding 100 % (20/20); acute perforation 90.3 % (65/72); prophylaxis for perforation 100 % (24/24); anastomotic leakage 61.1 % (11/18); fistulae 80.7 % (46/57); diameter reduction of the gastro-jejunal anastomosis 100 % (6/6); and stent fixation 100 % (3/3).

At 30-day follow-up, overall success rate was 67.4 % (157/233). The success rates per indication were as follows: spontaneous bleeding 69.7 % (23/33); iatrogenic bleeding 90 % (18/20); acute perforation 86.1 % (2/24); prophylaxis for perforation 100 % (24/24); anastomotic leakage 33.3 % (9/27); diameter reduction of the gastro-jejunal anastomosis 83.3 % (5/6); and stent fixation 66 % (2/3).

The authors concluded that the treatment with an OTSC is safe and feasible in clinical routine, with high immediate success rates with sustained clinical success at 30-day follow-up.


June 2018 | Breaking news: Ovesco OTSC® clip superior to standard hemostatic therapy in randomized-controlled trial OTSC has long been described in the scientific literature as a highly effective device for the treatment of upper GI hemorrhage. Now a randomized-controlled trial at 9 academic referral centers (in Germany, Switzerland, and Hong Kong) has proven OTSC to be superior to standard methods. The trial, published by Dr. Arthur Schmidt, Ludwigshafen, Germany, enrolled 66 patients with acute upper endoscopic bleeding with overt hemostasis at the time of the initial examination. The trial compared current standard OTSC therapy or standard techniques (a combination of 2 methods from through the scope clipping, injection or electrical coagulation).

Persistent bleeding after per-protocol hemostasis was observed in 42.4 % of patients in the standard therapy group and 6.0 % in the OTSC group (P=0.001). Further bleeding occurred in 57.6 % in the standard therapy group and 15.2 % in the OTSC group (absolute difference, 42.4 %; 95 % CI 21.6-63.2; P=0.001).


Over the Scope Clips are More Effective Than Standard Endoscopic Therapy for Patients With Recurrent Bleeding of Peptic Ulcers


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Department of Medicine II, Medical Center, Faculty of Medicine, University of Freiburg, Germany; Berta-Clara-Stiftung, Programme, Faculty of Medicine, University of Freiburg.

Department of Gastroenterology, Klinikum Ludwigshafen, Ludwigshafen, Germany.

April 2018 | 100 % hemostasis with OTSC® reported for first-line emergency treatment of acute hemorrhage The 48th Conference of the German Society for Endoscopy and Imaging Procedures (Deutsche Gesellschaft für Endoskopie und Bildgebende Verfahren, DGE-BV) took place on March 15-17, 2018 in Munich, Germany. Dr. A. Braun, SRF Langenthal, Switzerland, presented personal data on OTSC application for emergency treatment of acute hemorrhage. Between 2011 and 2017, 48 patients (female, median age 75.5 years (61-92)) each received one OTSC clip for first-line treatment of acute gastrointestinal hemorrhage. All patients had shown acute hemoglobin decrease and secure bleeding signs such as hematemesis, melena or hematochezia. Bleeding was located in the upper GI tract in 34 cases (4 Forrest la, 15 Forrest lb, and 5 Forrest iiia) and in the lower GI tract in 4 cases (4 Forrest la, 7 Forrest lb and 3 Forrest iiia). Patients with upper GI bleeding received endo-interventional PPI medication (60mg iv bolus, 320 mg i.v. / 24 h). For placement of the OTSC in some cases an endoscopic forceps was used to grasp tissue. No further local therapies were applied. All OTSC applications were performed by one single endoscopist. The application of primary and primary hemostasis were successful in all cases. Maximal procedure time was 20 minutes. No relapse hemorrhage occurred. 26 patients (15 F la, 9 F lb) received follow-up endoscopy on day 1 to 4, which showed the clip in situ and no bleeding stigmata. 22 patients received no follow-up examination. The clinical course was uneventful in all cases. The authors conclude that OTSC application for emergency endoscopic treatment of acute hemorrhage is safe and very effective. Primary hemostasis is achieved in all patients. Further investigation of patients, which makes reduction of the mortality rate of acute gastrointestinal hemorrhage possible. OTSC application is related to short procedural time.
Endoscopische Behandlung von akuten Blutungen mit einem over-the-scope clip (OTSC)

Braun A (2018)

March 2018 | One step application of OTSC® for salvage hemorrhage and simultaneous perforation closure

El Douaihy Y et al., Department of Internal Medicine, Staten Island University Hospital - Northwell Health System, Staten Island, New York, USA; reported on a case of active bleeding from a gastroduodenal artery pseudoaneurysm and simultaneous perforation, which was treated by deployment of a single OTSC-Clip.

The 61-year-old male patient with history of duodenal ulcer and angiographic embolization of a gastroduodenal artery pseudoaneurysm 6 months before presented to the emergency room for bright red blood per rectum with signs of upper GI bleed. In esophagogastroduodenoscopy two vessels were identified at the base of an ischemic ulcer correlating with the previous location. The endoscopist at the time elected to inject epinephrine and apply electrocautery which resulted in an arterial pulsatile bleed and a perforation. The field of vision was extremely compromised in addition to the difficult location. Mounting of a clip in the gastroscope to improve stability of the scope and applying point pressure to decrease bleeding, as well as vigorous water irrigation permitted the identification of the exact bleeding site. Then, an OTSC was deployed in a single attempt which resulted in immediate adequate hemostasis and closure of the perforation.

The authors emphasize that deployment of the OTSC requires pin-point precision to achieve satisfactory hemostasis. They rate the use of the over-the-scope-clip simple yet very effective. The device was not only a rescue tool for hemorrhage from a recurrent actively bleeding GDA pseudoaneurysm, but also for simultaneous perforation closure.

The video can be viewed directly from the GIE website or by using the QR code below.

Over-the-scope clip to the rescue of a bleeding gastroduodenal artery pseudoaneurysm


OTSC® Hemostasis Update 2

February 2018 | OTSC® prevents rebleeding in over 70 % of high-risk GI bleeding cases

J Brandler and colleagues, Department of Internal Medicine, Mayo Clinic, Rochester, Minnesota, USA, performed a study on 67 patients with gastrointestinal bleeding from high-risk lesions who were treated with the OTSC System.

The definition of high-risk lesions was situated in the area of a major artery and larger than 2 mm in diameter and/or a deep penetrating, excavated fibrinotic ulcer with high-risk stigmata, in which perforation could not be ruled out or thermal therapy would cause perforation, or lesions that could not be treated by standard endoscopy (epinephrine injections, hemoclips, coagulation). Between 12/2011 and 02/2015, data from 67 patients with high risk non-variceal gastrointestinal bleeding, of which 49 required emergency surgery and 18 as rescue therapy was prospectively collected and retrospectively analysed. Clinical severity was determined based on the Rockall score and a modified Blatchford score.

Out of 67 patients, 47 (70.1 %) remained free of rebleeding at time of discharge. No difference was found in the proportion of patients with rebleeding who received primary or rescue therapy (hazard ratio: 639; 95 % CI: 0.844 – 4.860; P=0.6635). Only 9 rebleeding events were linked clearly to OTSCs and required intervention, indicating an OTSC success rate of 81.3 %.

The authors concluded that OTSCs have a valuable role in managing and adverting high-risk radiologic or surgical interventions for non-variceal gastrointestinal bleeding, despite the presence of high risk of adverse outcome and severe prognostic scores.

Efficacy of Over-the-Scope Clips in Management of High-Risk Gastrointestinal Bleeding


November 2017 | 96 % hemostasis with OTSC® as first-line treatment in patients with gastrointestinal bleeding: an Italian multicentric study comprising 201 consecutive patients

Mangiafico S et al., Azienda Ospedaliero, University of Modena, Italy, presented at the 25th UEG week (October 28 – November 1, 2017, Barcelona) data from 9 Italian tertiary referral centers comprising a large series of patients with non-variceal upper and lower gastrointestinal bleeding lesions in whom OTSC was used as first-line endoscopic treatment.

Over a period of three years (01/2014 - 01/2017), data on 201 consecutive patients (mean age 68 years, range 28-90 years), with a mean emergency for severe acute nonvariceal gastrointestinal bleeding and were treated with OTSC as primary first-line therapy, was prospectively collected and analyzed.

100/201 patients were treated with the a version of the OTSC system while in 95/201 patients the 1 clip was preferred. Indications for OTSC treatment included duodenal-jejunal ulcer Forrest 1a (n=29) and Forrest 1 b (n=25), gastric ulcer Forrest 1a (n=19) and Forrest 1b (n=28), Mallory Weiss (n=18), Dieulafoy’s lesion (n=9), post-gast- ESO bleeding (n=14), post EMR bleeding (n=18), post EBD bleeding (n=12), traumatic rectal ulcer (n=2), colonic diverticulum (n=4), and surgical anastomosis bleeding (n=15).

Technical success was achieved in all cases (100%). Primary hemostasis was achieved in 193/201 patients (96%). In the remaining 8 patients hemostasis was obtained with radiological vascular embolization (n=5) or surgery (n=3). Early rebleeding (within the first 24 hours) occurred in 9/201 patients (4 %) and it was treated with epinephrine injection which was the use of through-the-scope clips or radiological vascular embolization. No late rebleeding was observed in the series.

The authors concluded that the use of OTSC as first-line therapy in acute high-risk gastrointestinal bleeding is safe and highly efficacious.

High efficacy of OTSC as first-line endoscopic treatment in patients with gastrointestinal bleeding: an italian multicentric experience in a large cohort of patients.


November 2017 | Recommendation for OTSC® as first-line therapy in non-variceal upper gastrointestinal bleeding

Chen SM, Lau JYW (2016)

Azienda Ospedaliero, University of Hong Kong, Hong Kong, published an article on VideoGIE, the official video journal of the American Society of Gastrointestinal Endoscopy, showing OTSC treatment in two patients with refractory peptic ulcer bleeding.

The first patient was an 89-year-old woman admitted with fresh hematemesis and a haemoglobin of 4.8 g/dl. Endoscopy revealed bleeding from a 2-cm chronic bulbar ulcer. She was treated by angiographic embolization to her right gastroduodenal artery (GDA). Three days later, she again experienced massive bleeding. A pulsatile vessel at the ulcer base was discovered and treated with an OTSC clip induced. The cap was adjusted to encompass the vessel, and a trip string was pulled to deploy the OTSC. The patient was discharged 4 days later without further bleeding.

Patient two was a 76 year old man presenting with fresh melena and a haemoglobin of 7.5 g/dl. He reported on a history of recurrent bleeding from a chronic gastric ulcer. Additionally, he had previously been on warfarin therapy for the treatment of deep vein thrombosis complicated by pulmonary embolism. Endoscopy revealed bleeding from a chronic ulcer at the antrum incisura of the stomach. The first attempt to stop the bleeding with heaterprobe and hemoclips failed. Then an OTSC anchor device was used to target the ulcer base and deploy an OTSC clip without complete hemostasis achieved and the patient had an uneventful recovery.

The authors concluded that OTSC is useful in the treatment of chronic peptic ulcers with refractory bleeding. The anchor device was rated a helpful tool, allowing accurate targeting of the bleeding artery.

Over-the-scope clip treatment of a bleeding peptic ulcer bleeding

Cheng X, Lau JYW (2016)

Endoscopic International Open 2017; 05: E883-E885

July 2017 | Video case report: OTSC® hemostasis in patients with refractory bleeding due to chronic peptic ulcer

Xiao X and Lau JY, Department of Surgery, Chinese University of Hong Kong, Hong Kong, published an article on VideoGIE, the official video journal of the American Society of Gastrointestinal Endoscopy, showing OTSC treatment in two patients with refractory peptic ulcer bleeding.

The first patient had an uneventful recovery.

The second patient had an uneventful recovery.

Can we now recommend OTSC as first-line therapy in cases of non-variceal upper gastrointestinal bleeding?}

Chan SM, Lau JYW

Endoscopy International Open 2017; 05: E883-E885

July 2017 | Video case report: OTSC® hemostasis in patients with refractory bleeding due to chronic peptic ulcer

Xiao X and Lau JY, Department of Surgery, Chinese University of Hong Kong, Hong Kong, published an article on VideoGIE, the official video journal of the American Society of Gastrointestinal Endoscopy, showing OTSC treatment in two patients with refractory peptic ulcer bleeding.

The first patient had an uneventful recovery.

The second patient had an uneventful recovery.
June 2017 | 80% success in endoscopic closure of post-surgical gastrointestinal leaks

R Manta et al., Niguarda Ca Granda Hospital, Milan, Nuovo Regina Margherita Hospital, Rome, Baggiogava Hospital Modena and Federico II University of Naples, Naples, all Italy, published a large case series on patients with post-surgical gastrointestinal leaks managed with endoscopy as its first approach. A total of 76 patients underwent endoscopic treatment for a leak either in the upper (47 cases) or lower (29 cases) gastrointestinal tract. The first attempt for leak closure was the application of one or more OTSC clips. Fibrin glue was used as an adjuvant treatment to close the gap between two OTSCs where needed. A covered self-expanding metal-stent (SEMS) was applied when the closure was considered incomplete at endoscopy. When dehiscence characteristics were not fitting for OTSC positioning, a SEMS was directly used. Endosponge was the first line therapy, when an absence cavity was present beyond the anastomotic leak. Leak closure was successful in 39 patients with upper GI leaks (83 %) and 22 patients with lower GI leaks (75.9 %), accounting for an overall 80.3 % success rate. Leak closure failed in 17 (36.7 %) patients, and the surgical approach was successful in all 14 patients who underwent re-intervention, whilst one patient died due to sepsis at day 7 post-op. The authors conclude that an endoscopic approach is successful and safe in the majority of patients with anastomotic gastrointestinal leaks. Therefore, endoscopic treatment should be attempted before resorting to more invasive, costly and risky re-interventions.

Endoscopic management of patients with post-surgical leaks involving the gastrointestinal tract: A large case series.


OTSC® Hemostasis Update 1 | Research & clinical trials

March 2017 | High-risk GI bleeding: primary hemostasis in first-line OTSC® treatment in 95 %

HJ Richter-Schrag and colleagues, Center of Interdisciplinary Gastrointestinal Endoscopy and Department of General and Visceral Surgery, University of Freiburg, Germany, performed a retrospective study evaluating the role of OTSC hemostasis, primary failure and mortality of patients, in whom OTSCs were used as first-line and second-line endoscopic treatment (FLET, SLET) of upper and lower gastrointestinal bleeding (GIB). All patients with severe upper and lower GIB who underwent FLET or SLET with OTSCs between 04/2012 and 05/2016 were included. In addition, patients with upper GI bleeding were categorized by complete Rockall risk score, and the data were used to calculate predictors of OTSC success or mortality. A total of 93 patients (56 males, median age 72, range 19-98) with altogether 100 severe acute GIB lesions fulfilled the inclusion criteria. One patient had 3 OTSC applications, and five other patients had 2 OTSCs on different lesions. First-line OTSC treatment was performed in 61 cases and second-line OTSC treatment in 42 cases. The mean hospital stay was 19.8 days (range 1-78). Primary hemostasis was achieved in 88 % of cases (88/100). Clinical success (no in-hospital rebleeding) was achieved in 78 % of cases (78/100). Primary failure was significantly lower when OTSCs were applied as FLET compared to SLET (9.4 % vs 23 %, P=0.008). Patients with Rockall scores ≥ 7 had a significantly higher in-hospital mortality compared to those with scores <7 (35 % vs 10 %, P=0.034). No significant differences were observed in patients with scores < or ≥ 7 in rebleeding and rebleeding-associated mortality. The authors concluded that the reduction of primary failure in endoscopic treatment of severe acute gastrointestinal bleeding was best achieved when OTSC was used for first line treatment. In this series, first-line OTSC treatment seemed to be a predictor of successful reduction of rebleeding rates. First-line endoscopic treatment with over-the-scope clips significantly improves the primary failure and rebleeding rates in high-risk gastrointestinal bleeding: A single-center experience with 100 cases


November 2016 | Large single-center experience with 101 OTSC® applications in patients with severe hemorrhage, perforations and fistulae: 89% overall primary clinical success

Wedi E and colleagues, Strasbourg University Hospitals, Strasbourg, France and St. Bernward Academic Teaching Hospital, Hildesheim, Germany, and School of Medicine at Mount Sinai, New York, United States, and Boston Children’s Hospital, Boston, United States, conducted a retrospective study to investigate efficacy and clinical outcome of patients treated with an OTSC clip for gastrointestinal (GI) emergencies and complications. From 02/2009 to 10/2012, 84 patients were treated with 101 OTSC clips. 41 patients (48.8 %) presented with severe upper-GI bleeding, 3 (3.6 %) patients with lower-GI bleeding, 7 patients (8.3 %) underwent perforation closure, 18 patients (21.4 %) had a history of previous perforation, 12 post-ESD (4.3 %) had complications of secondarily bleeding after endoscopic mucosal resection or endoscopic submucosal dissection (ESD) and 3 patients (3.6 %) had an intervention on a chronic fistula. In 78/84 patients (92.8 %), primary treatment with the OTSC was technically successful. Clinical primary success was achieved in 75/84 patients (89.8 %). In detail OTSC application lead to a clinical success in 35/41 (85.3 %) patients with upper GI bleeding and in 3/3 patients with lower GI bleeding. Technical success of perforation closure was 94/94 (100 %) if the lesion was not too large. In patients with large defects and already infection accompanying the leak, cSEMS placement might be preferred. Indication for ‘Over the Scope’ (OTSC)-Clip vs. Covered Self-Expanding Metal Stent (cSEMS) is Unequal in Endoscopic Gastrointestinal Bleeding: Results from a Retrospective Head-to-Head Comparison.


February 2016 | OTSC® as successful last resort before surgery for challenging bleeding lesions

Endoscopyca, the official blog of “GIE: Gastrointestinal Endoscopy” recently published a video on OTSC use by Dr. James Y. W. Lau. The video, called “Over-the-scope clip treatment of refractory peptic ulcer bleeding”, presented two cases in which OTSC was used to treat chronic peptic ulcerations with refractory bleeding after failed angiographic embolization and endoscopic treatment respectively.

The authors concluded that, “Endoscopists should consider the use of OTSC when tackling challenging bleeding lesions especially when other standard treatments have failed and certainly before referring your patients to surgery.”

February 2016 | Use of Over-The-Scope Clip for treatment of refractory upper gastrointestinal bleeding: high technical and clinical success rates reported

Chan SM, Chiu PWY, Tech YB and Lau JYWW from the Department of Surgery, Institute of Digestive Disease, Prince of Wales Hospital, Chinese University of Hong Kong, China, reported about a prospective case series to evaluate the safety and efficacy of the Over-The-Scope Clip, developed to address refractory GI bleeding.

The case series included nine patients (4 men, 5 women) with a median age of 72.5 years (range 39 - 91 years), suffering from bleeding gastric ulcers (n=2), bleeding duodenal ulcers (n=5), bleeding gastrointestinal ulcer in the stomach (n=1), and bleeding from ulcerative carinoma of the pancreas (n=1). Median diameter of the ulcers was 2.5 cm (1-4.6 cm). Six of the nine patients underwent previous endoscopic hemostasis attempts.

A total of 10 OTSCs were applied in the nine patients. The technical success rate of OTSC was 100 % (10/10). Endoscopic hemostasis was achieved in all patients. No local complications occurred. The clinical effectiveness was 77.8 % (7/9), while two patients with specific complications developed related to OTSC application due to chronically fibrinous ulcers because of residual tumor infiltration and previous radiotherapy.

Chan and colleagues discuss that in 8/10 patients, the bleeding was located in difficult positions, where application of conventional clips would have been
complicated as the endoscope approach to the ulcer would have been at a steep angle. The OTSCs allowed a larger amount of tissue to be captured for compression compared to common clips while avoiding the possibility of thermal injury with its high risk of perforation, as can happen with thermal coagulative methods. As a consequence of the intrinsic hemostatic properties that have been developed, the authors recommend considering the OTSC System in refractory gastrointestinal bleeding before conventional clips, surgery, or angiographic embolization.


January 2016 | OTSC® as successful treatment of massively bleeding jejunal varix, which had resisted previous interventions.
S. Kothari, T. Kothari and V. Kaul of the Center for Advanced Therapeutic Endoscopy, Division of Gastroenterology and Hepatology at the University of Rochester/Strong Memorial Hospital in Rochester, NY, USA presented a case of successful treatment of massive gastrointestinal bleeding from an unknown cause after several other treatment options had failed. The 67-year old male patient had a medical history of coronary artery disease, chronic renal insufficiency and Laennec’s cirrhosis before he was admitted for a laparoscopic left radical nephrectomy for renal mass. He developed several complications, including superior mesenteric vein thrombosis, melena with a significant drop in hematocrit and clinical signs of bleeding, which led to identification and unsuccessful treatment of several possible bleeding sites. The patient underwent anticoagulation, a tagged red blood cell scan, angiography, coil-embolization, repeat mesenteric angiography and repeat (push) enteroscopy. The patient also received a total of 38 units of packed red cells, 13 units of thawed plasma, 9 units of fresh frozen plasma, 3 units of platelets and 2 units of cryoprecipitate. Due to multiple comorbidities, he was deemed as a high-risk patient unfit for surgery. Finally, a tortuous, varix-like, prominent blood vessel with a small central ulceration, bleeding actively, was identified in the proximal jejunum. Ethanolamine injection into the varix did not achieve hemostasis. Finally, a size 16 OTSC was applied over the actively bleeding jejunal varix using a pediatric colonoscope. Instant and complete hemostasis was achieved with this single clip. No additional transmural injections were required to ensure hemostasis over the next few days. Due to the overall general condition and multiple comorbidities, the patient’s family opted for ‘comfort measures only’ and he passed away several days later. The authors emphasize that the fact that they were able to quickly and effectively treat a massively bleeding jejunal varix, which had resisted multiple evaluations and courses of treatment. They deem the OTSC device a major advance in endoscopic management of high-risk patients in a variety of challenging clinical settings, especially in case of poor candidates for surgical intervention. They also note that endoscopic perforation management with the OTSC clip may avoid the cost and morbidity of surgery and other interventions. Statement by Ovesco Endoscopy: the OTSC System provides tissue apposition far superior to traditional clipping and can function as a “rescue therapy” in patients with severe non-variceal upper gastrointestinal bleeding in whom prior endo-scopic therapies have failed, avoiding more invasive procedures such as embolization or surgery. They point out that the OTSC System appears promising for the treatment of bleeding lesions with large-diameter visible vessels or those located in awkward positions, such as the greater curvature of the stomach or the posterior duodenal wall, which may not always be amenable to treatment with standard endo-scopes and endoscopic devices.

*Any bleeding occurring more than 72 hours after therapy is usually regarded as a new incident.

Over-the-scope clip placement is effective rescue therapy for severe acute upper gastrointestinal bleeding

March 2015 | JFHJ Congress, France: OTSC® in hemostasis – high success rate in 34 evaluated patients.
E. Wedi, Dept. Of Gastroenterology and Digestive Endoscopy, University Hospital, Strasbourg, France summarized cases admitted to emergency care due to severe GI bleeding. All patients had Hb <7g/dl upon admission. Median age 73 yrs (29–97), 80 % were under concomitant anti-coagulation or antiplatelet therapy. In 87.2 % (48/55) bleeding was from a gastroduodenal peptic ulcer, and the remaining from various other causes. OTSCs were placed. The overall clinical success rate without recurrence was 83.6 % (46/55). In 32.7 % OTSC was placed as a salvage treatment due to prior ineffectiveness of other techniques. 12.7 % (7/56) had to undergo surgical treatment. Out of these 7 patients 4 died, giving a total mortality rate of 7.2 % in this highly challenging group of patients. The report by Wedi et al. underlines that patients with a high Rockall score can profit from OTSC treatment, especially patients with anticoagulative or antiplatelet therapy.

July 2014 | Retrospective study confirms safety and effectiveness of OTSC® in the endoscopic treatment of GI bleeding, perforation and fistula formation.
Dr. Vijay Jayaraman and colleagues, Cedars Sinai Medical Center, Los Angeles, recently presented a retrospective study on their experience with the OTSC System in the treatment of GI bleeding, fistula and perforation. Their case series consisted of 24 consecutive patients treated between January 2011 and April 2014 (average 9.7 years) included the following indications for OTSC placement (28 clips): postural enterocutaneous fistula (n=10), spontaneous perforation (n=1), anastomotic leak (n=4), perforation after mucosal resection (n=3), prophylactic closure after EMR (n=2), postendoscopy bleeding (n=2), postendoscopic perforation (n=2), tracheoesophageal fistula (n=1) and leakage from a percutaneous jejunostomy site (n=1). Instruments or modalities used to grasp the tissue were standard endoscopy scopes (Ovesco Endoscopy Anchor) in 16 and nondenuded devices (rat gutter/liver forceps or suction alone) in 15. Median follow-up time was 2.9 months; mean defect size

OTSC® Hemostasis Update | Research & clinical trials

OTSC® Hemostasis Update | Research & clinical trials | Version 5 | 2019-03-15
June 2014 | Three case reports on surgery-sparing uses of the OTSC® clip in multiple indications

Three case reports recently published by Dr. V. Gómez et al., Dept. of Gastroenterology and Hepatology, Mayo Clinic, Jacksonville, USA, Dr. S. Singhal et al., Div. of Gastroenterology, The Brooklyn Hospital Center, New York, USA and Dr. J. Albert, Center of Internal Medicine, Johann Wolfgang Goethe University Hospital, Frankfurt, Germany illustrate the broad spectrum of indications for which placement of OTSC clips can be useful.

The first case describes the use of the OTSC® System in the management of a Dieulafoy lesion. A 74-year-old male with a current history of hypertension and threatening gastrointestinal bleeding, EGD revealed a non-bleeding Dieulafoy lesion at the lesser gastric curvature. Due to the large size and difficult position of the lesion, conventional through-the-scope clips were not possible. OTSC was successfully deployed. Novel treatment of a gastric Dieulafoy lesion with an over-the-scope clip Gómez V, Kyanam Kabir Baig KR, Luikens FJ, Woodward T Endoscopy. 2013;45 Suppl 2 UCTN:E71.

April 2014 | Conference report | 44° DGE-BV Congress, Hamburg

The 44th DGE-BV 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., Mais J., Kraus F.). Ovesco presented their new products, the DC Clip Cutter and the FTDR device which are both due to be launched later this year. The reaction of the medical world was more than promising.

• New Clips for Blunting and Verschlussstechniken Caca K, Ludwigsburg, 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 his take home message was: “the OTSC device achieves hemostasis more quickly than all other devices and is more effective, particularly regarding active, diffuse and heavy bleedings.” For the treatment of perforation OTSC was the standard choice. Also, he showed first experiences with the new 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 Hähner M, Vienna, Austria

M. Hähner 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.


• Card-Kurasseilli Grotto S, Hamburg, Germany

Grotto elaborated on the endoscopist’s option once it comes to use clips. Interesting enough he commented that OTSC from the rest of all products stating that OTSC is playing in a different league. (Comment by Ovesco: the comparator of OTSC is surgery!)

Altogether five posters were dealing with OTSC:

Over-the-Scope Clip System (OTSC) – One Therapy for Safety Closure Leonhardt K, Ohse A, Bauer B, Repp M, Altenburg, Germany report their 3.5-year experience with our system regarding the three major indications: hemorrhage, acute perforation, and chronic fistula/aneastomotic leakage where they achieved a success rate of 96.5% success rate, 33 patients were included in this retrospective analysis. Average age was 69 years (41–92) yrs. Three patients received two clips at once. Across the GI tract the number of patients was equally distributed, except for Jejunum and Ileum within our department. The authors conclude that OTSC is a useful and effective tool for the endoscopist sparing the surgeon in many cases.

Endoscopic treatment of acute bleedings with an Over-The-Scope Clip (OTSC) A, Braun et al. investigated the role of OTSC in the treatment of acute GI hemorrhage in an emergency. Between 2011 and 2013 they treated 16 patients (median 75.5 y/o (61-92), n=9, f=7) with OTSC for upper and lower GI bleeding (8 each). Patients with upper-GI bleeding received high PPI-medication simultaneously. 7 patients were classified F1, F 7, F 2 and F 2ilia. All patients were presented with a large amount of bleeding, with hematemesis, melena, and hematochezia. The clip was applied by using a standard forceps. Technical success was achieved in all 16 patients (100 %) with immediate primary hemostasis. None of the interventions took longer than 20 minutes. Only 6 patients underwent further endoscopy between day 1 and 7 after clip application. All control endoscopies were uneventful and showed clinical success. 9 patients did not need any further endoscopy. None of the patients needed any further therapy for bleeding. All patients survived the initial intake from day 2. The authors conclude that OTSC is safe and effective for the treatment of hemorrhage which reduces mortality, with short intervention times.

Endoskopische Behandlung von akuten Blutungen mit einem Over-The-ScopeClip (OTSC) Braun A, Richter-SchragHU, Fischer A, Freiburg, Germany

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 is more difficult to manage and to avoid using other procedures and analyzed 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 gastrojejunostomy. The authors conclude that OTSC is easy to use with good results, decreased morbidity and mortality associated with complications secondary to both diagnostic and therapeutic endoscopy and avoiding surgery in many situations.


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, fistulas) the authors of the renowned Institute of Digestive Disease, Department of Surgery, Chinese University of Hong Kong are reporting of patients in whom OTSC was used for endoscopic closure of refractory or major upper gastrointestinal bleeding. From lesions in the gastroduodenal tract between 1 July and 31 December 2012. Nine patients were included (median age 72.5 years, range 39–91) 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 cholangiocarcinoma. After several additional EGDs, transarterial embolization, and one surgical intervention which all failed to stop the bleeding, the patient died due to the bleeding.

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 rebleeding rate in these 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 protective 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 is being associated with a higher risk of perforation. Whereas the application of OTSC allows for larger amounts of tissue and constitutes a quite durable treatment (OTSC in situ after a median of 28 days in this study). The authors conclude that the use of OTSC is a safe and efficacious method of treating refractory major bleeding from miscellaneous upper gastrointestinal causes and should be considered in refractory bleeding after conventional endoscopic hemostasis, before surgery or angiographic embolization.

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: NCT01183130.

Use of Over-The-Scope Clip for treatment of refractory upper gastrointestinal bleeding: a case series Chan SM, Chiu PW, Teoh AY, Lau JY
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 %

Endoscopy. 2014 Feb 6. [Epub ahead of print] 162

October 2013 | Efficacious OTSC® hemostasis in Dieulafoy’s gastric lesion resistant to conventional endoscopic treatment

Dr. B. Mangiavillano and colleagues, Gautengstern 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 the 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


October 2013 | OTSC® successful in providing hemostasis in posterior duodenal ulcer bleeding after failure of conventional clips

Ulcer bleeding is one of the key indications for the OTSC® System. In a recently published case series (n=4), Prof. Klaus Mönkemüller and colleagues, Dept. of Internal Medicine, Gastroenterology and Infectious Diseases, Marienhospital Bottrop, Germany add to the growing clinical experience in using the OTSC® System to control massive gastrointestinal bleedings and achieve life-saving hemostasis. All four patients (mean age 84.5 years) presented with hypotension and mean hemoglobin of 9 g/dL. After initial fluid resuscitation and treatment with activated procoagulants, an initial therapy with injection of epinephrine-saline solution and standard clip placement failed and all patients suffered from rebounding, the decision to apply the OTSC® System was made. Hemostasis was attained successfully and all patients discharged in stable conditions. Even in difficult and challenging situations, 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 Ossevo: In a recently published series of 83 patients with severe acute 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® (Kratz T et al., Poster DGE-BV meeting, Munich 3/2013)

New endoscopic hemostasis methods

Leung K, EL, Lau JY Clin Endosc. 2012 Sep;45(9):224-9 [Epub Aug 22 87

November 2013 | OTSC® in endoscopic treatment of acute GI bleeding after failure of conventional techniques: primary hemostasis 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 Nishiyama and colleagues, Dept. of Gastroenterology and Neurology, Kagawa University, Japan present their retrospective study on the 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) included the following indications for OTSC placement: stopping GI bleeding (n=9), closing perforation (n=10), closing chronic GI fistula (n=4) and prevention of post-endoscopic submucosal dissection (ESD) duodenal artificial 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=2). In 8 patients other therapies preceded deployment of the OTSC System (e.g. conventional hemostatic clips, local injections, hemostatic coagulation forces). 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 (a large flaccid lesion with overall clinical success rate (complete closure by use of 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.

Efficacy and safety of over-the-scope clip: including complications after endoscopic submucosal dissection

In an overview article the authors are referring to the endoscopic treatment of Dieulafoy’s bleeding Dieulafoy’s lesion resistant to conventional endoscopic treatment


October 2013 | OTSC® Hemostasis Update 5 | Research & clinical trials

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


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 more 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.

April 2013 | Conference report | OTSC® at German Endoscopy Conference (DGE-BV 2013 in Munich)

OTSC was well-covered in the scientific programme of this year’s German Endoscopy Conference in Munich. Clinical presentations confirm efficacy of OTSC clipping in a range of indications

Munich, March 14–16, 2013. The 43rd German Endoscopy Congress, DGE-BV, was held under the presidency of Prof. Dr. Christoph Dietrich. A significant number of presentations had clinical data of OTSC clipping as their topic and confirmed clinical efficacy and safety in the primary indications of the product, hemostasis, closure of acute lesions/perforations and closure of chronic lesions (source: www.dge-bv.de).

Large single center OTSC cohort with hemostatic and organ wall closure indications

Weid E, Menke D, and Hochberger J, Strasbourg (France) reported about a cohort of 84 patients with OTSC clipping for GI bleeding, fistula and GI wall insufficiency. 101 OTSC clips have been used in this cohort, or 1.2 clips per patient. Indications included mainly severe upper GI peptic ulcer hemorrhage (n=38) and preventive clipping to avoid rebleding (n=12) or secondary perforation (n=18) after large area ESD. The clinical success rate in peptic ulcer bleeding was 78 %, most patients had already been treated unsuccessfully with other hemostatic techniques before OTSC clipping or had been candidates for surgical hemostasis.

2 complications were encountered: 1 inadvertent clipping of an instrument with OTSC and fixation of the instrument to the wall with one perforation on the OTSC cap. The authors state that OTSC application is an effective procedure to deal with endoscopic situations that otherwise would require a surgical approach.

Der Einsatz des OTSC®-Krokodils bei 84 Patienten mit GI-Blutung, Fisteln und Insuffizienzen – ein Ressumé

E. Weid, D. Menke, and J. Hochberger, Strasbourg

Large single center cohort on OTSC hemostasis in severe GI bleeding

Kratz T, Stüker D, Gräpler F, Küper M, Wichmann D, Königsrainer A, Tübingen, showed data from their cohort on OTSC® in endoscopic hemostasis (n=88). The bleeding location was in the upper GI tract in 63 % (21 % peptic gastric ulcers and 40 % peptic duodenal ulcers) and in the lower GI tract in 37 % (mostly bleeding after polypectomy in the rectum).

The characteristics of the cohort underline the severity of bleeding: life-threatening bleeding (28.4 %), patient in hemorrhagic shock (31.1 %), immediate blood transfusion (33.8 %), patient under anti-coagulation (21.6 %), Forrest I bleeding (72.3 %). OTSC placement was achieved with 2 clips in 72 cases and with an OTSC Anchor in 2 cases. Technically successful hemostasis for 72 hrs was achieved in 92.3 % of cases, a persistent bleeding and an early relapse bleeding (<72 hrs) were seen in 3.6 %, respectively. Late relapse bleeding (<72 hrs) was observed in 1.5 % of cases. No severe complications were observed; in 3 cases mucosal esophageal lesions from device introduction were seen. In 14.5 % OTSC clipping was done for recurrence of an initially successful other endoscopic therapy and in 13.3 % for failure of other methods in the same treatment session. In 35.1 % OTSC clipping was seen as an ultimate ratio and as an alternative to surgical
therapy otherwise becoming necessary. The summary of the authors is that the simple and easy to handle OTSC System is an effective treatment in severe GI bleeding and can avoid surgery in several cases.

**Das OTSC-Clip-System: Klinische Erfahrungen zur Therapie der schweren GI-Blutung bei 85 Patienten**

T. Kratt et al., Tübingen

Consecutive case series of OTSC application in the endoscopic management of complications of emergencies Thomsen T, Berthold B, Khiabanchian M, and Trabandt I, Neubrandenburg, presented data of a case series (n=11). Indications included upper and lower GI bleeding, PEG-fistula closure, rectal-pelvic fistula closure, sigmoid anastomosis leak, bleeding from diverticulum (Hartmann situation), arterial bleeding from colon anastomosis. The overall clinical success rate in the mixed case series was 82 %. The procedure took more than 30 min. As complications 1 fistula recurrence (required second OTSC procedure), 1 rebleeding and 1 remaining perforation were seen. The authors summarize that OTSC clipping is a fast procedure with a high primary success rate and is quick to learn.

**Endoskopische Interventionen mit dem OTSC-System am Klinikum Neubrandenburg**

T. Thomsen, B. Berthold, M. Khiabanchian, and I. Trabandt, Neubrandenburg

OTSC for stopping gastroduodenal artery bleeding in duodenal ulcer

Kraft T, Stüker D, Kirschnäki A, Heininger A, Wietek B, Königsrainer A, Tübingen, showed a case series (n=7) in which OTSC was applied in upper GI emergency hemostasis to stop bleeding from the gastroduodenal artery. Gastroduodenal artery bleeding is besides iatrogenic fistula considered the most severe bleeding complication in the digestive tract, associated with high morbidity and mortality. In many cases surgical emergency hemostasis is inevitable. In all cases reported here the gastroduodenal artery was verified as the bleeding source by angiography after OTSC placement of OTSC was quick and easy resulting in effective and is a welcome addition to the therapeutic armamentarium in the closure of leaks, fistula, perforations and non-variceal 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, Imani S, Kozarek RA

Gastrointest Endosc. 2012 Jul;76(1):202-8

**October 2012 | 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, Zablonski M, Mönkemüller K

Gastrointest Endosc. 2012 Oct;76(4):917-8

**February 2013 | Retrospective multicentric review of early OTSC® patients in the US: overall clinical success rate of 71 %**

Dr. Todd H. Baron and colleagues, Division of Gastroenterology & 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 follow-up time in this mixed cohort was 77 days (30–330 days). Indication break-down included hemostasis (n=7), closure of chronic fistula (n=28), closure of iatrogenic perforations (n=3), 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-variceal bleeding.