

UNIVERSITÄTSKLINIKUM
AUGSBURG



Endoskopische Adipositas therapie

Dr. S. K. Gölder

III. Medizinische Klinik

UNIVERSITÄTSKLINIKUM
AUGSBURG



(Endoskopische) Adipositas therapie

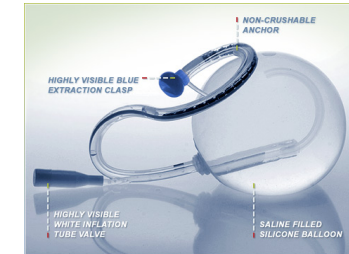


Verfahren

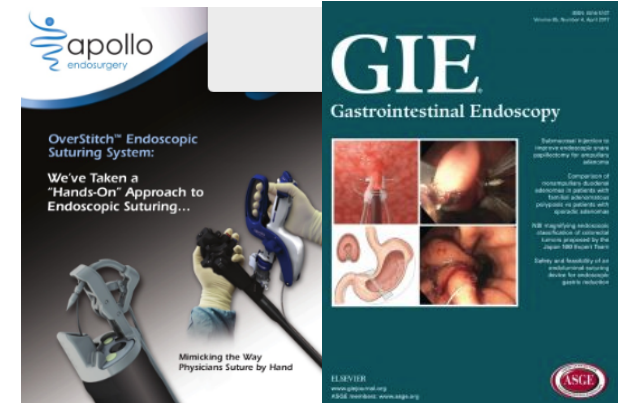
Restriktive Verfahren

„Weniger Essen“

1. Magenballon



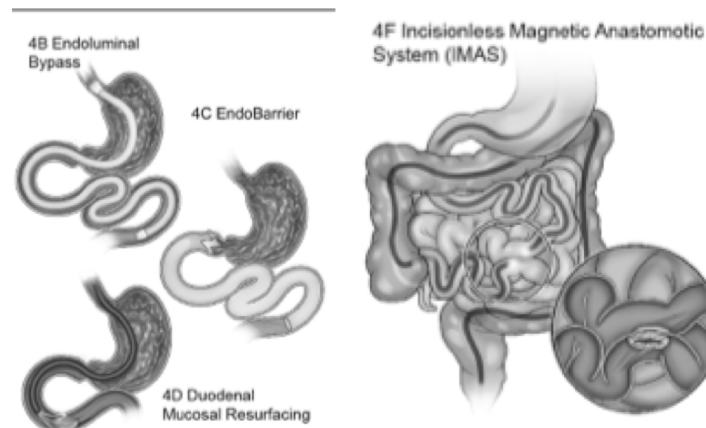
2. Nahtverfahren



Malabsorptive Verfahren

„Nimm weniger auf“

Endobarrier



Kombination

Magenballoon - Hintergrund

Preliminary Communication

INTRAGASTRIC BALLOON AS AN ARTIFICIAL BEZOAR FOR TREATMENT OF OBESITY

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THE LANCET, JANUARY 23, 1982



Fig. 1—An inflated gastric balloon immediately after insertion as demonstrated by X-ray.

PATIENTS

Five obese women took part in the trial as outpatients between May and September, 1981. The patients were otherwise healthy with no oedema or history of oesophageal or gastric complaints. Their mean age was 37 years (26–55), mean height 169 cm (165–177), mean weight 98·7 kg (82·8–110·0), and they were 52% (22–70%) overweight.⁴

METHOD

A rubber balloon ('Ballobes') with an air-tight valve was manufactured by dipping a cast into a 40% latex solution. The collapsed balloon, attached to two catheters (one inside the other), to the stomach in the same way as a tube. The balloon was then inflated with a calculated volume of 450 cm³, corresponding to a pressure of only 60mm Hg. After detachment the catheters were withdrawn, leaving the balloon

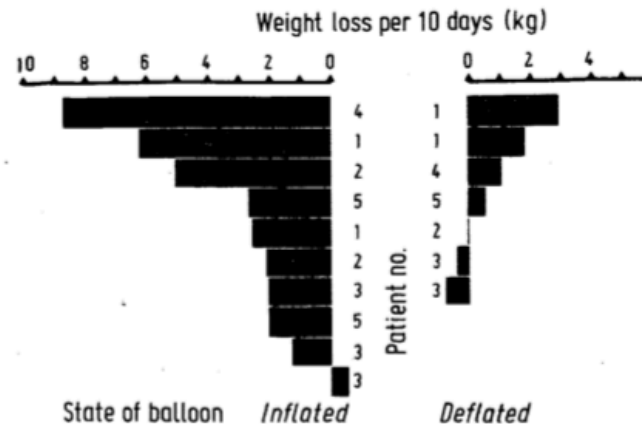


Fig. 2—10-day weight-loss during 10 periods with inflated balloon (left) and 7 periods of interposed deflation (right).

Individual responses are ranked according to their order of magnitude.

or carcinogenic and they must be physically and psychologically accepted by patients. Patients fitted with balloons must experience satiation despite a restricted calorie intake. We hope that the treatment will prove to have a satisfactory long-term effect on body-weight, independent of any sham effect of the procedure.

Magenballoon



Silikon-Balloon

Einführungsschlauch

Zuführungskatheter

Füllungsvolumen **500-700 ml**

Kochsalzlösung + Toluidinblau

Ventil/ Abwurfssystem

Magenballon Methode/Empfehlungen

Medikation:

Protonenpumpenhemmer-Therapie =
bedarfsadaptiert,

Reflux-Beschwerden !

Anti-Emesis-Medikation Bedarfsmedikation

Aufklärung; erste Woche

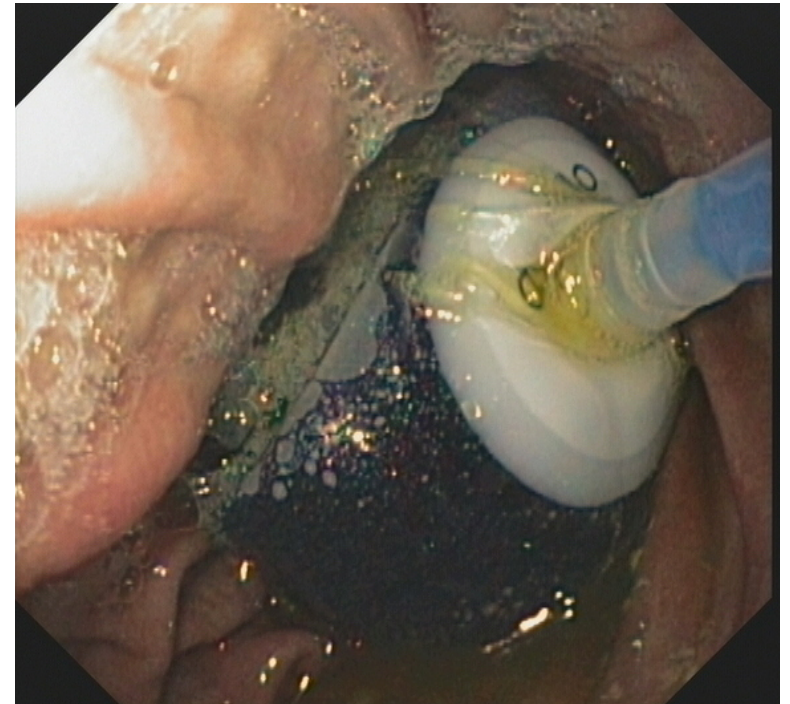
Alltagseinschränkungen

Verhaltensregeln:

Viel Trinken, kleinere, häufigere Mahlzeiten

Vermeiden: Tauchen, Kampfsport,

Achterbahn



Indikation – Adipositaszentrum

Teil einer invasiven Stufentherapie
(**Bridge to surgery**):

Adipositas-Grad III (BMI ≥ 40)

1. Schritt für 6 Monate Ballon **später**
operatives Verfahren

z.B. operative «Hoch-Risiko»-
Patienten

Kontraindikationen Anästhesie,
Operation

(Ablehnung operativer Massnahmen)



Magenballoon Komplikationen

Übelkeit, Erbrechen: > 30 % (1. Woche)

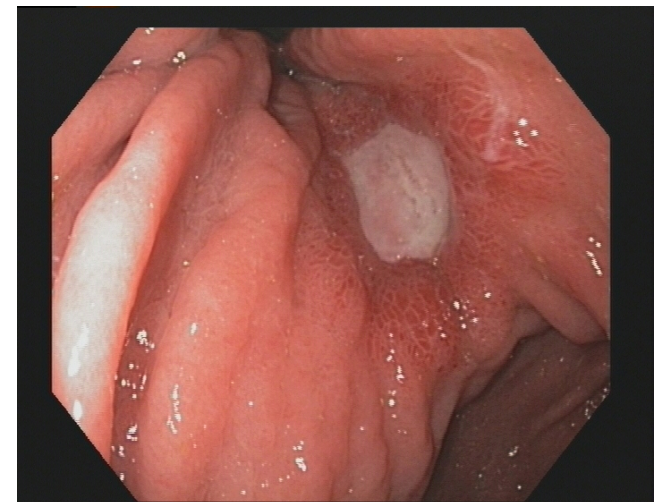
Frühzeitige Entfernung: 3 – 8 %

Leckage/Deflation: 2 - 23 %

Migration, Darmileus: 0.8%

Gastritis, Ulcus ventriculi: bis 10 % = pro PPI

Magen-perforation < 0.1% Todesfällen!!



Magenballoon the bigger the better ?

Analysis of Safety and Efficacy of Intra-gastric Balloon in **Extremely Obese Patients**



Stephan Göttig · Markos Daskalakis · Sylvia Weiner ·
Rudolf A. Weiner

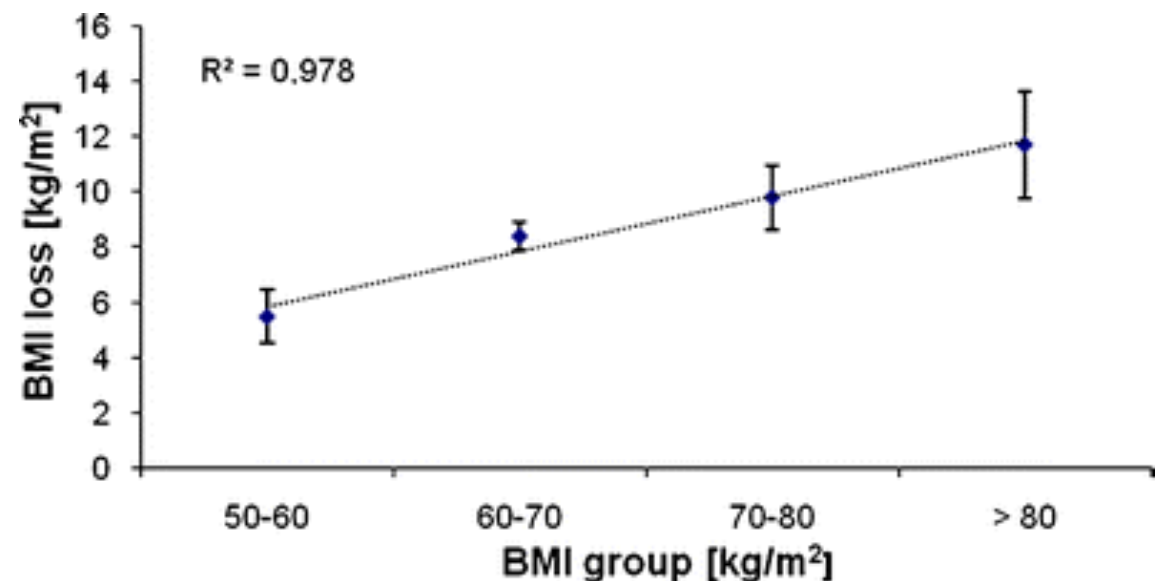
KG 211.0 ± 36.9 kg

➤ BIB 26.3 ± 15.2 kg

BMI $68.8 \text{ kg/m}^2 \pm 8.9$

➤ BIB $- 8.7 \text{ kg/m}^2 \pm 5.1$

➤ EBL $19.7 \% \pm 10.2$



Magenballon = Reduktion des Lebertvolumen

Obesity Surgery, 17, 150-154

Intragastric Balloon Reduces Liver Volume in Super-Obese Patients, Facilitating Subsequent Laparoscopic Gastric Bypass



BMI 55.20 ± 6.9 kg/m² (50-78)

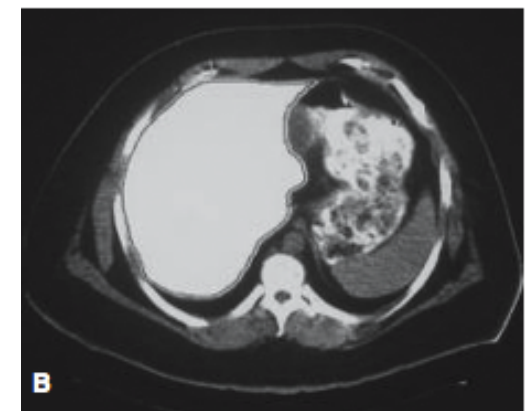
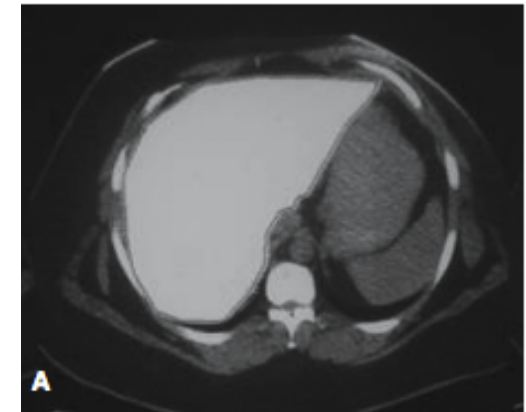
➤ BIB 47.4 kg/m² ± 7.7 (41-63) - **14,1 %**

KG 149.30 ± 26.3 kg (113-216)

➤ BIB 128 ± 20.1 kg (94-171) - **12,7%**

➤ EWL - **22,1%**

Lebertvolumen (- 31.8% \pm 18.16%)



Magenballon – Gewichtsverlauf danach

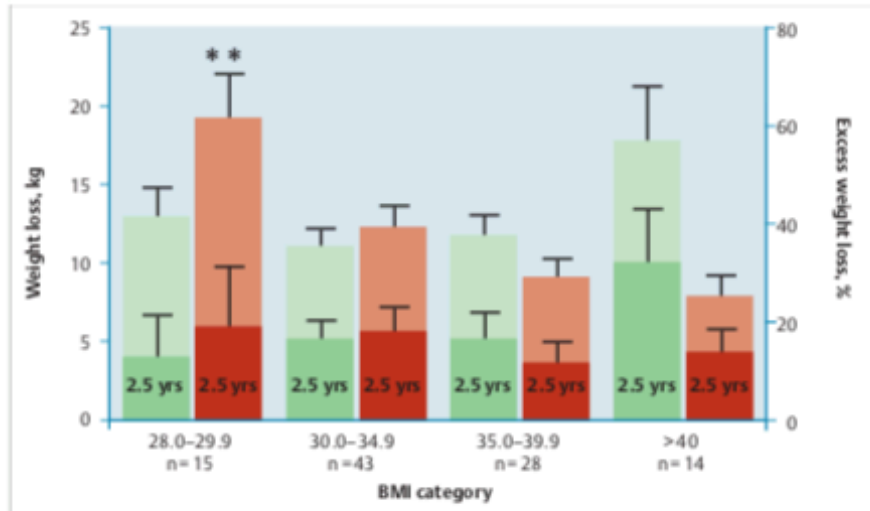


Fig. 2 Weight loss (mean \pm SE) at 6 months and 2.5 years (top and bottom bars, respectively), according to body mass index (BMI) categories. For each BMI category, left and right bars indicate absolute and relative weight loss, referring to left and right y axis, respectively. ** $P < 0.001$ for comparison with all other BMI categories (Tukey-Kramer test).

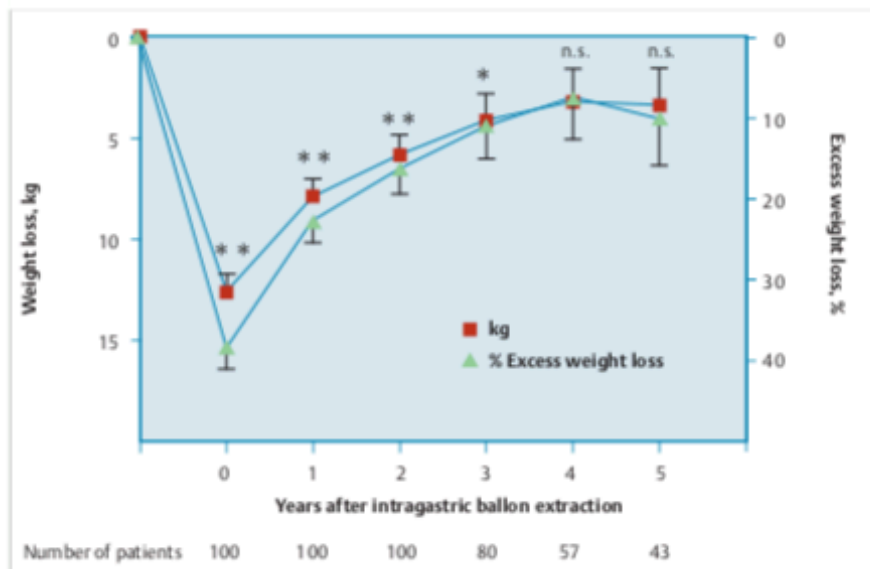


Fig. 3 Weight loss (mean \pm SE) from baseline, absolute and relative, left and right y axis, respectively. Comparison with baseline body weight: * $P < 0.005$; ** $P < 0.001$; n.s., not significant.

25 % erfolgreich nach 5 Jahren

..Intragastric balloon therapy was reported to “smooth the path to bariatric surgery” finally chosen by a majority, **64 %**, of patients who had **experienced initial weight loss** followed by weight regain, compared with **33 %** of those patients who had **not experienced a significant weight loss** with the intragastric balloon and with **7 %** of those **successfully maintained weight loss**.

Positionspapier der Fachgesellschaften zur Anwendungsempfehlung der endoskopischen biliodigestiven Diversion¹ in Deutschland – DDG/DGAV/DGVS –

Autoren

E. Siegel¹, G. Kähler², W. Schepp³

Institute

Die Institutsangaben sind am Ende des Beitrags gelistet.

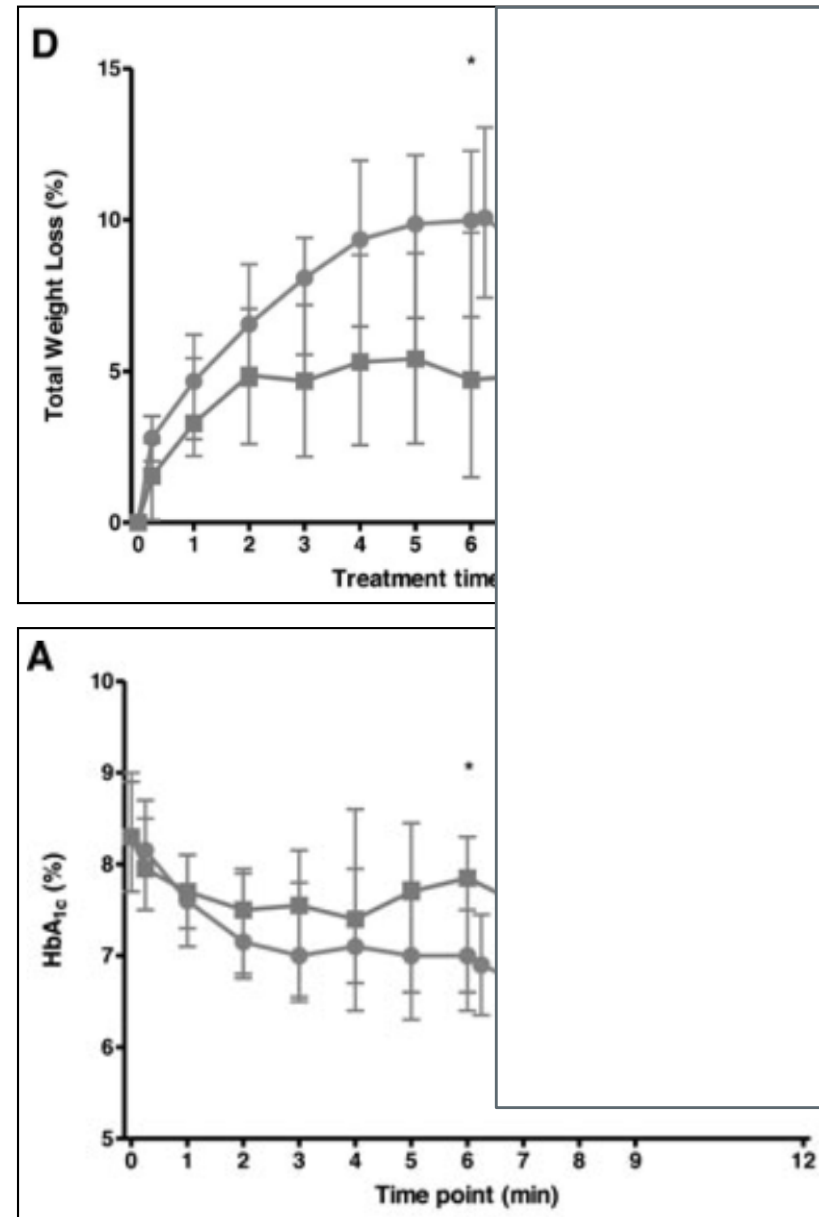
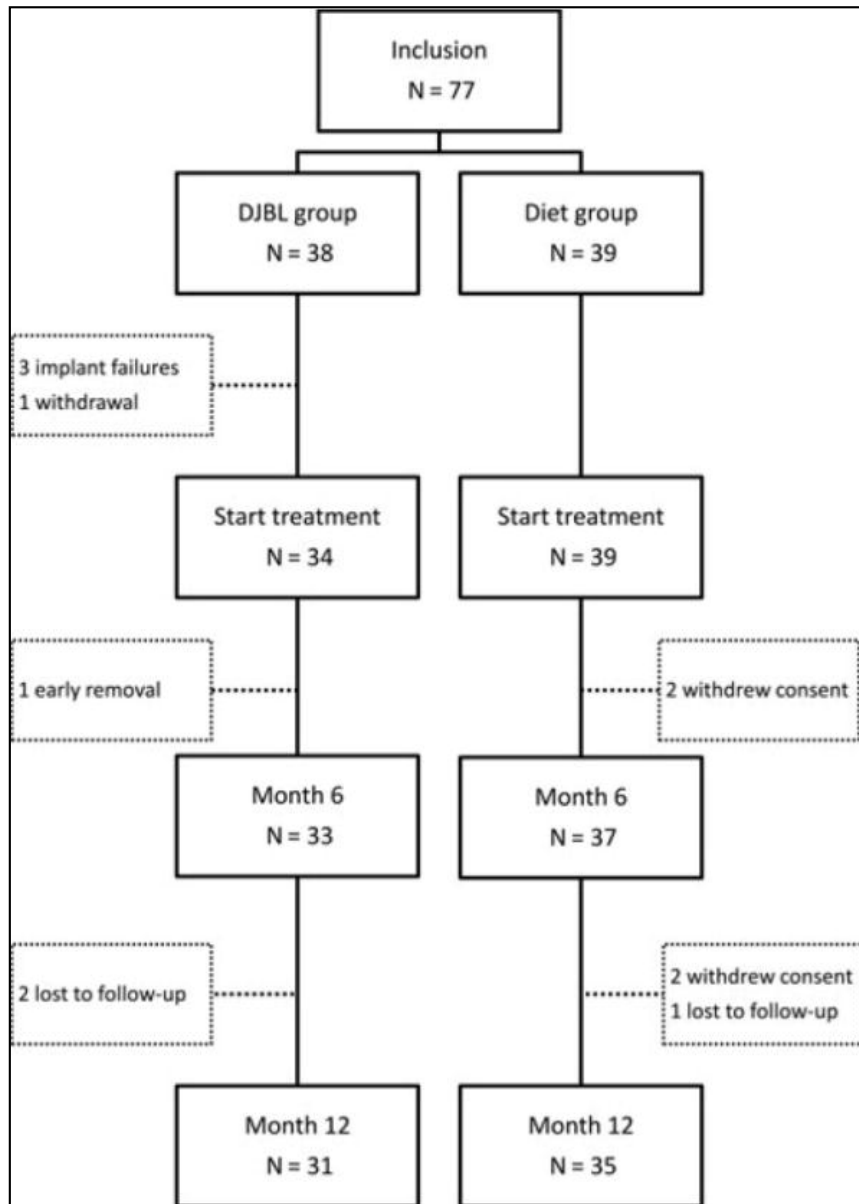
Empfehlung zur Anwendung der biliodigestiven Diversion:

1. Diabetes mellitus Typ 2 + Übergewicht
(**BMI 30 – 45**)
-> persönlichen individuellen Therapieziele
Zeitraum von 3 – 6 Monaten nicht erreichen.
2. Morbid adipöse Patienten
(**BMI 45 – > 60**)
-> DJBS bariatrische Operation medizinisch
indiziert (Stufenkonzept/“Bridging“)



¹ Auch: duodenal-jejunal bypass sleeve (DJBS)

1. DJBS – DM Typ 2 BMI 30 – 45 kg/m²



2. Morbid adipöse Patienten (BMI 45 – > 60 kg/m²)

	J	Typ	N	BMI	Dauer	Komp. (%)	*EWL (%)
Gersin	2010	Multicenter Random/SHAM	DJBL 21 SHAM 26	46	12 wo	13/21 (62 %)	11,9 %
Schouten	2010	Multicenter/R andom/Diät	DJBL 30 DIÄT 11	48,9	12wo/24wo	22/30 (73 %)	19%
Escolano	2012	Singlecenter	DJBL 42	43,7	52 wo	24/42 (57 %)	47 %
			DJBL 93	46,2		59/93 (63 %)	11,9 – 47%

*EWL (Excess Weight Loss)

= [(Op-Gewicht – aktuelles Gewicht) /
Übergewicht bei Op bezogen BMI 25] x
100 %

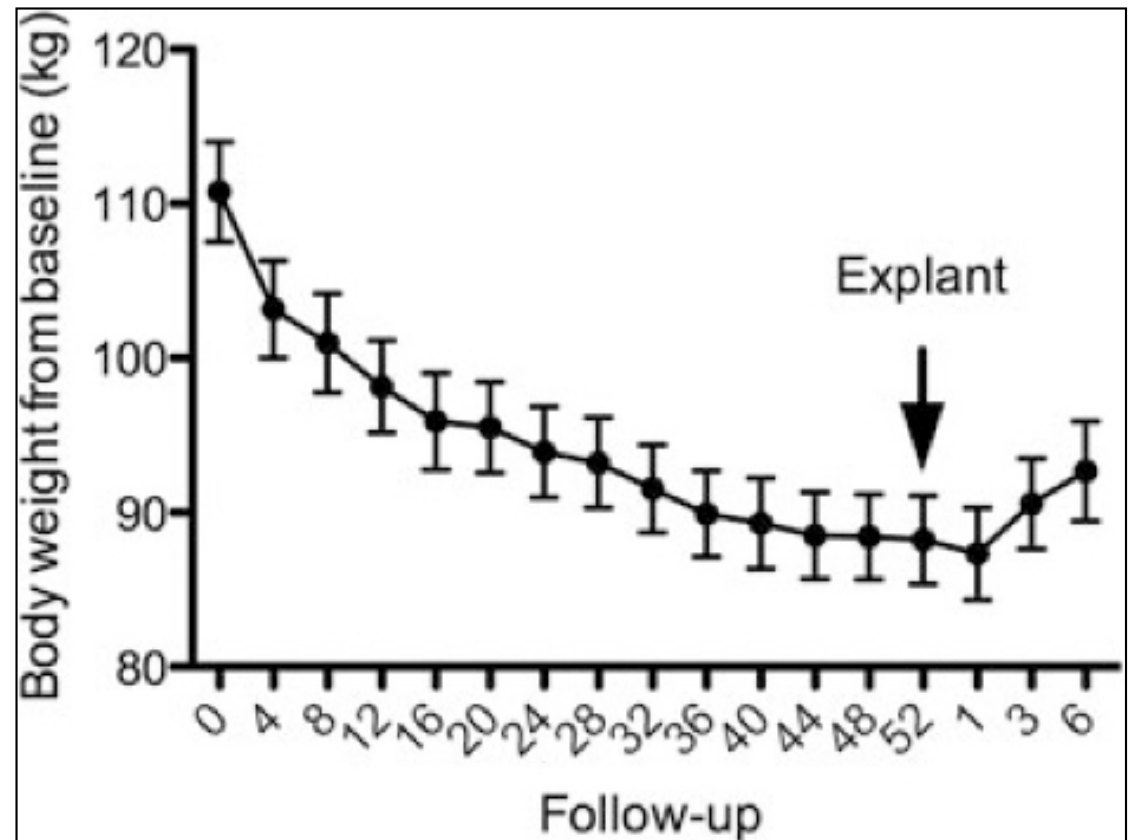
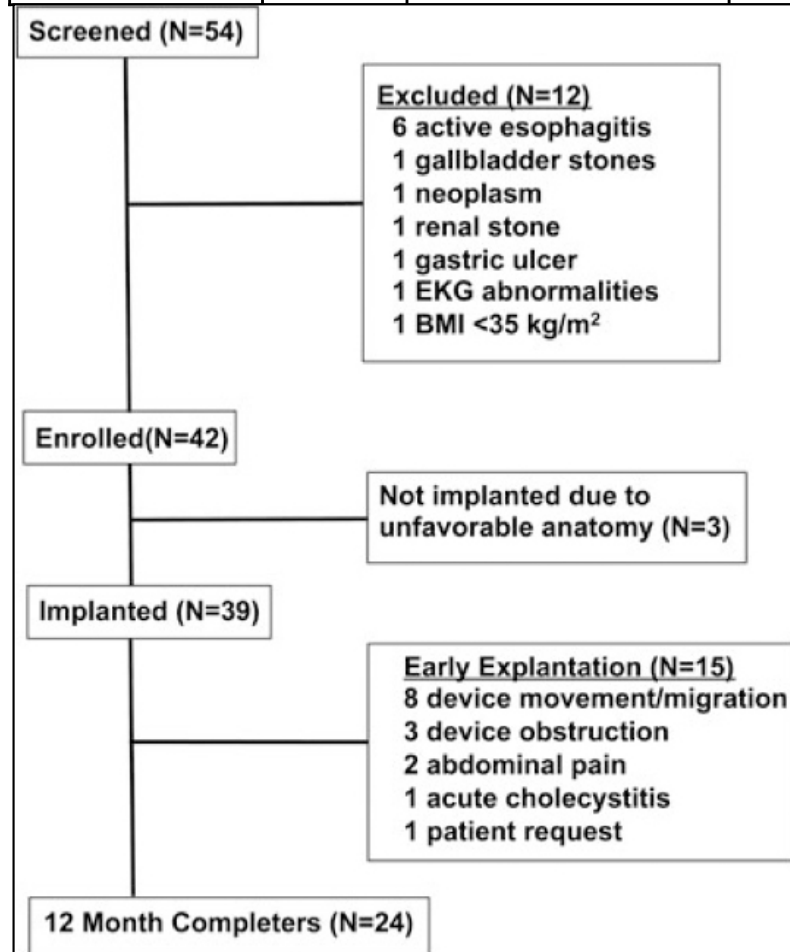
GIE 2010, 71 (6):976-982.

Ann Surg 2010, 251 (2):236-243.

Ann Surg 2012, 255 (6):1080-1085.

2. Morbid adipöse Patienten **Stufentherapie / Bridging**

Escolano	2012	Singlecenter	42 39 DJBL	43,7	52 wo	24/42 (57 %)	47 %
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Komplikationen

EndoTrial-Studie in den USA

GID und die US-amerikanische Behörde FDA haben im gegenseitigen Einvernehmen beschlossen, die EndoTrial-Studie zum 30. Juli 2015 zu beenden.

Mit sieben Fällen von Leberabszessen im Rahmen der EndoTrial-Studie beträgt die Inzidenzrate ca. 3,5 %. Dieser Wert übersteigt den zuvor festgelegten Sicherheitsgrenzwert von 2 %.



Deutsche Diabetes Gesellschaft

Reinhardtstraße 31
10117 Berlin
Tel 030/3 11 69 37-0
Fax 030/3 11 69 37-20
E-Mail: info@ddg.info
www.ddg.info

Berlin, 02.09.2015

Stellungnahme der Deutschen Diabetes Gesellschaft (DDG) zum Abbruch der „ENDO Trial“ Studie (FDA Studie Endobarrier bei Patienten mit Typ 2 Diabetes mellitus)

Die Rate an Leberabszessen ist im Endo Trial deutlich höher als die global und die in Deutschland beobachteten Zahlen. **Weltweit** liegt die Rate an **Leberabszessen** bei etwa **0,73%** (3000 Patienten), in Deutschland bei **0,46%** (651 Patienten, Stand 24.08.2015). Im nationalen **Endobarrier-Register** sind aktuell **3 Fälle** von Leberabszessen erfasst. Bei 202 dokumentierten Fällen entspricht dies einer **Ereignisrate** von **1,48%**.

Komplikationen II Quelle: GI Dynamics

Complications Leading to Removal*		Established Thresholds
Complication	# incidents Incident Rate (%)	
GI Bleed	52 (1.6%)	≤ 5%
Intolerance	51 (1.6%)	≤ 10%
Migration	50 (1.5%)	≤ 10%
Hepatic abscess	31 (0.95%)	≤ 2%
Liner obstruction	25 (0.8%)	≤ 5%
Perforation**	10 (0.3%)	≤ 3%
Pancreatitis	12 (0.4%)	≤ 3%
Difficult (surgical) removal	10 (0.3%)	≤ 1%
Total	241(7.4%)	

*Clinical studies and commercial outside the US (N=3256)

** Five subjects experienced an intestinal perforation during either the implant or explant procedure

All events resolved without permanent sequelae

Data through 31Oct15

Endoskopisches Nähen

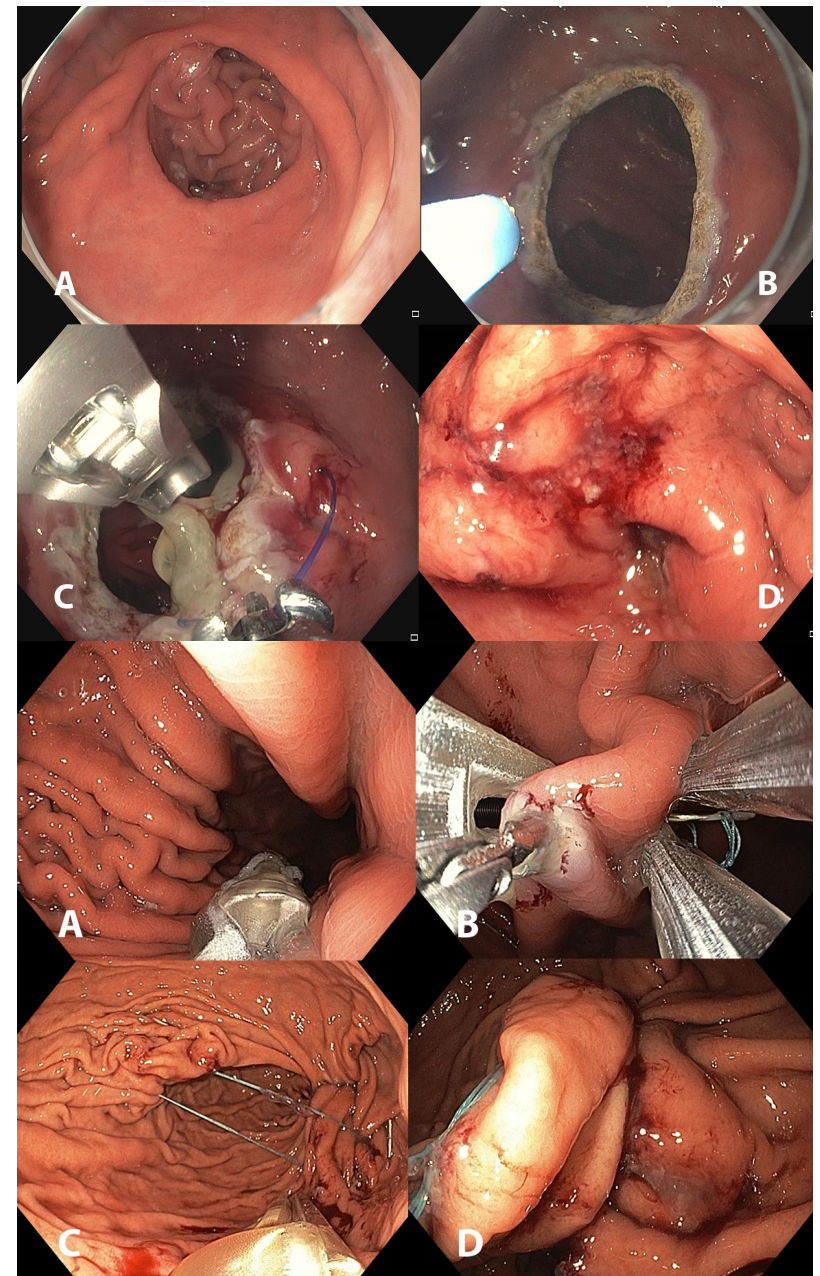
Endoskopische Transorale Outlet Reduktion nach Magenbypass eTOR

Overstich,
Apollo Endosurgery, Austin Texas, USA

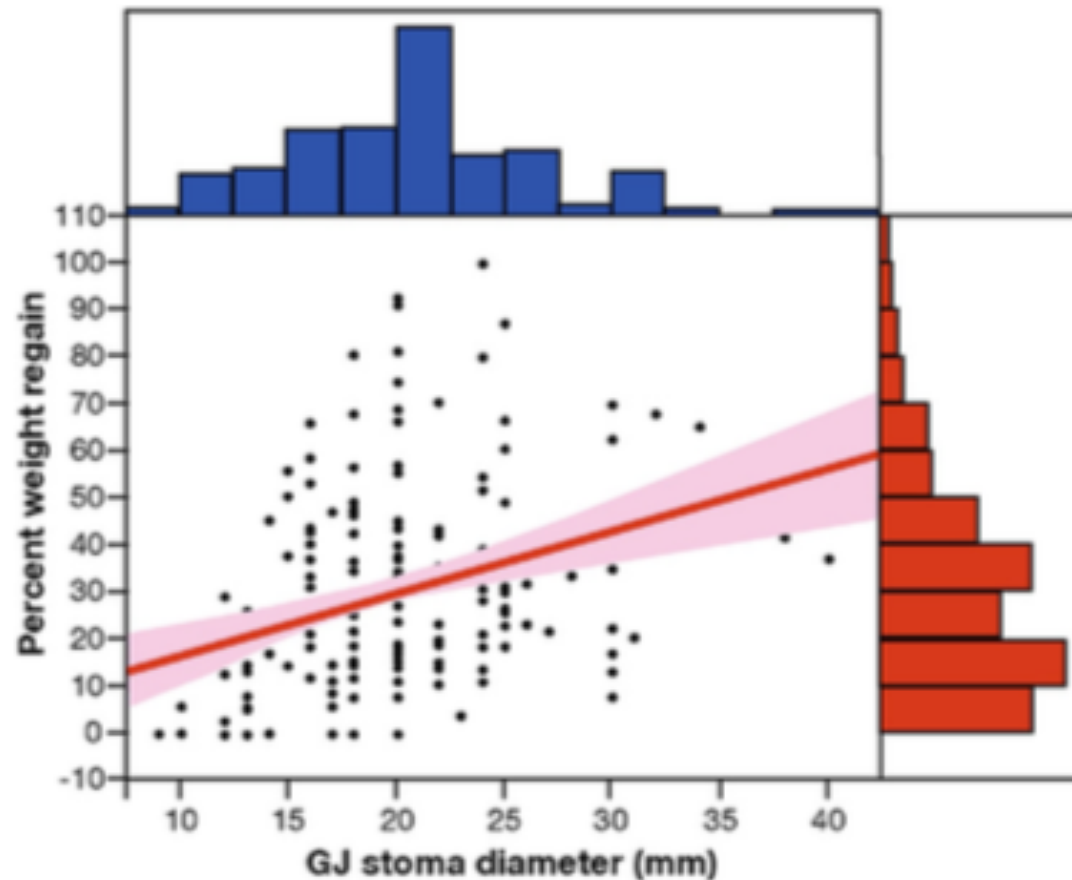
Endoskopische Sleeve Gastroplasty ESG

Overstich,
Apollo Endosurgery, Austin Texas, USA

Endomina,
Endotools, Brüssel, Belgien

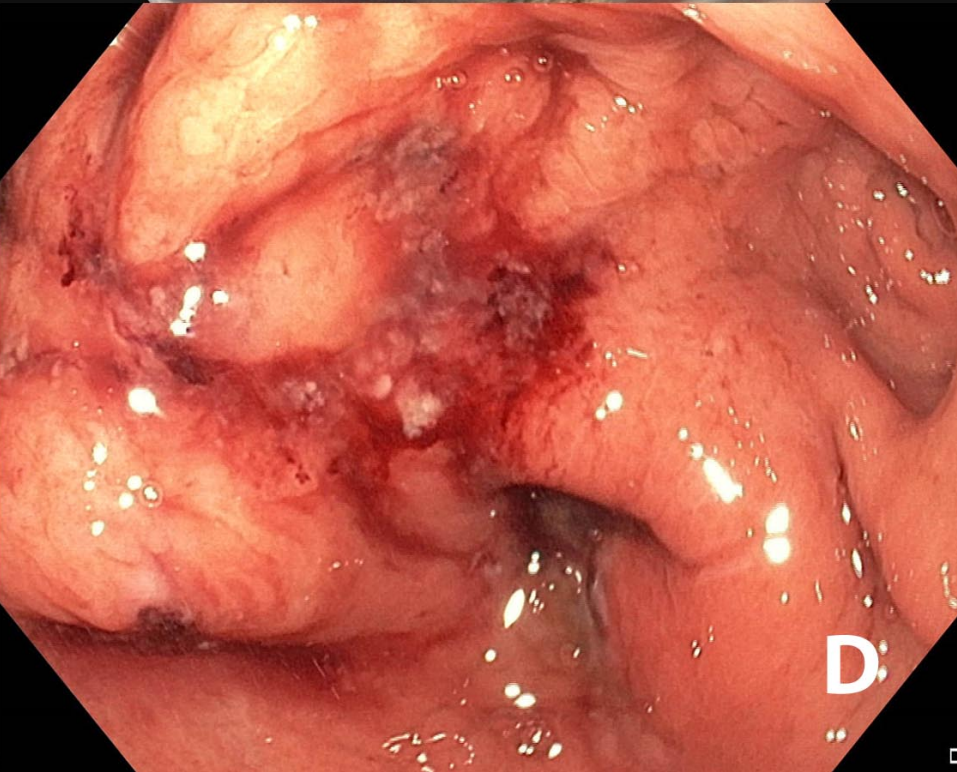
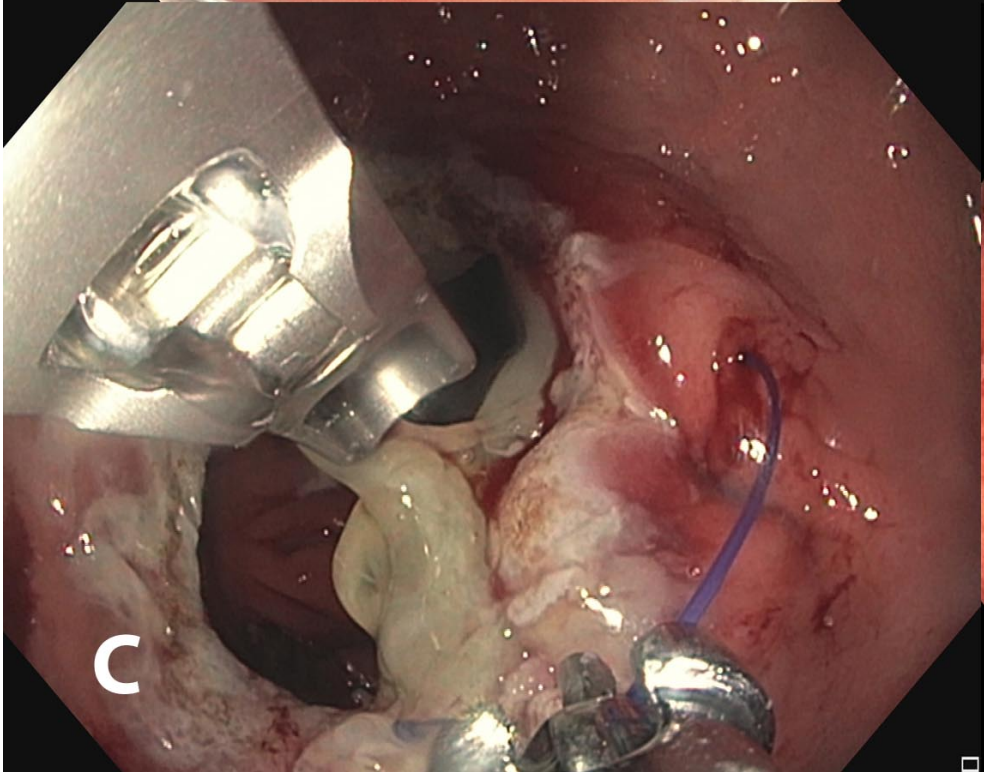
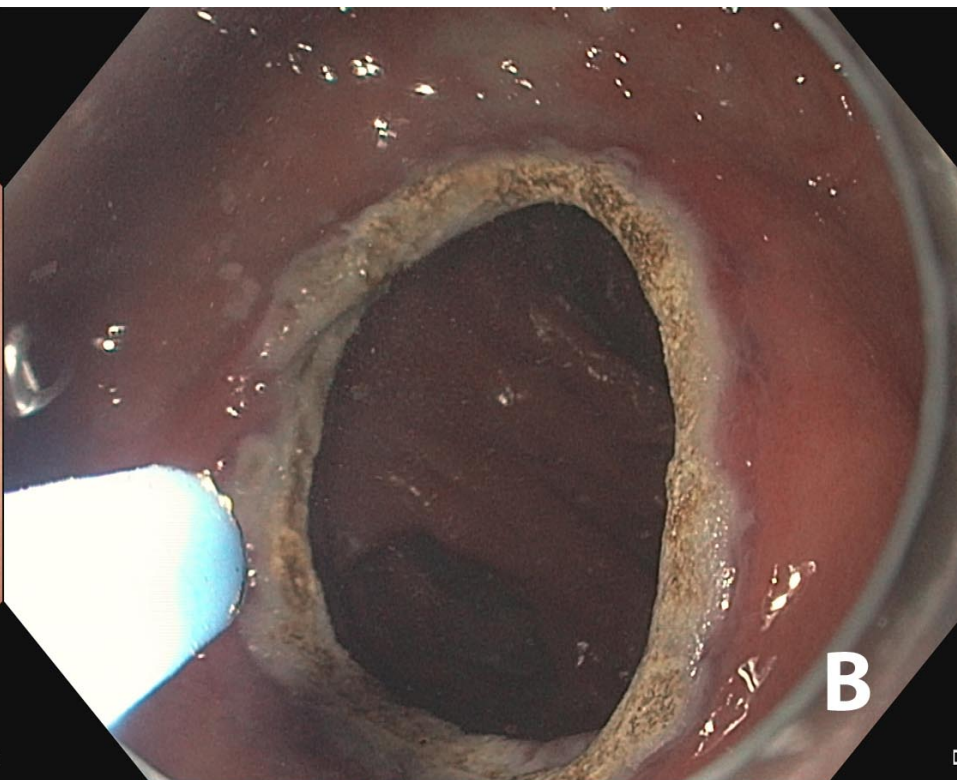
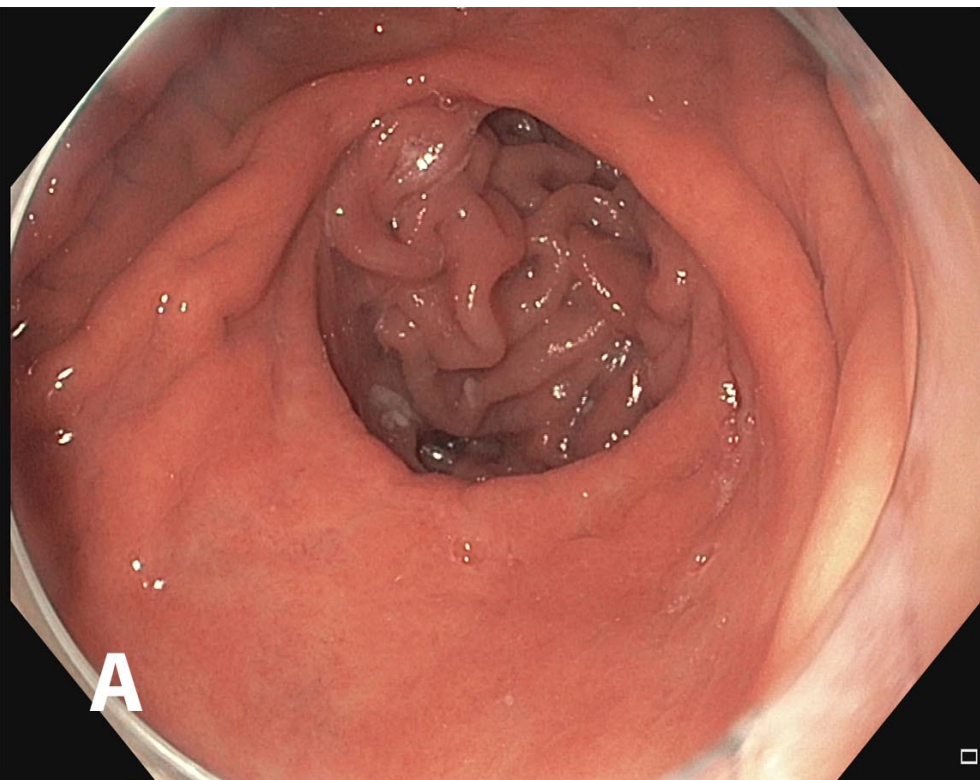


Endoskopische Transorale Outlet Reduktion nach Magenbypass eTOR - Hintergrund



Gewichtszunahme nach
Magenbypass = **15 – 20 %**
U.a. **Verlust der Restriktion**
= **Durchmesser** der
Gastrojejunostomie **korreliert** mit
dem Ausmaß der
Gewichtszunahme





Endoscopic Suturing for Transoral Outlet Reduction Increases Weight Loss After Roux-en-Y Gastric Bypass Surgery

CHRISTOPHER C. THOMPSON,¹ BIPAN CHAND,² YANG K. CHEN,³ DANIEL C. DEMARCO,⁴ LARRY MILLER,⁵ MICHAEL SCHWEITZER,⁶ RICHARD I. ROTHSTEIN,⁷ DAVID B. LAUTZ,⁸ JAMES SLATTERY,¹ MICHELE B. RYAN,¹ STACY BRETHAUER,⁹ PHILLIP SCHAUER,⁹ MACK C. MITCHELL,¹⁰ ANTHONY STARPOLI,¹¹ GREGORY B. HABER,¹¹ MARC F. CATALANO,¹² STEVEN EDMUNDOWICZ,¹³ ANNETTE M. FAGNANT,¹⁴ LEE M. KAPLAN,¹⁵ and MITCHELL S. ROSLIN¹⁶

¹Division of Gastroenterology, ²Department of Surgery, Brigham & Women's Hospital, Boston, Massachusetts; ³Loyola University Medical Center, Maywood, Illinois; ⁴Division of Gastroenterology, University of Colorado Hospital, Aurora, Colorado; ⁵Division of Gastroenterology, Baylor University Medical Center, Dallas, Texas; ⁶Section of Gastroenterology, Temple University Hospital, Philadelphia, Pennsylvania; ⁷Department of Bariatric Surgery, ¹⁰Division of Gastroenterology, John Hopkins Bayview Medical Center, Baltimore, Maryland; ⁷Section of Gastroenterology, Dartmouth Hitchcock Medical Center, Lebanon, New Hampshire; ⁹Surgery Institute, Cleveland Clinic Foundation, Cleveland, Ohio; ¹¹Division of Gastroenterology, Lenox Hill Hospital, New York, New York; ¹²Division of Gastroenterology, St. Luke's Medical Center, Milwaukee, Wisconsin; ¹³Division of Gastroenterology, Washington University School of Medicine, St. Louis, Missouri; ¹⁴Independent Consultant to Davol, Inc, Foster, Rhode Island; ¹⁵MGH Weight Center and Gastrointestinal Unit, Massachusetts General Hospital; Boston, Massachusetts; ¹⁶Department of General Surgery, Lenox Hill Hospital, New York, New York

RCT, prospektiv Multizenter-Studie
(11 Zentren)

Einschluss: GJA > 20 mm und
ungenügend Gewichtsabnahme (<
50% EWL),

5% KGewichtszunahme vom Nadir (
> 6 Mo post-OP)

50 Pts. eTOR versus Sham-Prozedur

Fazit: Level I evidence that eTOR reduces weight regain after RYGB.

CLINICAL AT

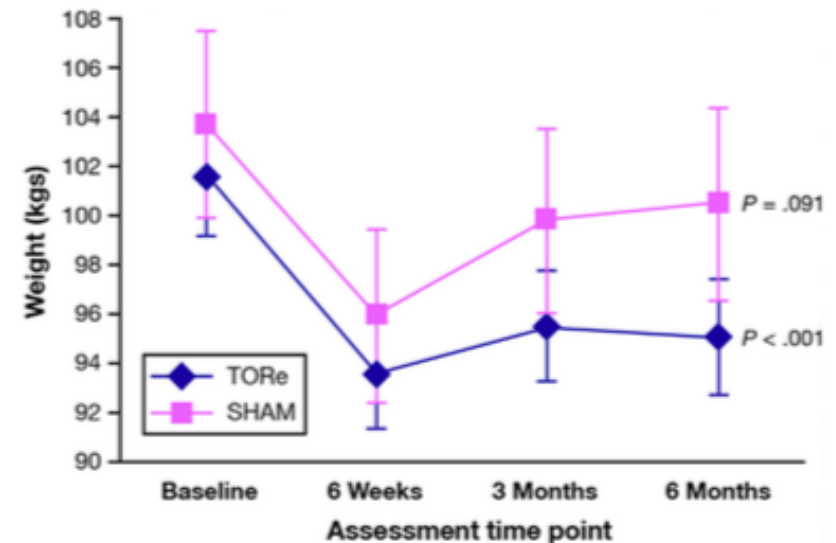
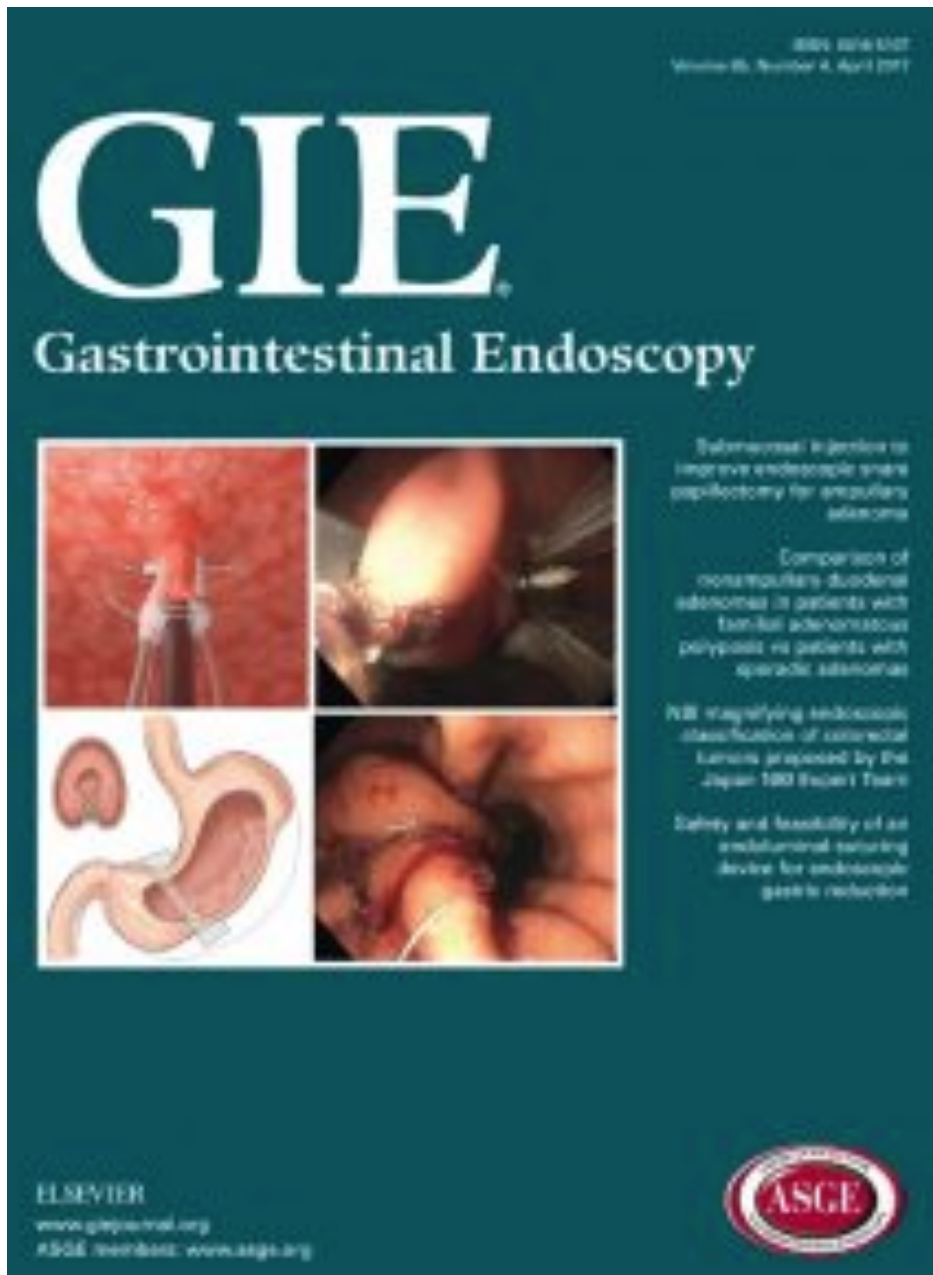


Figure 2. Weight (kg) plotted by time (mean \pm standard error of the mean) (ITT population).

Endoskopische Sleeve Gastroplasty (ESG)



Ziel:

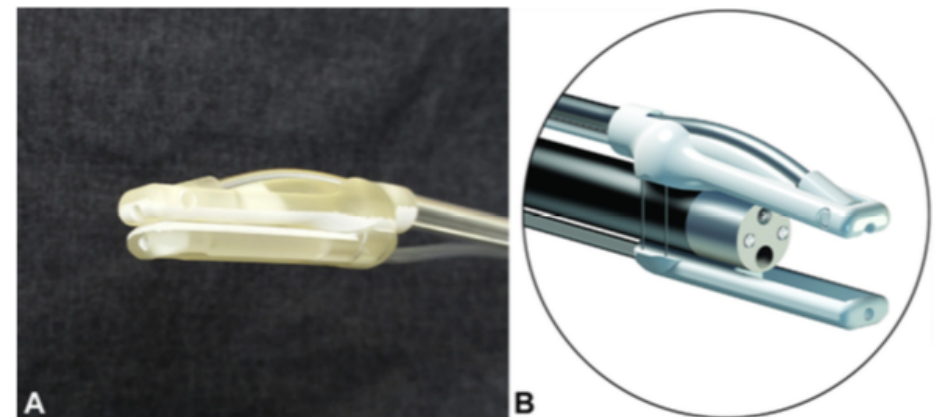
Reduktion des verwendeten
Magenvolumens

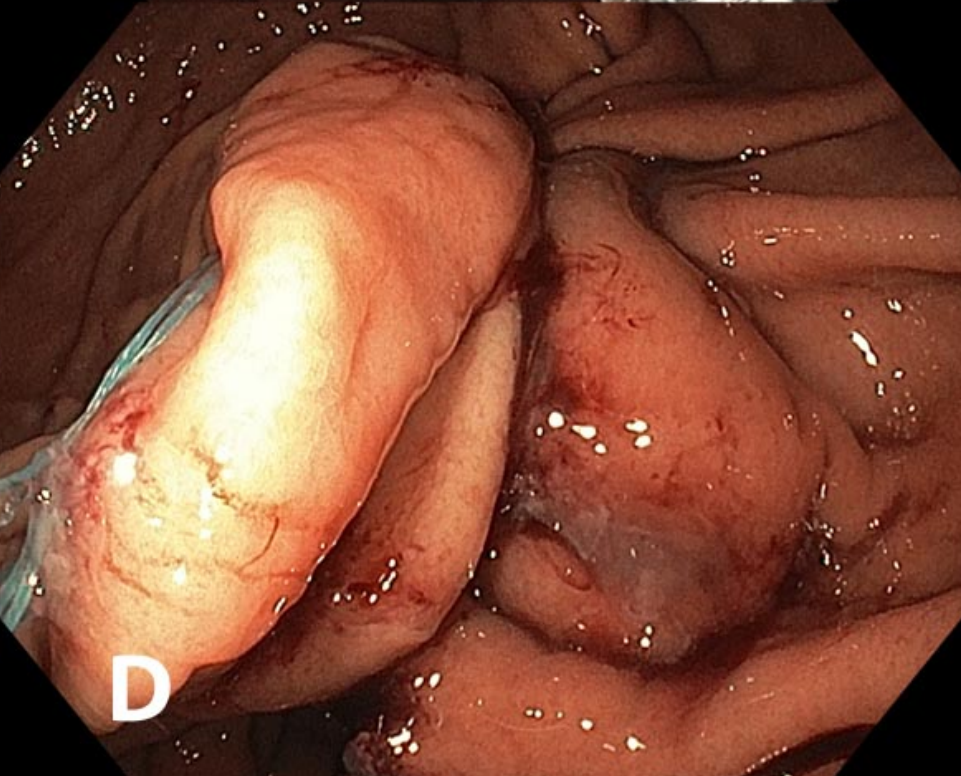
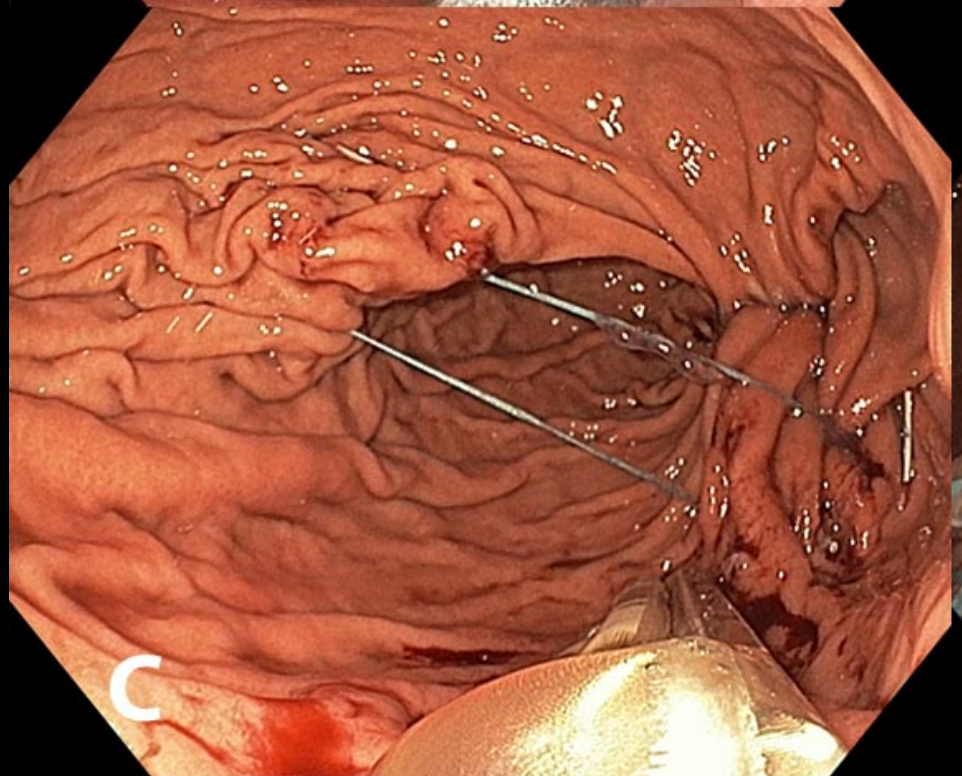
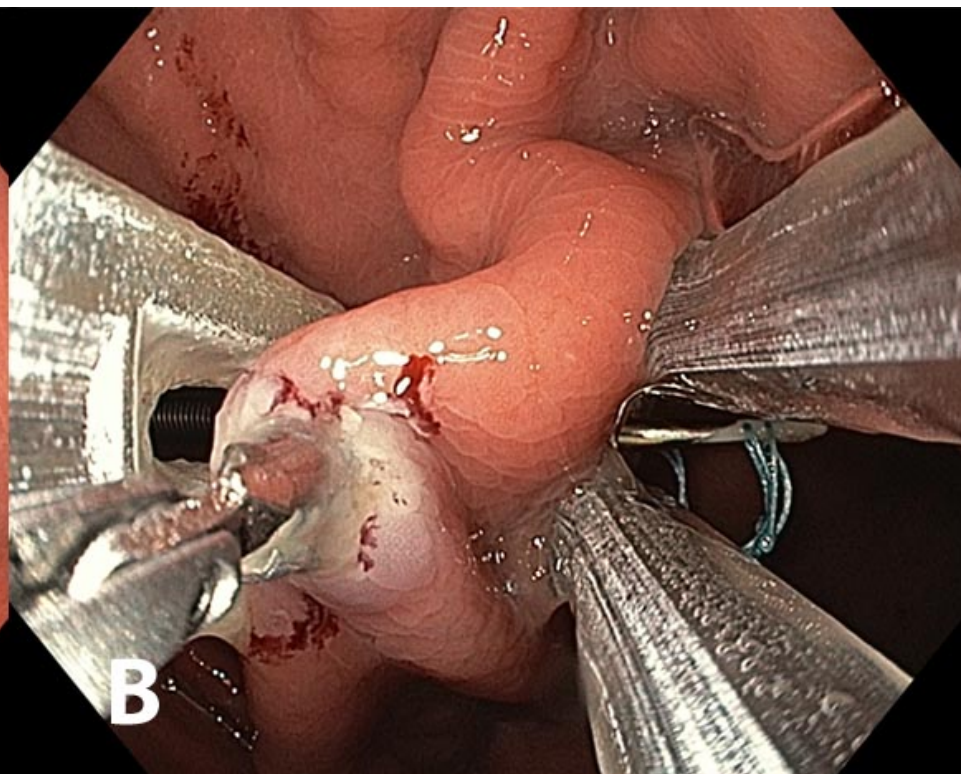
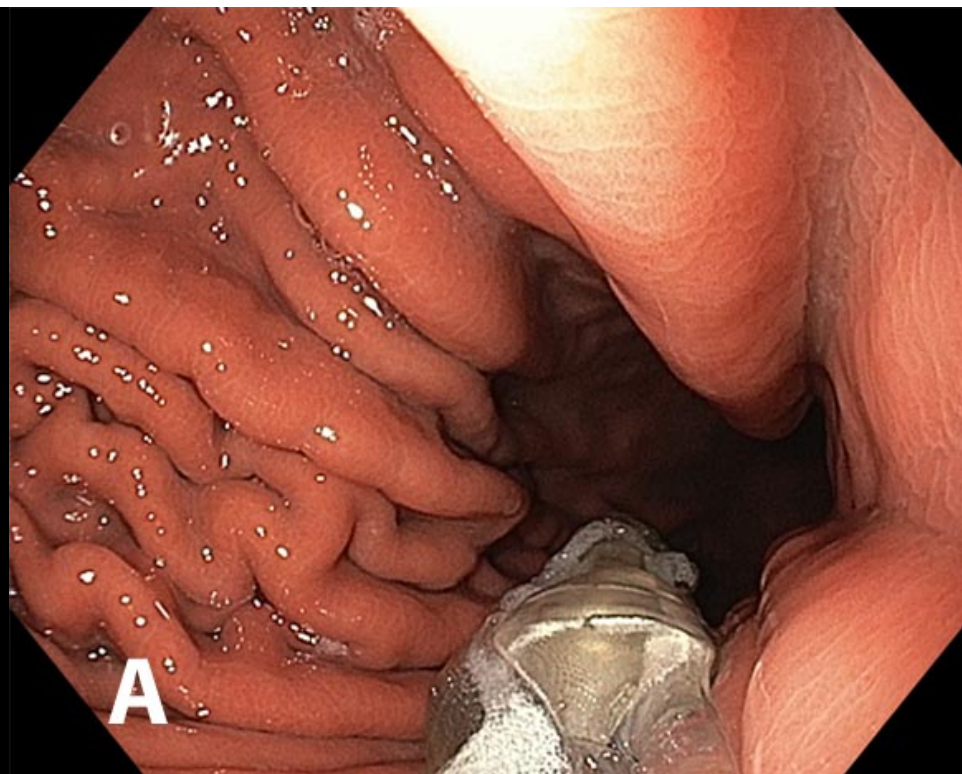
Methode:

Lumenobstruierende Nähte
mit dem Endoskop

Endomina:

Aufsatz mit normalem
(Standard-) Endoskop





STUDIEN !! - ECOMINA

- Endoskopische Sleeve Gastroplasty mit dem Endomina System als Bridge to Surgery (BMI > 50) (ESGBridge)

Endoscopy
2018

12 Mo

51

35.1 ± 3

7.4 % ± 7

29 ± 28

Huberty et al



Figure 3. A, Drawing of the stomach. Crosses and cin
cedure. C, Endoscopic view after multiple appositions

Was bleibt ?

Magenballon bisher Standard als Bridge to Surgery

Endobarrier = funktioniert aber leider nicht verfügbar

eTOR (endoskopische Transorale Outlet Reduktion) =

Evidenz I Standard of care !

ESG (**E**ndoskopische **S**leeve **G**astroplasty) = let's see =

STUDIEN

ADIPOSITASZENTRUM !