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ENDOSCOPIC THERAPY OF CROHN´S DISEASE

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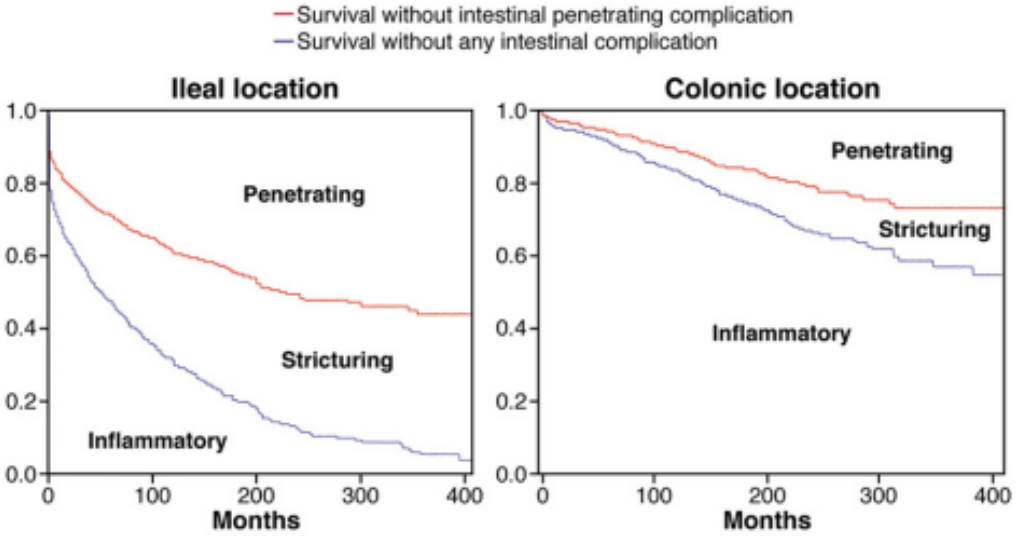
CZECH REPUBLIC

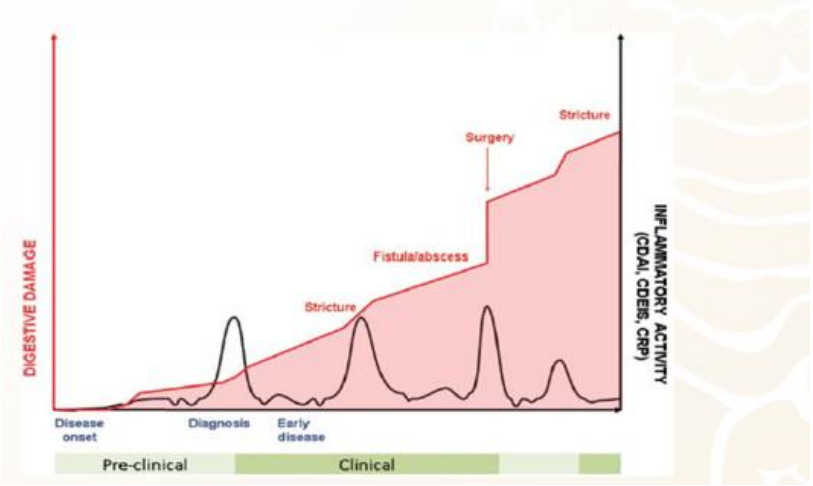
DISCLOSURE

- I declare the following conflicts of interest in the context of the subject of this presentation:

Relationship	Company
Investigator	Abbvie, Takeda, Janssen-Cilag, Celtrion, Roche
Employee	Nemocnice České Budějovice a.s. 1. LF UK, Praha; ZSF JU, Č. Budějovice
Consultant	Biogen, Tillotts, Ferring, Alfasigma, Takeda
Stake holder	
Speeker	Janssen-Cilag, Abbvie, Takeda, Celtrion, Ferring, Pfizer, Alfasigma, Biogen, PRO.MED.CS
Advisory board member	Takeda, Janssen-Cilag, Ferring, Pfizer, Alfasigma, Tillotts, Biogen

CD: PROGRESSIVE DISEASE





Cosnes J et al., Gastroenterology 2011
Pariente B, et al. IBD 2011

SURGERY IN CD

- Cumulative risk of surgical resection 10 years after diagnosis: **40 – 55%**

- Cumulative risk of repeated surgery 10 years after first resection: **20 – 44%**

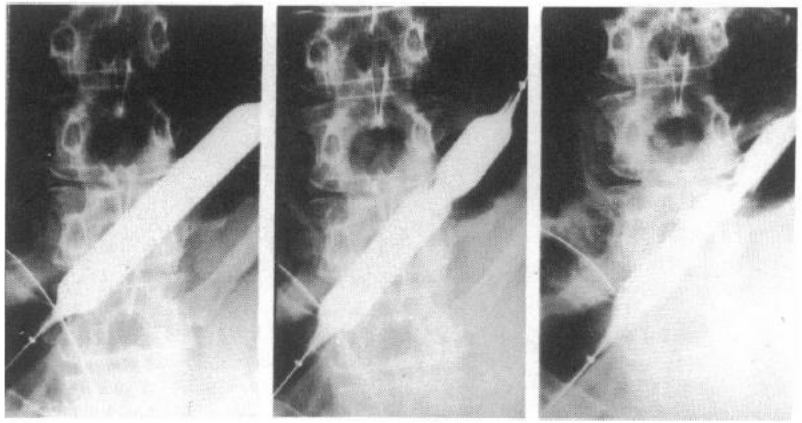
Peyrin-Biroulet L, et al. *Am J Gastroenterol* 2010;105:289-97

HISTORY OF EBD IN CD

- 12 pts, 6x endoscopy, 6x open surgery
- rectum, duodenum, jejunum-ileum, pylorus, **primary strictures**
- wire-guided dilation

Conclusion:

- **endoscopic dilation is technically feasible and safe**
- **small-bowel dilation less effective compared to strictureplasty**



Alexander-Williams J. et al. Ann R Coll Surg Engl. 1986 Mar;68(2):95-7

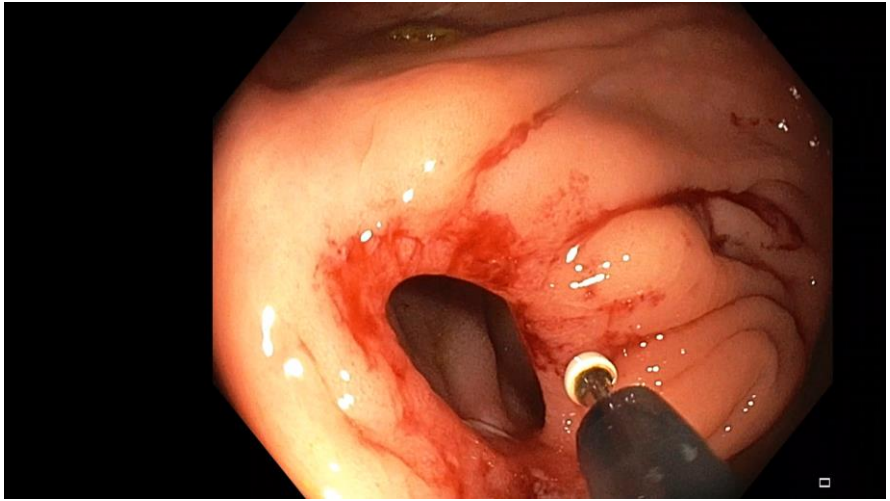
SYSTEMATIC REVIEW WITH META-ANALYSIS: EBD FOR CD

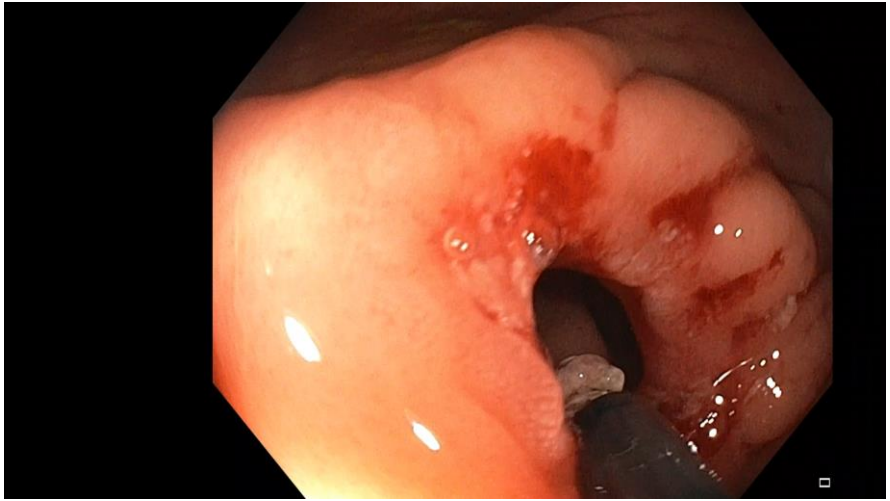
Author	Country	Study design	Population size	Number of strictures (s)	Number of dilatations (d)	Symptomatic response occurrence, S	Technical response occurrence, E	Complication occurrence, C	Study outcome
Ajlouni[15]	Australia	R	37	83	113	NS	75 s	1	E, C
Atreja[16]	USA	R	128	169	430	NS	154 s	4	E, C
Bhalme[17]	UK	R	79	93	191	61	75	3	E, S, C
Blomberg[18]	Sweden	P	27	NS	NS	22	NS	3	S, C
Breysem[19]	Belgium	P	18	20	24	8	16	0	E, S, C
Brooker[20]	UK	R	14	14	26	11	NS	0	S, C
Couckuyt[21]	Belgium	P	55	59	78	34	70 d	6	E, S, C
De Angelis[22]	France	R	26	27	46	24	46 d		E, S
East[24]	UK	RCT	13	NS	NS	NS	12		E
Endo[25]	Japan	P	30	47	83	NS	154 s	5 s	E, C
Ferlitsch[26]	Austria	P	46	NS	73	NS	NS	3 d	C
Foster[27]	USA	R	24	29	71	22	NS	2	S, C
Gustavsson[28]	Sweden	R	125	NS	594	NS	533 d	41 d	E, C
Honzawa[29]	Japan	R	25	29	83	NS	22		E
Dear[23]	UK	R	22	NS	71	16	NS	0	S, C
Mueller[30]	Germany	P	55	74	93	42	52	1	E, S, C
Nanda[31]	Ireland	P	31	NS	55	14	55 d	0	E, S, C
Ramboer[32]	Belgium	P	13	15	53	11	NS	0	S, C
Sabate[33]	France	R	38	41	53	47d	32		E, S
Scimea[34]	Italy	P	37	39	72	30	31	0	E, S, C
Singh[35]	USA	R	17	20	29	13	28 d	4	E, S, C
Stienecker[36]	Germany	P	25	31	50	NS	24		E
Thomas-Gibson[38]	UK	R	59	NS	124	24	101 d	8 d	E, S, C
Van Assche[37]	Belgium	R	138	NS	237	61	134	12 d	E, S, C
Williams[39]	UK	R	7	NS	15	NS	5	1	E, C
Total			1089	790	2664				
Pooled unweighted event rate (%)						393/615 (63.9)	403/435 (93)	25/564 (4)	

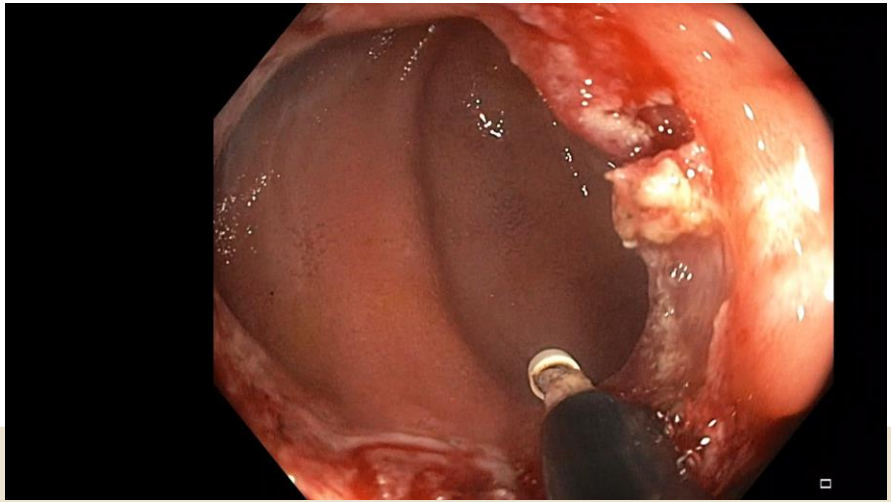
Morar, P. S., Aliment Pharmacol Ther, 2015; 42: 1137-1148

ELECTROINCISION (ENDOSCOPIC STRICTUROTOMY)

- A method based on the principle of **controlled disruption of the fibrous ring**
- **Different techniques**
  - Horizontal
  - Radial
  - Semicircumferential
  - Circumferential
- **A method requiring appropriate knowledge, experience, and training**







COMPARISON OF EFFECTS AND COMPLICATIONS OF EST AND EBD

Outcome		Stricturotomy N = 21	Balloon Dilation N = 164	*P* value
Follow-up time, year		0.8 (0.1–1.6)	4.0 (0.8–6.9)	<0.0001
Age at procedure, year		43.3 ± 14.5	42.8 ± 13.4	0.76
Duration from last surgery to procedure, year		6.4 (1.7–16.4)	7.8 (3.6–13.3)	0.56
Duration from CD diagnosis to procedure, year		19.6 (11.4–28.1)	16.6 (9.9–25.8)	0.85
Immediate technical success		21 (100.0%)	147 (89.5%)	0.25
Symptomatic improvement		8/11 (72.7%)	59/103 (45.4%)	0.08
Endoscopic improvement		8/17 (47.1%)	57/163 (35.0%)	0.32
Escalation of drug after procedure		3 (14.3%)	53 (32.3%)	0.09
Additional endoscopic therapy (EBD or ES)		13 (61.9%)	98 (59.8%)	0.85
Disease related emergency department visits		6 (28.6%)	40 (24.4%)	0.74
Stricture-related	Per patients	2 (9.5%)	34 (20.7%)	0.33
	Per visit	4/11 (36.4%)	78/104 (75.0%)	0.001
Disease related hospitalization		7 (33.3%)	40 (24.4%)	0.93
Stricture-related	Per patients	1 (4.8%)	33 (20.1%)	0.16
	Per visit	2/12 (16.7%)	57/102 (55.9%)	0.35
Complication				
Perforation	Per patients	0/21 (0.0%)	4/164 (2.4%)	1.0
	Per procedures	0/45 (0.0%)	5/478 (1.1%)	
Transfusion-required bleeding	Per patients	3/21 (14.3%)	0/164 (0.0%)	<0.0001
	Per procedures	4/45 (8.8%)	0/478 (0.0%)	
Subsequent surgery		2 (9.5%)	55 (33.5%)	0.03

Lan N: Inflamm Bowel Dis 2018;18:897-907

ENDOSCOPIC STRICTUROTOMY

Abstracts | ESGE Days 2023
Oral presentation
Colonoscopy in Inflammatory bowel disease 21/04/2023, 10:00 – 11:00 Liffey Meeting Room 1

Endoscopic stricturotomy – A novel therapeutic modality for IBD-related strictures: First European experience

M. Lukas , M. Kolar , M. Lukas

- 67 pts, 92 procedures
- Cumulative probability of reintervention
  - 6 months - 30.2% (95% CI 15.6-46.2%);
  - 12 months - 40.3% (95% CI 25.5-54.6%);
  - 18 months - 48.8% (95% CI 34,0-62,1%).
  - time to reintervention not significantly affected by previous intervention, age of the anastomosis, concurrent therapy and specific ESt technique employed.

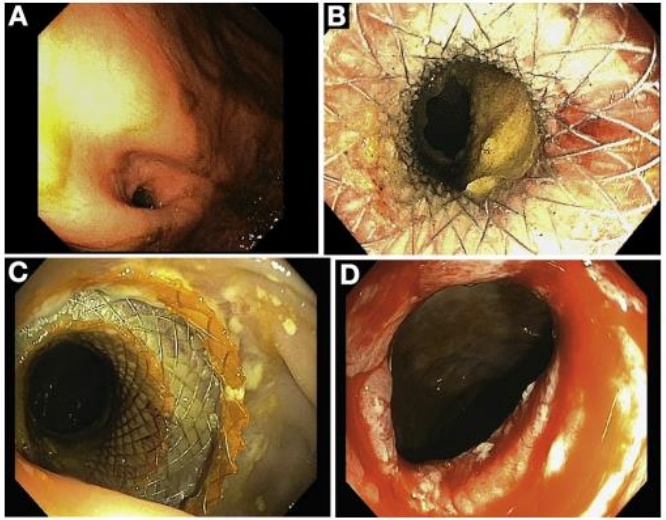
METALLIC STENTS

IMAGE OF THE MONTH

Treatment of Crohn's Disease Anastomotic Stricture With a Lumen-apposing Metal Stent

Jordan E. Axelrad, Simon Lichtiger, and Amrita Sethi

Division of Digestive and Liver Diseases, Columbia University Medical Center, New York, New York



Published online: 2021-09-08

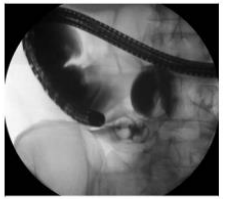
E-Videos

Thieme

First treatment of Crohn's disease refractory anastomotic stricture with a lumen-apposing metallic stent suitable for colonoscopy

Video 1 Stenting of an anastomotic Crohn's stricture.

▶ Fig. 1 Ileocolonic anastomotic stricture.



▶ Fig. 2 Balloon probe set beyond the stricture confirming the short nature of the stricture.

A 58-year-old patient with Crohn's disease and prior ileocecal resection, experienced repeated bouts of bowel occlusion related to a short and fibrotic anastomotic stricture despite several endoscopic dilations. To avoid further surgery, endoscopic stenting was chosen to relieve symptoms and prevent relapses.

Colonoscopy was performed under general anesthesia (▶ **Video 1**). The stricture was located 80 cm from the anal margin and could not be passed by the colonoscope (▶ **Fig. 1**). Stricture diameter and length were 0.5 cm and 1 cm, respectively, when measured using contrast injection and traction with an extraction balloon under X-ray control (▶ **Fig. 2**). A guidewire and fully covered lumen-apposing metallic stent (LAMS; Niti-S-SPAXUS; Taewoong Medical, Gyeonggi-do, South Korea) were inserted through the stricture (▶ **Fig. 3**, ▶ **Fig. 4**). The deliv-

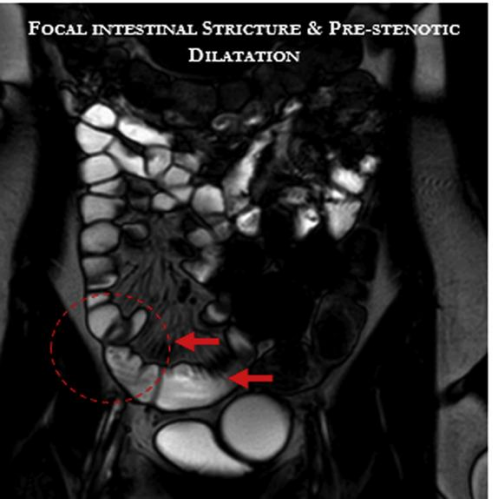
Endoscopic stents are commonly used to treat benign strictures, especially in the esophagus. However, endoscopic stenting in Crohn's strictures has often been disappointing due to high rates of migration [1, 2]. The design of LAMS reduces the risk of migration while allowing removal when necessary. Despite promising early results showing the efficacy of LAMS in Crohn's strictures [3–5], widespread use has not followed, partly because the short delivery catheter of the currently used model (AXIOS; Boston Scientific, Marlborough, Massachusetts, USA) is only compatible with gastroscopes.

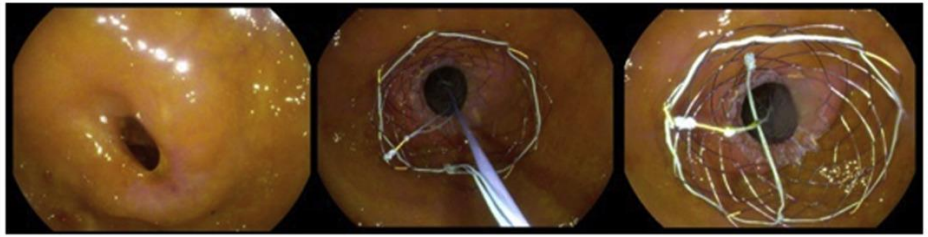
The Niti-S-SPAXUS stent has a 180-cm delivery system that is compatible with colonoscopes, making it particularly suitable for benign refractory strictures remotely located in the colon, such as anastomotic Crohn's strictures.

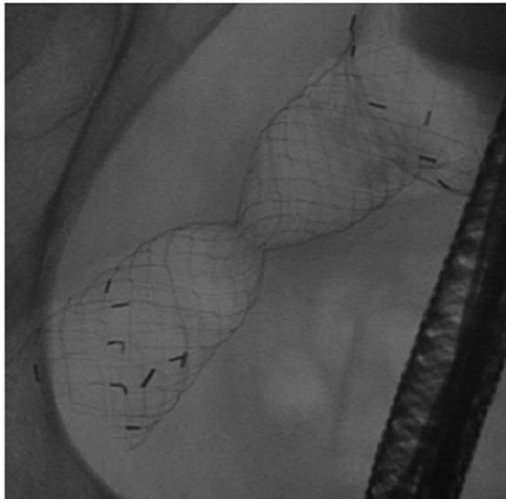
Axelrad JE. Clin Gastroenterol Hepatol. 2018 Mar;16(3):A25-A26; Marcellier G, et al. Endoscopy 2021 Sep 8. doi: 10.1055/a-1559-1279. Online ahead of print

REMOVABLE, SELF-EXPANDING, PARTIALLY COVERED METAL STENT

THERAPEUTIC RESOLUTION OF CROHN'S DISEASE STRICTURES USING ENDOSCOPICALLY REMOVABLE STENTS







Das R, et al. Gastrointest Endosc 2020 Aug;92(2):344-352

REMOVABLE, SELF-EXPANDING, PARTIALLY COVERED METAL STENT

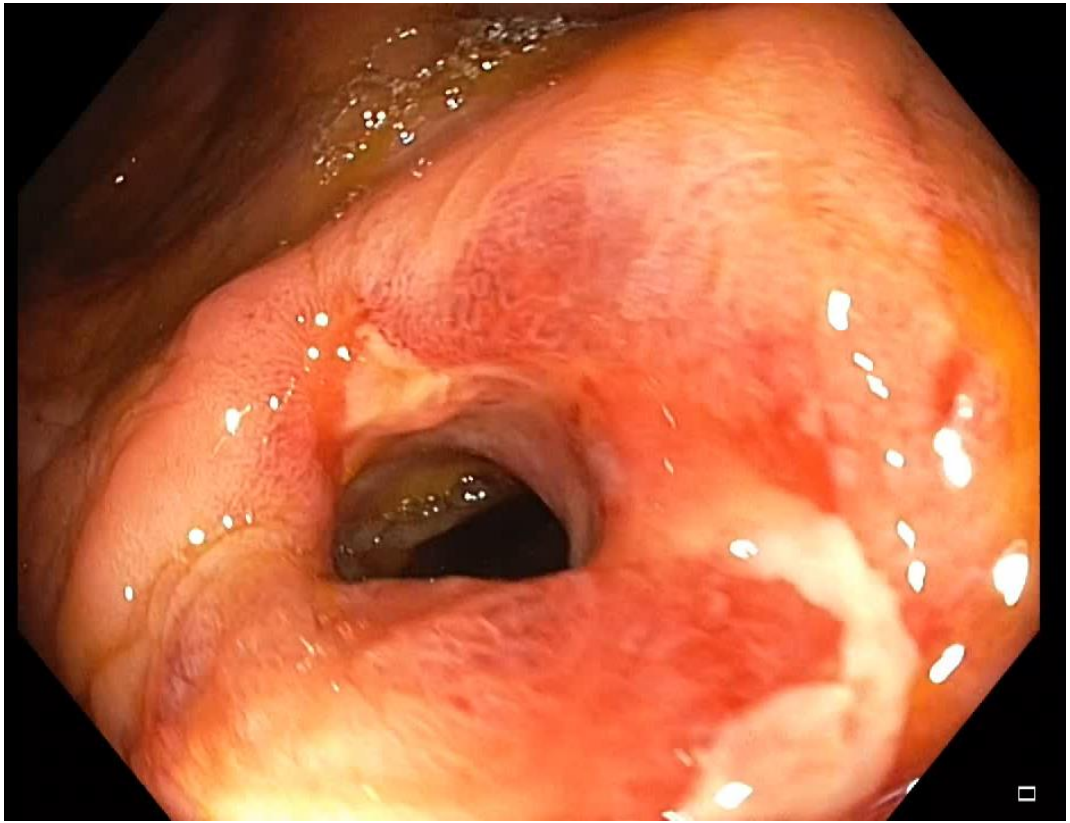
- 21 pts (19 anastomotic strictures, 2 de-novo)
- Symptomatic stricture, ≤6 cm
- Stent retrieval after 7 days

Results

- Symptom improvement – 81%
- 5 AEs: 2 discomfort, 3 asymptomatic stent migration
- FU: 3-50 months
- NO STRICTURE-RELATED SURGERY!

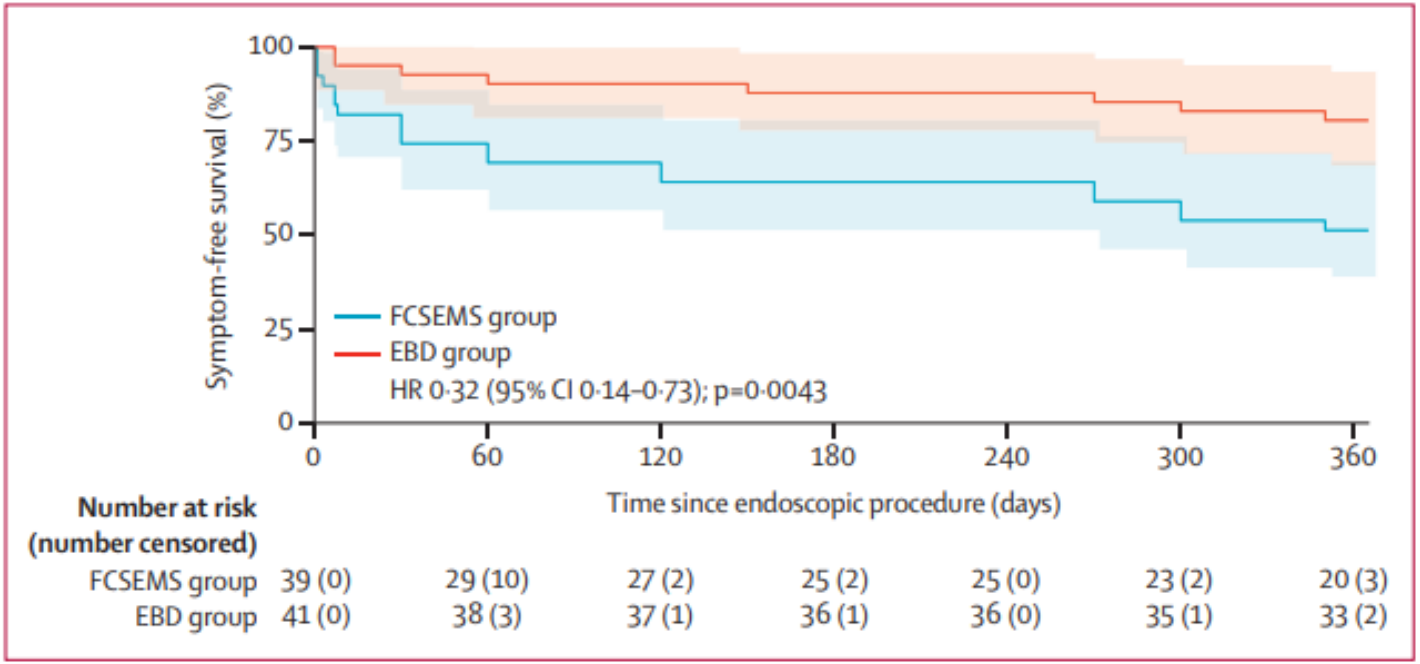
Das R, et al. Gastrointest Endosc 2020 Aug;92(2):344-352

METALLIC STENT



By courtesy of Martin Lukas

METALLIC STENTS



Loras C, et al. Lancet Gastroenterol Hepatol. 2022 Apr;7(4):332-341

Efficacy and Safety of Endoscopic Stenting for Crohn's Disease Related Strictures: A Systematic Review and Meta-analysis

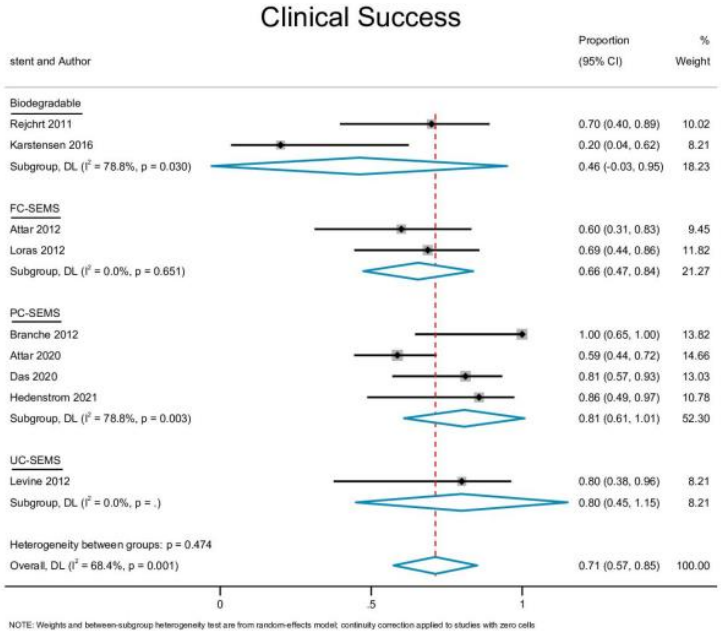


Fig. 3. Forest plot for clinical success of endoscopic stenting in Crohn's disease-related stricture with subgroup analysis based on stent type.

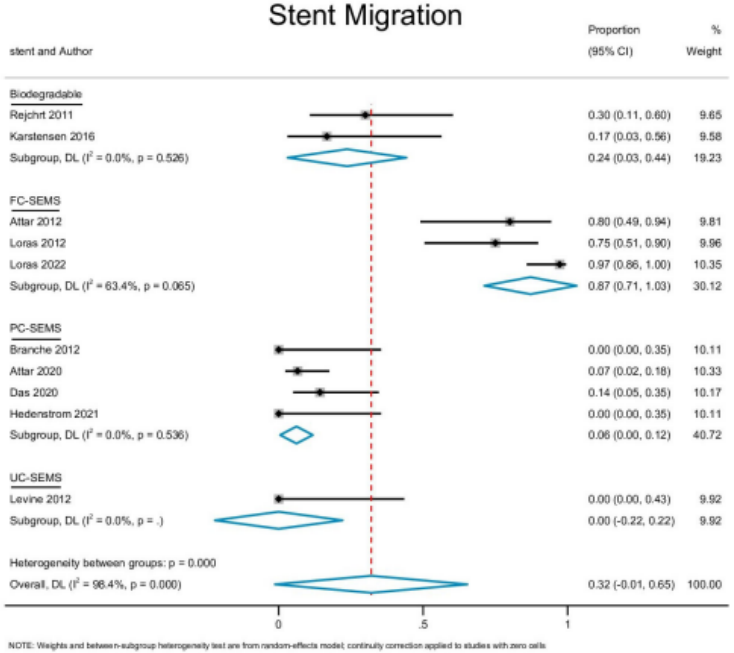


Fig. 4. Forest plot for stent migration with subgroup analysis based on the stent type.

Practical guidelines on endoscopic treatment for Crohn's disease strictures: a consensus statement from the Global Interventional Inflammatory Bowel Disease Group

Bo Shen, Gursimran Kochhar, Udayakumar Navaneethan, Francis A Farraye, David A Schwartz, Marietta Iacucci, Charles N Bernstein, Gerald Dryden, Raymond Cross, David H Bruining, Taku Kobayashi, Martin Lukas, Amandeep Shergill, Martin Bortlik, Nan Lan, Milan Lukas, Shou-Jiang Tang, Paulo Gustavo Kotze, Ravi P Kiran, Parambir S Dulai, Sandra El-Hachem, Nayantara Coelho-Prabhu, Shyam Thakkar, Ren Mao, Guodong Chen, Shengyu Zhang, Begoña González Suárez, Yago Gonzalez Lama, Mark S Silverberg, William J Sandborn

1. Pre-procedural preparation
2. Endoscopic balloon dilation
3. Other endoscopic treatment methods
4. Post-procedure considerations
5. Outcome measures
6. Procedure-associated adverse events and their management

Shen B, et al. Lancet Gastroenterol Hepatol 2020, Apr;5(4):393-405

CONCLUSION

1. Endoscopy offers effective and safe therapeutic methods for CD patients
2. Balloon dilation – gold standard, limited effect duration
3. Electroincision (stricturotomy) – short, fibrotic stricture, better control over tissue destruction
4. Stenting – PC-SEMS – most promissing, temporary, safe
5. Data collection, registry, multicentric trials – treatment optimisation