# Conference Report

**49th Conference of the German Society for Endoscopy and Imaging Procedures (DGE-BV)**
Together with the learned societies of **CAES, CATC, DEGEA, DEGUM, DGBMT, DGD, ÖGGH and bng**

**March 28 – 30, 2019; Stuttgart**

**Chairman:** **Prof. Dr. Karel Caca, Ludwigsburg**

Ovesco products were presented in nine workshops on three different topics (hemostasis techniques (OTSC®) held by A. Naegel and M. Raithel, respectively; management of complications: perforations and post-operative leakages (OTSC®) held by J. Wedemeyer; and ESD techniques (RESECT+) held by E. Wedi, J. Hochberger, F.L. Dumoulin, and E. Kruse, respectively). Additionally, a workgroup meeting of young endoscopists on OTSC® and RESECT+ took place, a lunch symposium was held on the topic "EFTR with the FTRD® – where are we today?", and several talks and posters discussed products of Ovesco.

## Advancement of ESD and EMR is subject of current endoscopic research – at Ovesco, too!

**RESECT+**

### The novel high viscosity injection solution LiftUp® for ESD leads to a long-lasting lifting effect and could make the ESD procedure more effective

Endoscopic submucosal dissection (ESD) is an established procedure for endoscopic treatment of early-stage neoplasms. A crucial step of the complex procedure is the submucosal injection of an ideally highly viscous injection solution.
E. Wedi et al., University Hospital Goettingen, Germany, presented the results of a prospective, randomized preclinical study comparing the novel copolymer injection fluid LiftUp to normal saline solution (NaCl 0.9 %) and hydroxyethyl starch (HAES 6 %). A total of 60 standardized ESD procedures were performed in artificial lesions, each 3 x 3 cm in size, in an ex vivo porcine model (n=20 per injection solution). All 60 lesions were successfully resected using the standard ESD technique. R0 resection was achieved in 95 % (n=19) with LiftUp, in 100 % (n=20) with HAES and in 80 % (n=16) with NaCl. LiftUp had no procedure related perforations, one perforation occurred in the HAES group, and two perforations in the NaCl group. Adequate lifting was achieved in 16/20 cases (80 %) using LiftUp, in 6/20 cases (30 %) using HAES and in 6/20 cases (30 %) using NaCl. General ESD procedure time was shorter in the LiftUp group than in the other two groups, the difference, however, did not reach statistical significance.

The authors concluded that LiftUp appears to be a safe alternative to established fluids for ESD. It had a significantly improved lifting effect and required significantly less injected volume compared to well-established lifting solutions. With LiftUp, the ESD procedure could become more effective.

**A novel high viscosity injection solution (LiftUp) for Endoscopic Submucosal Dissection (ESD). A prospective comparison study with two established lifting solutions**
**(Eine neue hochvisköse Injektionslösung (LiftUp) für die Endoskopische Submukosa Dissektion (ESD). Eine prospektive Vergleichsstudie mit zwei etablierten Injektionslösungen)**
E. Wedi[1], C. Jung[1], J. Hochberger[2], J. Maiss[3], C.-N. Ho[4], G. Conrad[4], U. Baulain[5], V. Ellenrieder[1], P. Koehler[5]
[1]Goettingen, [2]Berlin, [3]Forchheim, [4]Tuebingen, [5]Mariensee

**The EMR+ technique allows bi-manual operation by triangulation**

R.F. Knoop et al., University Hospital Goettingen, Germany, presented the results of a preclinical study comparing efficacy and safety of a modified EMR technique (EMR+) using an Additional Working Channel (AWC®) to the established ESD procedure. In total 40 standardized lesions (3 x 3 cm) were manually placed in ex-vivo porcine models secured in an EASIE-R simulator. 20 lesions were resected using the novel EMR+ technique and 20 lesions by ESD. Median procedure time was significantly shorter in the EMR+ group (median 10.5 min, range 4.4 – 24 min) than in the ESD group (median 32 min, range 14 – 61.6 min; p<0.0001). The median resection area per minute was significantly larger in the EMR+ group (median 53.2 $cm^2$/min, range 15.6 – 370.4 $cm^2$/min) than in the ESD group (median 28.1 $cm^2$/min, range 12.7 – 64.4 $cm^2$/min, p<0.0001). The median size of the resected specimen was smaller in the EMR+ group (median 6 $cm^2$, range 2.5 – 30 $cm^2$ vs. constantly 9 $cm^2$). The rate of en-bloc resections was significantly lower in the EMR+ group (38 %) vs. the ESD group (95 %, p<0.0001). Two perforations occurred in the EMR+ group, in the ESD group no perforations occurred.

The authors concluded that the EMR+ technique using the AWC enables the transformation of a standard one-channel endoscope into a double-channel tool, which makes bi-manual operation by triangulation possible. The technique is a cost-effective option to overcome limitations of the conventional EMR as well as the ESD technique.

**Comparison study evaluating Endoscopic Submucosal Dissection and a modified EMR technique using an Additional Working Channel (EMR+)**
**(Vergleichsstudie zwischen der Endoskopischen Submukosadissektion und einer modifizierten EMR-Technik mit einem zusätzlichen Arbeitskanal (EMR+))**
R.F. Knoop[1], C. Jung[1], C.-N. Ho[2], G. Conrad[2], J. Maiss[3], U. Baulain[4], V. Ellenrieder[1], P. Koehler[4], E. Wedi[1]
[1]Goettingen, [2]Tuebingen, [3]Forchheim, [4]Mariensee

# The BougieCap leads to high dilation rate in benign esophageal stenosis and to significant improvement of the clinical symptoms of dysphagia

**BougieCap**

**Bougienage with the BougieCap leads to significant improvement of dysphagia-associated symptoms (DHI score regression from 51.6 to 27.9)**

B. Walter and colleagues, University Hospital Ulm, Germany, presented the first prospective multicenter-study evaluating application of the BougieCap for endoscopic treatment of benign esophageal stenosis. Use of the BougieCap allows in contrast to conventional Savary-Bougies a direct optical control of the dilation process, x-ray imaging is not necessary with the BougieCap. 50 patients (25 m/ 25 f, median age 67.1 ± 16.8 years) with benign esophageal strictures and clinically apparent dysphagia symptoms were included in the study. Etiology of the stenoses was peptic (n=23), radiation-induced (n=13), post-surgery (n=6), consequence of alkali burn (n=4), condition after ESD (n=2), eosinophilic esophagitis (n=1) and unknown (n=1). The pre-interventional diameter of the stenoses was median 7.5 mm (± 2.4 mm). Bougienage was successful in 96 % of cases (n=48). The average number of bougienage procedures per patient was 2.3 (± 0.7). A guide wire was used in 10 cases, in 8 of these a pediatric endoscope was in use, in the 2 remaining cases a standard gastroscope. In 2 cases, bougienage had to be discontinued because passage of the endoscope through the pharynx into the esophagus was not possible. In those two cases no guidewire had been used. Dysphagia symptoms were regredient from a median DHI score of 51.6 (±14.4) before bougienage to a score of 27.9 (± 9.3) 14 days after bougienage (Mann-Whitney: p<0.0001). No major complications occurred. In 2 cases a BougieCap was lost in the stomach, which did not lead to clinical symptoms.
**Results of a prospective multicenter study evaluating endoscopic treatment of benign esophageal stenoses (BougieCap study)**
**(Ergebnisse einer prospektiven multizentrischen Studie zur endoskopischen Behandlung gutartiger Ösophagusstenosen (BougieCap Studie))**
B. Walter[1], S. Schmidbaur[1], I. Rahman[2], B. Schumacher[3], D. Albers[3], A. Meining[1]
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# The FTRD® is used for risk stratification of colorectal carcinomas

**FTRD System**

**Full-thickness resection of colorectal cancer with the FTRD System allows exact histologic risk stratification and spares patients with "low-risk" features (62 % of the cohort) a surgical intervention**

A. Kuellmer et al., University Hospital Freiburg, Germany, presented a retrospective multicenter study assessing efficacy, safety and clinical value of the FTRD System for colorectal cancer. Data of 1234 patients treated with the FTRD System for various indications at 96 endoscopic centers were screened for eligibility. 156 patients with histological evidence of an adenocarcinoma were identified. This cohort comprised 64 patients undergoing FTRD resection after incomplete resection of a malignant polyp (group 1) and 92 non-lifting lesions (group 2). Endpoints of the study were: technical success, R0 resection rate, adverse events, successful discrimination of "low-risk" and "high-risk" tumors, as well as the need for surgical oncological resection.
Technical success was achieved in 144/156 patients (92.3 %). Mean procedural time was 42 min. R0 resection was achieved in 122/156 cases (71.8 %). Subgroup analysis showed a R0 resection rate of 87.5 % in group 1 and of 60.9 % in group 2 ($p<0.001$). Severe procedure-related adverse events were recorded in 3.9 % of patients. Discrimination between high-risk versus low-risk tumor was successful in 155/156 patients (99.3 %). In group 1, 84.1 % were identified as low-risk lesions, whereas 16.3 % in group 2 had low-risk features. In total 53 patients (34 %) underwent oncologic resection due to high-risk features whereas 98 patients (62 %) were followed endoscopically.

The authors concluded, that endoscopic full-thickness resection with the FTRD for colorectal cancer is feasible, effective and safe. It allows exact histological risk stratification and can avoid surgery for patients with "low-risk" tumors.

**Endoscopic full-thickness resection of colorectal carcinomas with the FTRD-System - a retrospective multicentric study**
**(Endoskopische Vollwandresektion von kolorektalen Karzinomen mit dem FTRD-System - eine retrospektive multizentrische Studie)**
A. Kllmer[1], J. Mueller[1], K. Caca[2], P. Aepli[3], D. Albers[4], B. Schumacher[4], A. Glitsch[5], H. Albrecht[6], I. Wallstabe[7], C. Hofmann[8], A. Erhardt[9], B. Meier[2], D. Bettinger[1], R. Thimme[1], A. Schmidt[1], and the FTRD study group
[1]Freiburg, [2]Ludwigsburg, [3]Luzern/Switzerland, [4]Essen, [5]Greifswald, [6]Neumarkt i.d.OPf, [7]Leipzig, [8]Mainz, [9]Wuppertal

**Increased risk of appendicitis following FTRD resection of adenomas arising from the appendiceal orifice**

A. Wannhoff et al., Ludwigsburg Hospital, Germany, presented a study assessing the risk of post-interventional appendicitis after FTRD resection at the appendiceal orifice. Data of all patients at the Ludwigsburg Hospital or the University Hospital Ulm, who had undergone full-thickness resection with the FTRD System at the appendiceal orifice between 2014 and 2018, was retrospectively analysed. Available follow-up data was analysed regarding development of appendicitis. Patients with appendectomy before FTRD application were excluded from the study.
Overall 44 patients (median age 68 years, range 47-85 years, n=25 female) matched the inclusion criteria. EFTR was successfully performed in all patients. During follow-up (median follow-up time 21 weeks, range 0-126 weeks) acute appendicitis occurred in 9 patients (23.7 %). 5 patients developed appendicitis within 10 days after resection, the remaining patients more than a month after the intervention. Six patients received appendectomy and 3 patients conservative treatment. All patients recovered completely.

The authors concluded that acute appendicitis can develop after full-thickness resection with the FTRD at the appendiceal orifice. Development of appendicitis can occur early after the intervention or after a period of longer latency. During informed consent discussion, patients should be informed about the appendicitis risk and a possible need for surgical treatment.

**Evaluation of the risk of appendicitis following FTRD resection of adenomas arising from the appendiceal orifice**
**(Untersuchung des Appendizitis-Risikos nach FTRD-Resektion am Appendixabgang)**
A. Wannhoff[1], B. Walter[2], T. Kreutzer[1], S. Schmidbaur[2], B. Meier[1], A. Meining[2], K. Caca[1]
[1]Ludwigsburg, [2]Ulm

**Application of the FTRD System can avoid surgical revision in many patients with colorectal relapse adenoma**

A. Schmidt, University Hospital Freiburg, Germany, held an expert review on the treatment of colorectal relapse adenomas. Non-pedunculated adenomas are mostly resected by EMR. Meta-analyses show that the risk of a relapse adenoma following this resection method is about 15 %. Piece-meal resection is a significant risk factor for recurrence of the adenoma. The risk of recurrence is about 20 % after piece-meal resection, while it is 3 % after en-bloc resection ($p<0.0001$). The ESD technique carries a risk of recurrence of about 4.8 %. Especially problematic for the follow-up resection is the fact that the previous resection results in scarring of the resection area, the relapse adenoma shows a non-lifting sign in most cases. In non-lifting lesions, EMR resection is usually not possible, ESD resection is time-consuming and technically extremely difficult when the lesion is located beyond the rectum. Besides, the risk of perforation is high when using the ESD technique. Another problem in the therapy of relapse adenomas is the fact that only 62 % of patients undergo endoscopic follow-up examination, this results in non-discovery of residual lesions and relapse adenomas or large size of residual and relapse lesions at a late follow-up date.

The FTRD System is very suitable for therapy of colorectal relapse adenomas. On the one hand it can be used within the entire colon and rectum, on the other hand, also non-lifting lesions can be resected with the FTRD System. Several mono- and multicenter clinical studies, among them the prospective multicenter study WALL RESECT incorporating 181 patients, showed technical success rates of about 90 %, R0 resection rates of about 80 % and rates of major complications of about 2 %. FTRD application is related to short procedural times and is relatively simple. FTRD usage is limited in large lesions, the optimal lesion size for this method is ≤ 2 cm. In larger lesions often hybrid techniques are possible (i.e. EMR + FTRD). In conclusion, application of the FTRD represents for many patients with colorectal relapse adenoma the avoidance of revision surgery.

**Colorectal relapse adenomas: always FTRD?**
**(Rezidiv-Adenome im Kolorektum: Immer FTRD?)**
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