

# Endoskopisches Komplikationsmanagement

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1) Komplikationsmanagement bei der  
Endoskopie

2) Endoskopie als Komplikationsmanagement

# PERFORATION DES ÖSOPHAGUS

# PERFORATION DES ÖSOPHAGUS

3/100.000/year

morbidity of up to 40 %

mortality of up to 27%

# PERFORATION DES ÖSOPHAGUS

## SPONTANE PERFORATION

BOLUS IMPAKTATION, BOERHAAVE

## IATROGENE PERFORATION

0,03-2% vs. 5%

DILATATION, STARRE ENDOSKOPIE, EMR

**FRÜHE ERKENNUNG !!!**

# Endoscopic Management of Esophageal Perforations: Who, When, and How?

Payal Saxena, MBBS, FRACP<sup>1,2</sup>  
Mouen A. Khashab, MD<sup>2,\*</sup>

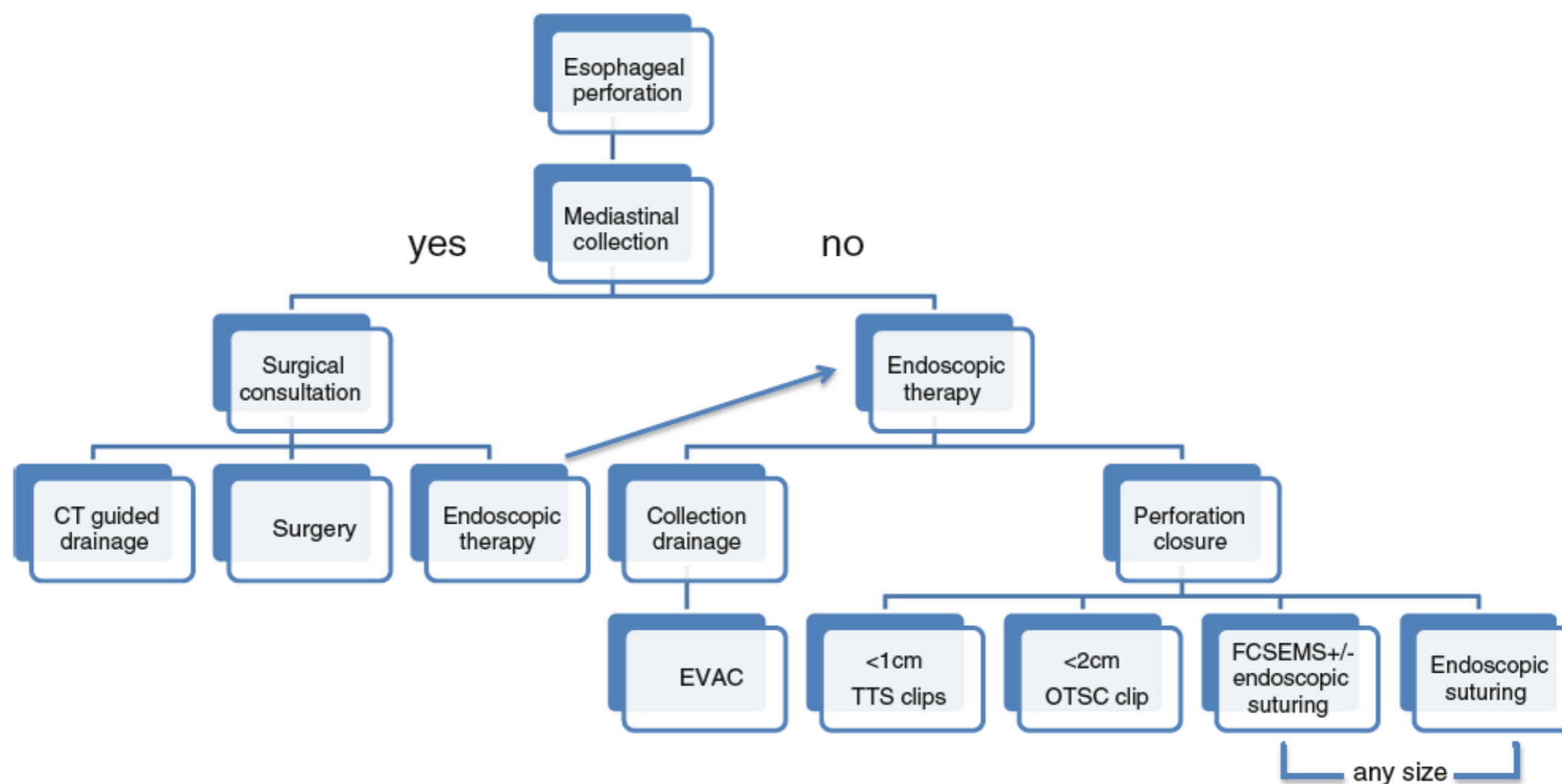
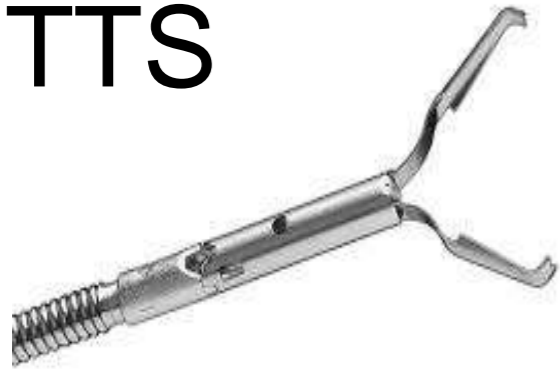


Fig. 1. Algorithm of suggested management of esophageal perforation.

latrogene Perforation – immer Operation?

# PERFORATION DES ÖSOPHAGUS

TTS





# PERFORATION DES ÖSOPHAGUS

TTS



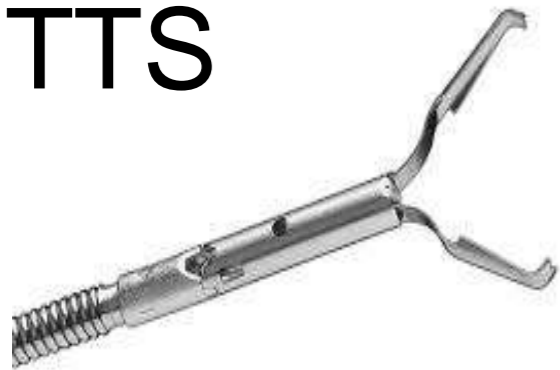
OTSC



Braun et al. 2012

# PERFORATION DES ÖSOPHAGUS

TTS

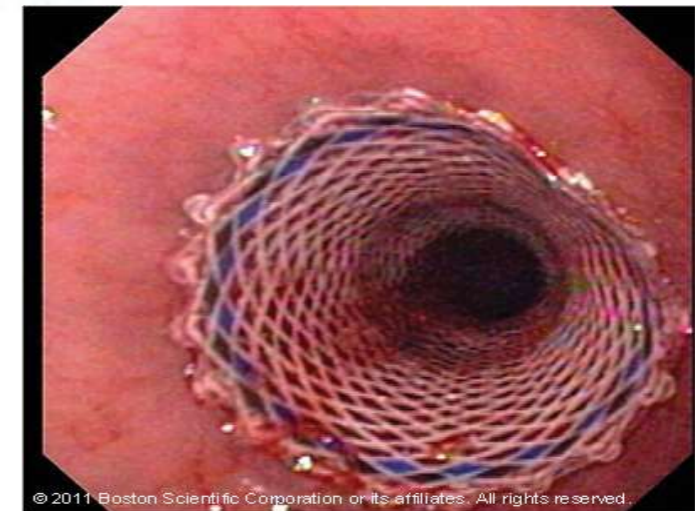
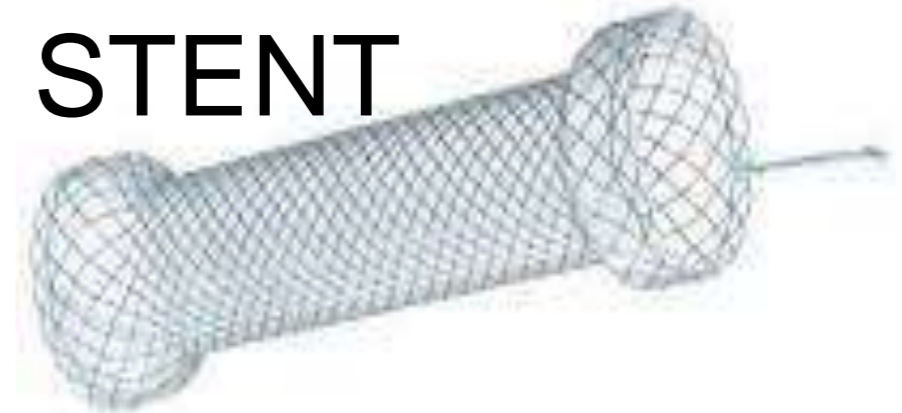


OTSC

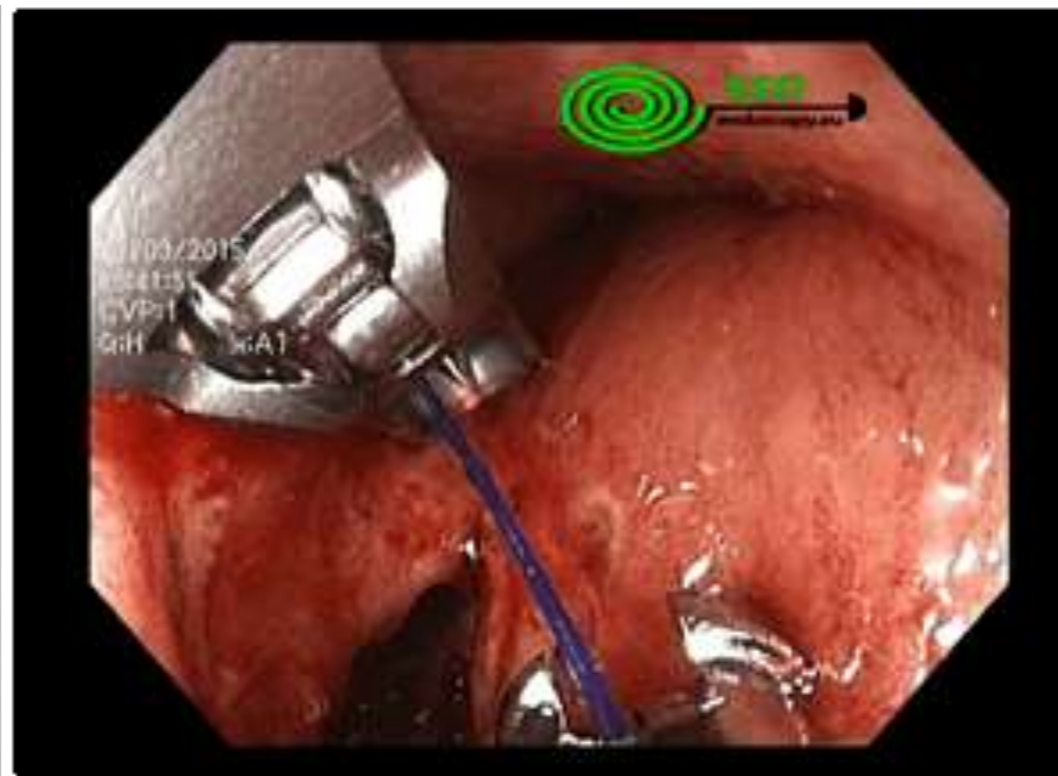


Braun et al. 2012

STENT



# PERFORATION DES ÖSOPHAGUS



# PERFORATION DES ÖSOPHAGUS

## Role of endoscopic clipping in the treatment of oesophageal perforations

György Lázár, Attila Paszt, Eszter Mán

through the scope clips (TTS)

Table 1 Published literature reporting endoscopic through-the-scope clip closure for oesophageal perforations

Ref.	Cause	Site/mm	Time to treatment	In/Tm/ Tp	Method	Nr	Clinical success	Additional treatment	Hospital stay /d	Follow-up
Wewalka et al <sup>[1]</sup>	Perforation (1)	< 10	< 24	Tm	Endoclip	1	1/1 (100%)	No	ND	ND
Rodella et al <sup>[2]</sup>	Leak (7)	10-20	> 24	ND	Endoclip	ND	2/7 (28%)	Yes	ND	9.6 mo avg.
van Bodegraven et al <sup>[3]</sup>	Fistula (1)	12	> 24	ND	Endoclip + argon beam electrocoagulation	ND	1/1 (100%)	Yes	ND	7 mo
Cipolletta et al <sup>[4]</sup>	Perforation (2)	7-8	< 24	In/Tm	Endoclip	1	1/1 (100%)	No	5	9 mo
		10	< 24	In/Tm	Endoclip	2	1/1 (100%)	No	6	14 mo
Sumamoto et al <sup>[5]</sup>	Perforation (1)	20	< 24	Tm	Endoclip	3	1/1 (100%)	No	37	ND
Abe et al <sup>[6]</sup>	Perforation (1)	5	> 24	Tm	Endoclip	ND	1/1 (100%)	Yes	36	ND
Mizobuchi et al <sup>[7]</sup>	Fistula (1)	ND	> 24	Tm	Endoclip	1	1/1 (100%)	Yes	> 31	ND
Raymer et al <sup>[8]</sup>	Fistula (2)	< 25	> 24	Tm/Tp	Endoclip	ND	3/3 (100%)	Yes	ND	ND
			> 24	Tm/Tp	Endoclip + surgery	ND	ND	Yes	ND	ND
			> 24	Tm/Tp	surgery	ND	ND	Yes	ND	ND
Shimizu et al <sup>[9]</sup>	Perforation (3)	8/10/2008	< 24	Tm	Endoclip	ND	3/3 (100%)	Yes	14	ND
Schubert et al <sup>[10]</sup>	Leak (1)	ND	> 24	Tm	Stent + endoclip	ND	1/1 (100%)	ND	ND	1 mo
Wehmann et al <sup>[11]</sup>	Perforation (4)	ND	> 24	Tm	Endoclip	ND	4/4 (100%)	Yes	9-22	12 mo
	Leak (2)	ND	> 24	Tm	Endoscopic lavage + endoclip	ND	3/3 (100%)	Yes		
Matuda et al <sup>[12]</sup>	Perforation (1)	25	< 24	In	Endoclip	ND	1/1 (100%)	No	ND	ND
Sarason et al <sup>[13]</sup>	Perforation (1)	10	> 24	Tm	Endoclip	ND	1/1 (100%)	Yes	ND	ND
Fischer et al <sup>[14]</sup>	Perforation (4)	20-40	< 24	Tm	Endoclip	2-6	4/4 (100%)	No	7-18	No
			< 24	Tm	Endoclip			No		No
			< 24	Tm	Endoclip			No		No
			< 24	Tm	Endoclip			No		No
Gerbe et al <sup>[15]</sup>	Perforation (1)	15	< 24	Tm	Endoclip	3+1	1/1 (100%)	No	7	6 mo
Qadiri et al <sup>[16]</sup>	Fistula (1)	3	> 24	Tm	Endoclip + stent	4	1/1 (100%)	Yes	63	17 mo
Luigiano et al <sup>[17]</sup>	Fistula (1)	25	> 24	Tm	Endoclip	5	1/1 (100%)	ND	ND	1 mo
					Endoloop	1				
Irekovic et al <sup>[18]</sup>	Perforation (1)	15 × 10	< 24	In/Tm	Endoloop	1	1/1 (100%)	ND	ND	4 wk
					Endoclip	4				
Jung et al <sup>[19]</sup>	Perforation (1)	25	> 24	In/Tm	Endoclip	12	1/1 (100%)	Yes	ND	2 mo
					Endoloop	1				
Rokoun et al <sup>[20]</sup>	Perforation (1)	5-7	< 24	Tp	Endoclip	3	1/1 (100%)	Yes	14	6 mo
Coda et al <sup>[21]</sup>	Perforation (1)	20 (distal)	< 24	Tm	Endoclip	6	1/1 (100%)	Yes	15	6 mo
Sato et al <sup>[22]</sup>	Perforation (1)	ND	< 24	In/Tm	Endoclip	ND	1/1 (100%)	No	ND	ND
Biancasti et al <sup>[23]</sup>	Perforation (4)	8 (median)	< 24	Tm	Endoclip	ND	3/4 (75%)	Yes	32 (median)	No
Huang et al <sup>[24]</sup>	Perforation (4)	ND	< 24	ND	Endoclip	2	4/4 (100%)	ND	ND	ND

n= 1(-7)

100% Erfolg (n=49) bei akuten Perforationen bei Läsionen ≤ 10 mm

# PERFORATION DES ÖSOPHAGUS

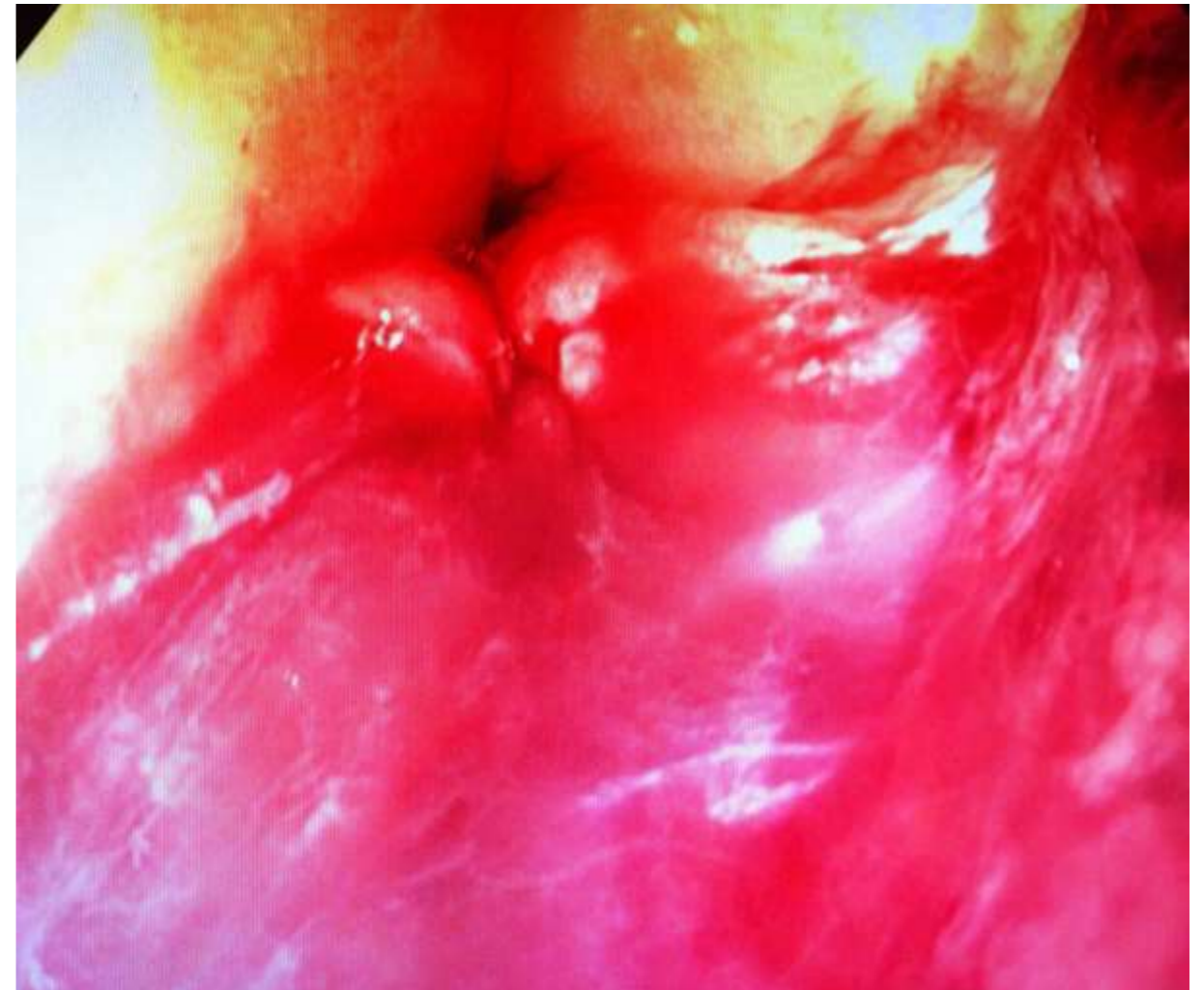
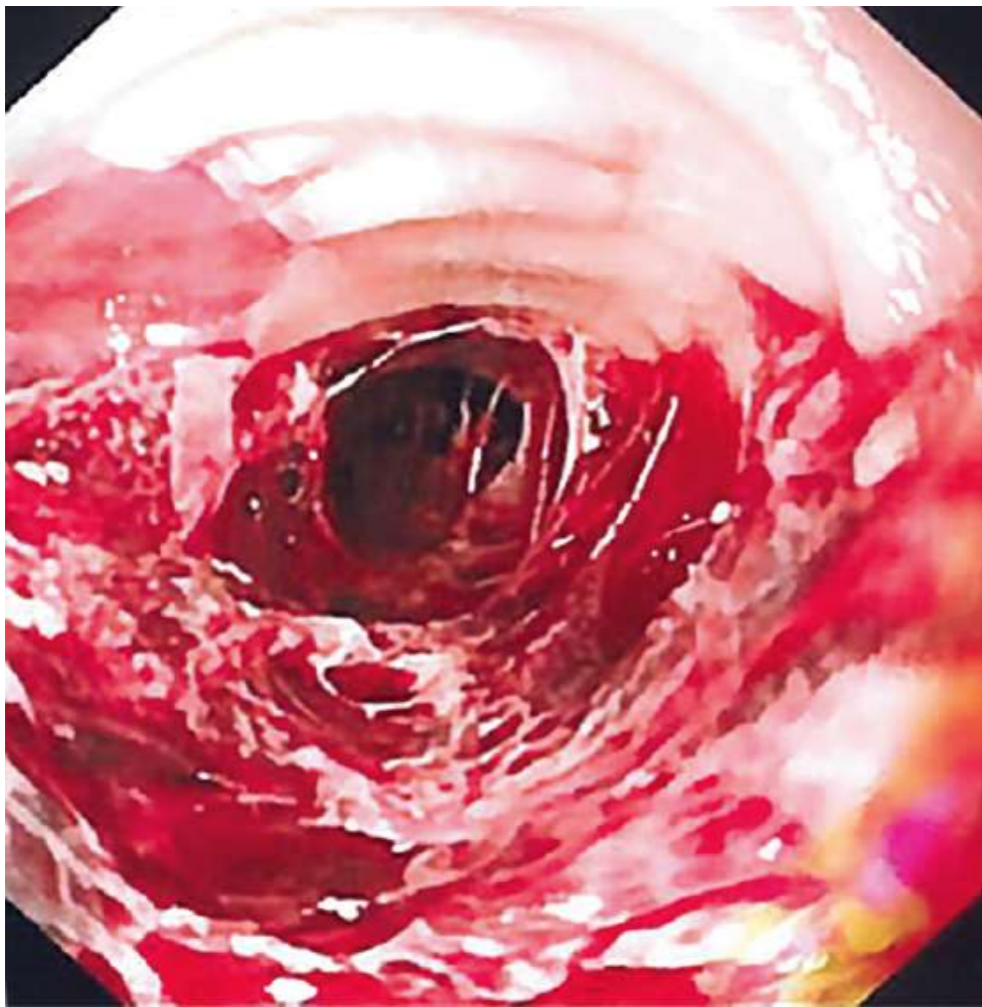
OTSC

**Table 2 Synopsis of studies reporting over-the-scope clip closure of gastrointestinal perforations *n* (%)**

Ref.	Year	<i>n</i>	Overall success	Postoperative	Acute endoscopic and interventional perforations	Other chronic leaks and fistulas	Upper GI	Colorectal	Complications
Overall		301	220/301 (73)	81/120 (68)	95/106 (90) <sup>b</sup>	32/54 (59)	135/186 (73)	73/94 (78)	4/301 (1.3)

90% Erfolg bei akuten Perforationen bei Läsionen ≤ 20 mm

# PERFORATION DES ÖSOPHAGUS



ElAdawy M, et al. 2015

# PERFORATION DES ÖSOPHAGUS

ORIGINAL ARTICLE

Clinical Outcomes, Efficacy, and Adverse Events  
in Patients Undergoing Esophageal Stent  
Placement for Benign Indications

*A Large Multicenter Study*

*Takayuki Suzuki, MD,\* Ali Siddiqui, MD,† Linda J. Taylor,\*  
Kristen Cox, RN, MS,\* Raza A. Hasan, MD,† Sobia N. Laique, MD,†  
Arun Mathew, MD,† Piotr Wrobel, MD,†  
and Douglas G. Adler, MD, FACP, AGAF, FASGE\**

*(J Clin Gastroenterol 2016;50:373–378)*

Stent

**TABLE 2.** Treatment Success Rate of Esophageal Stents in Patients With Benign Esophageal Diseases

Indication (n = 70)	Treatment Success Rate [n/N (%)]
Benign refractory strictures	12/36 (33.3)
Anastomotic strictures	3/13 (23.1)
Perforations	10/10 (100)
Fistulae	10/14 (71.4)
Anastomotic leaks	4/5 (80)

100% Erfolg bei akuten Perforationen

# PERFORATION DES ÖSOPHAGUS

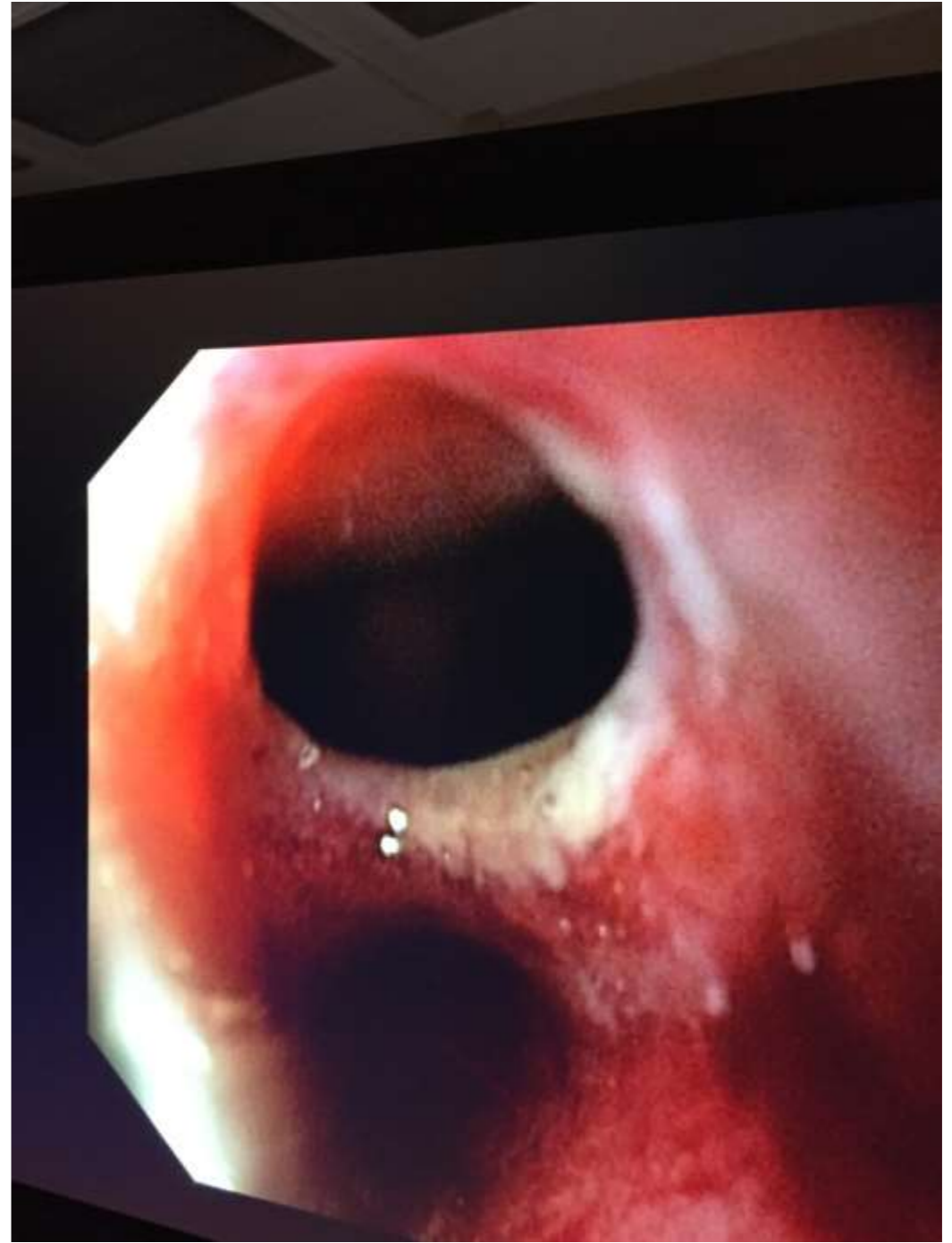
Vorgehen bei Perforation und stabilen Patienten:

Laparoskopie: Darstellen der Perforation + Übernähung

Endoskopie: Stentimplantation

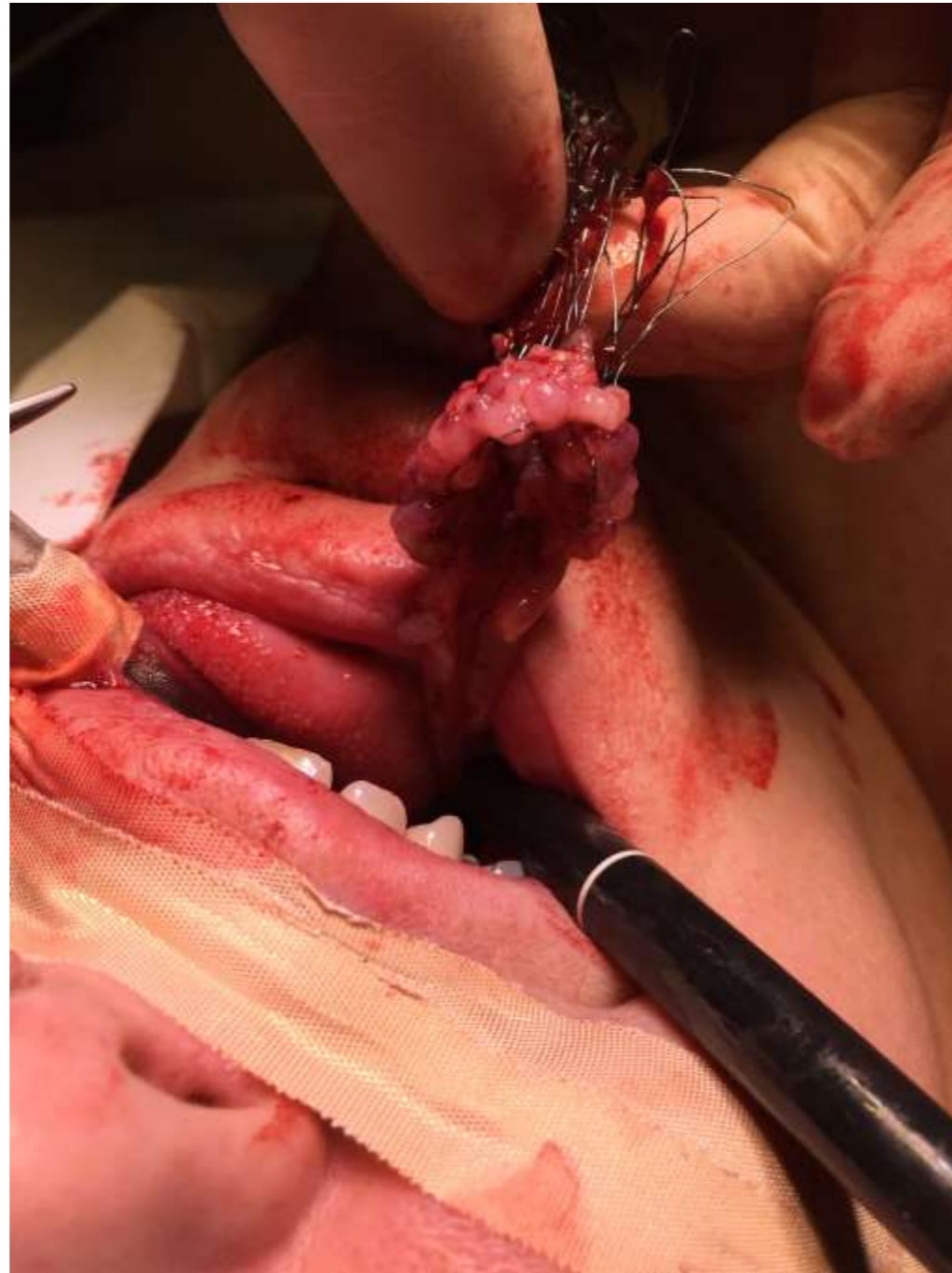
Laparoskopie: Nahtfixation des Stents und med. Drainage (+ B







fully covered? Zeitraum?

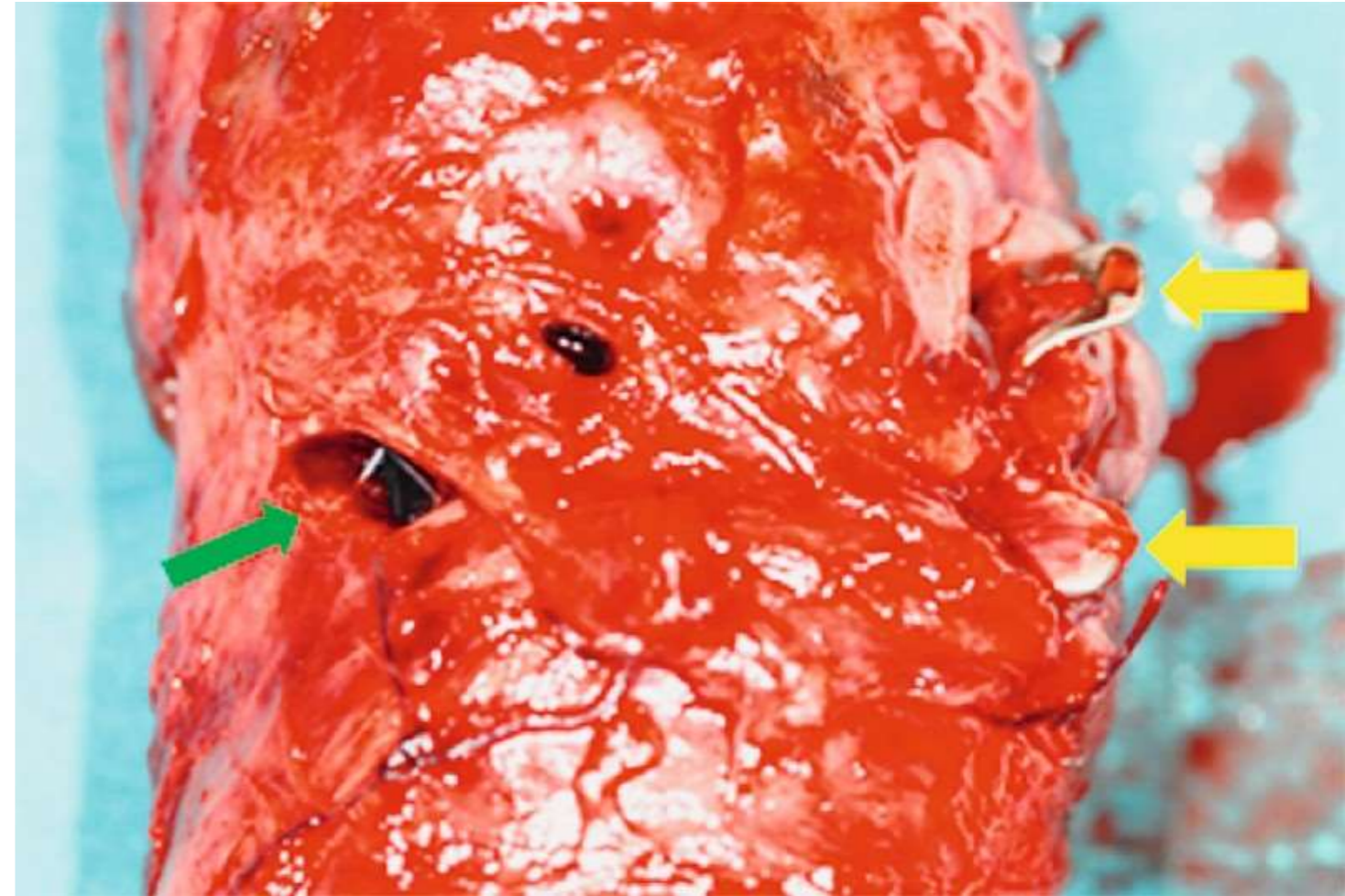


# Fatal aortic hemorrhage after over-the-scope clipping and subsequent esophageal stenting for sealing of iatrogenic esophageal perforation

Endoscopy 2015; 47: E280–E281

**Joerg Lindenmann, Alfred Maier,  
Nicole Fink-Neuboeck,  
Freyja Maria Smolle-Juettner**

Division of Thoracic and Hyperbaric  
Surgery, Department of Surgery,  
Medical University Graz, Austria



# GI-TRAKT PERFORATION

- rasches Erkennen der Perforation
- suffizienten Kenntnisse in der interventionellen Endoskopie (OTS-Clips, etc.)
- Endoskopie unter CO<sub>2</sub>-Insufflation.

# ANASTOMOSENLEAK DES ÖSOPHAGUS

# Anastomoseninsuffizienz

1. Inzidenz an Anastomoseninsuffizienzen bei Ö. -  
Resektionen

4 bis 38 %

2. Mortalität bei Anastomoseninsuffizienz nach Ö. -  
Resektionen

bis 40 %

Lerut T, et al. Dig Surg 2002;19:92-8

Junemann- Ramirez M, et al. Eur J Cardiothoracic Surg 2005;27:3-7

Alanezi K, et al. Ann Thorac Cardiovasc Surg 2004;10:71-5

# Prophylaxe

## **intraoperatives Anastomosen Drain**

- + frühes Erkennen (Blauschluck)
- keine Verringerung der Insuffizienzrate

## **vascularized tissue reinforcement (omental flap)**

- + Reduktion der Rate an Insuffizienzen

Tang H, et al. J Gastrointest Surg 2012;16:722-7

Bhat MA, et al. Ann Thorac Surg 2006;82:1857-62

Yuan Y, et al. Cochrane database Syst Rev 2012;11:CD008446.



# Mortalität nach Zeitperiode

**TABLE 2.** Intrathoracic Leak Patients: Management Strategies and Outcomes by Era

Characteristic	1970–1986, n = 7	1987–2004, n = 30	<i>P</i> Value*
Time to leak (median days)	9.0	9.5	0.73
Leak diagnosis			0.42
Barium swallow only (subclinical)	2 (29%)		
Clinical diagnosis	5 (71%)	15 (50%)	
Extent of leak			0.67
Contained	2 (29%)	14 (47%)	
Uncontained	5 (71%)	16 (53%)	
IV antibiotics	5 (71%)	22 (73%)	1.0
Nutrition strategy			0.16
Enteral	5 (71%)	28 (93%)	
No enteral nutrition	2 (29%)	2 (7%)	
Leak management			0.25
Reoperation	1 (14%)	12 (40%)	
Percutaneous drainage only	4 (57%)	8 (27%)	
Observation only	2 (29%)	10 (33%)	
Use of reinforcing tissue flap to repair leak at reoperation	0 (0%)	7 (58%)	0.46
Length of stay (median days)	28	28	0.55
Leak-associated mortality <sup>†</sup>	3 (43%)	1 (3.3%)	0.016
Mortality due to leak in all patients <sup>‡</sup>	3/145 (2.1%)	1/476 (0.2%)	0.04

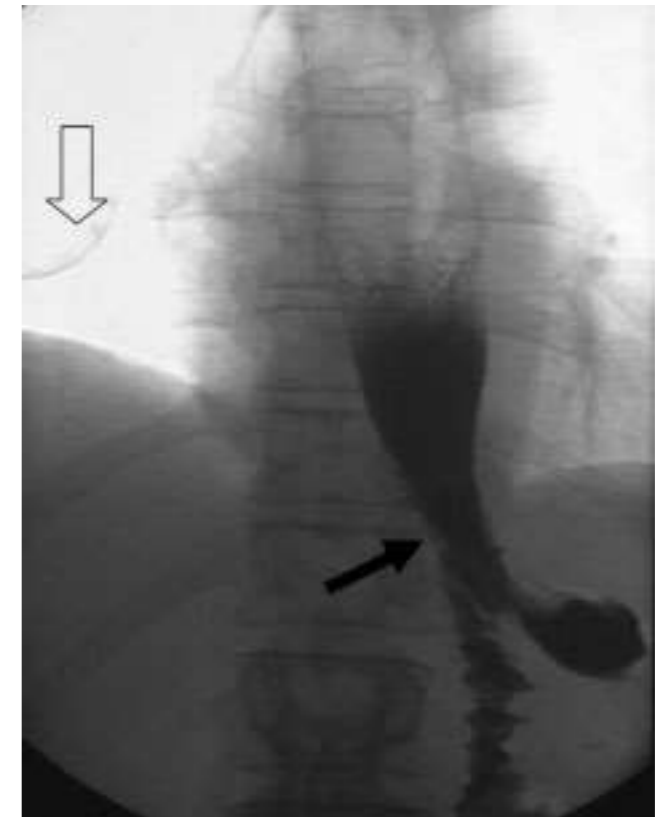
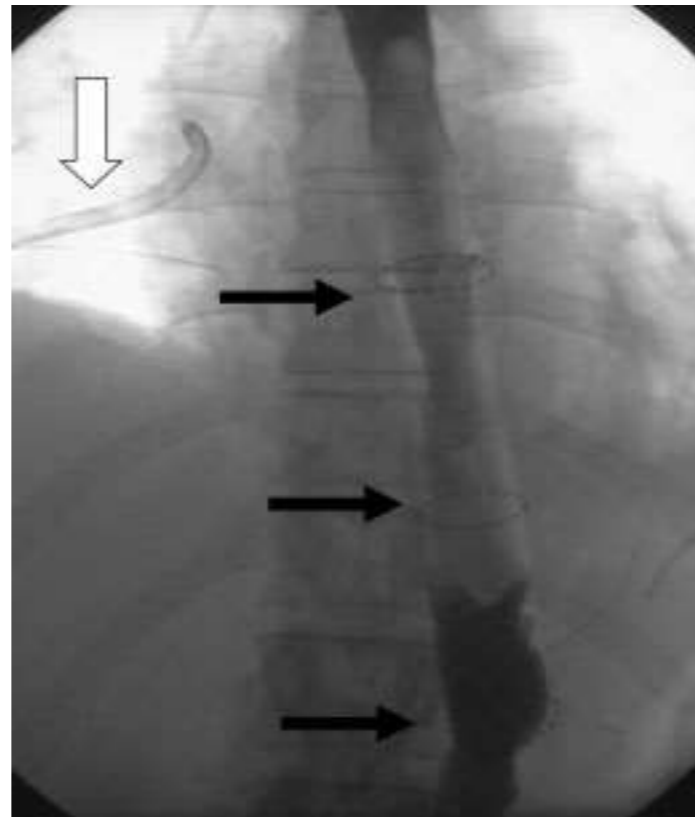
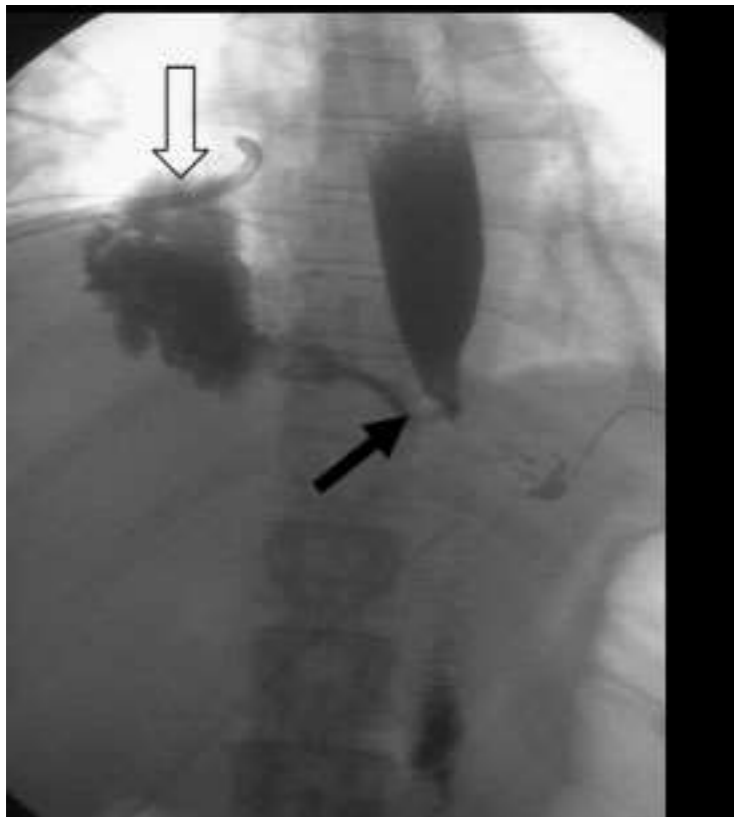
\**P* value < 0.05 considered significant.

<sup>†</sup>Perioperative mortality in patients with an intrathoracic leak.

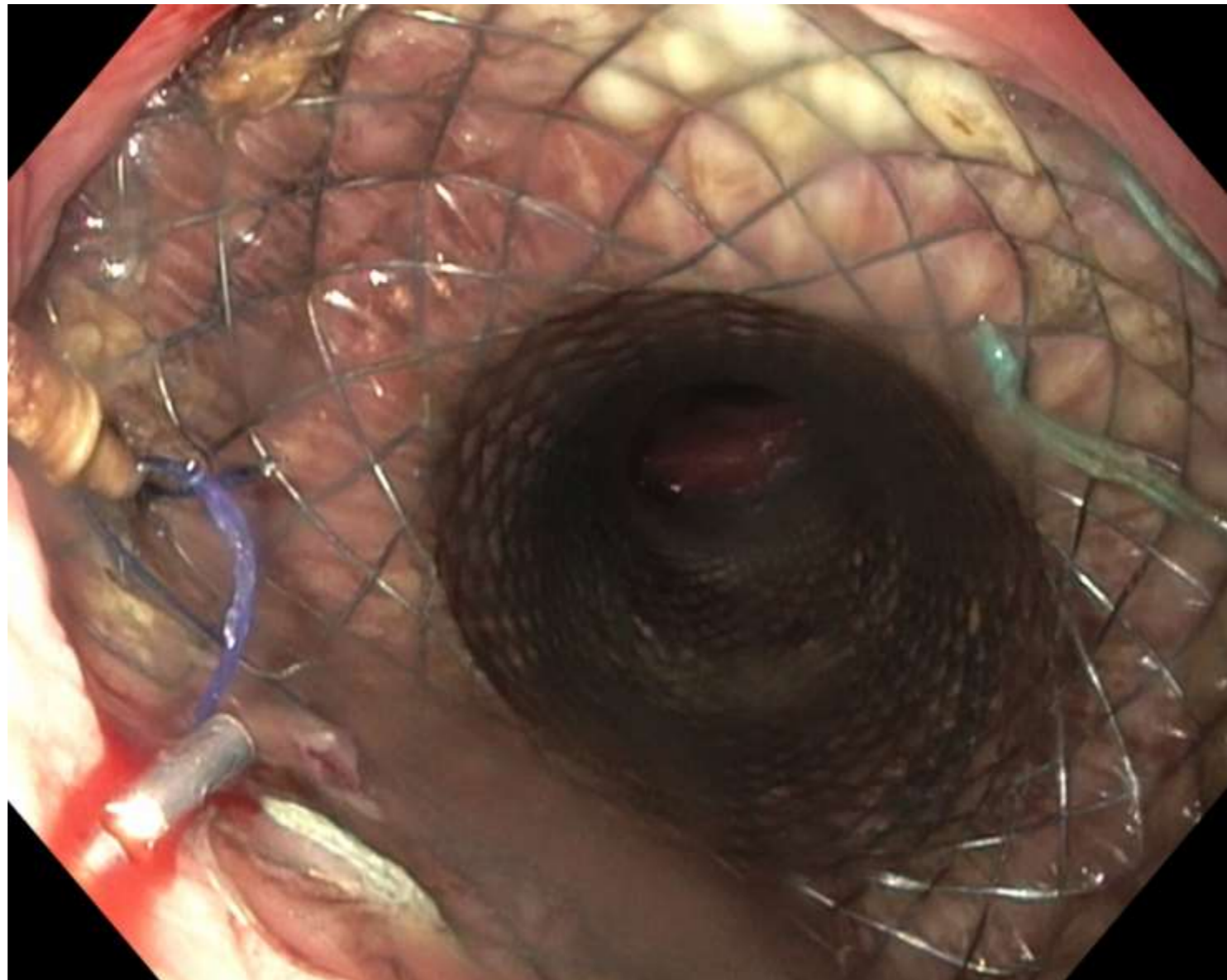
<sup>‡</sup>Overall mortality due to intrathoracic leaks of all patients undergoing transthoracic esophagectomies.

**43 % vs. 3.3 %**

# Temporäre Stent Implantation



# Temporäre Stent Implantation



# Temporäre Stent Implantation

**Table 2** Mortality for intrathoracic anastomotic leaks

<b>Variables</b>	<b>All</b>	<b>Stent</b>	<b>Re-exploration</b>
Total number of patients	38	22	15
Fatal outcome	12 (31%)	5 (22%)	6 (40%)

Odds ratio: 2.22

95% confidence interval: 0.43–12.16

$p=0.30$

# Temporäre Stent Implantation

**Table 3** Analysis of outcomes after stent placement for management of anastomotic leak after esophagectomy

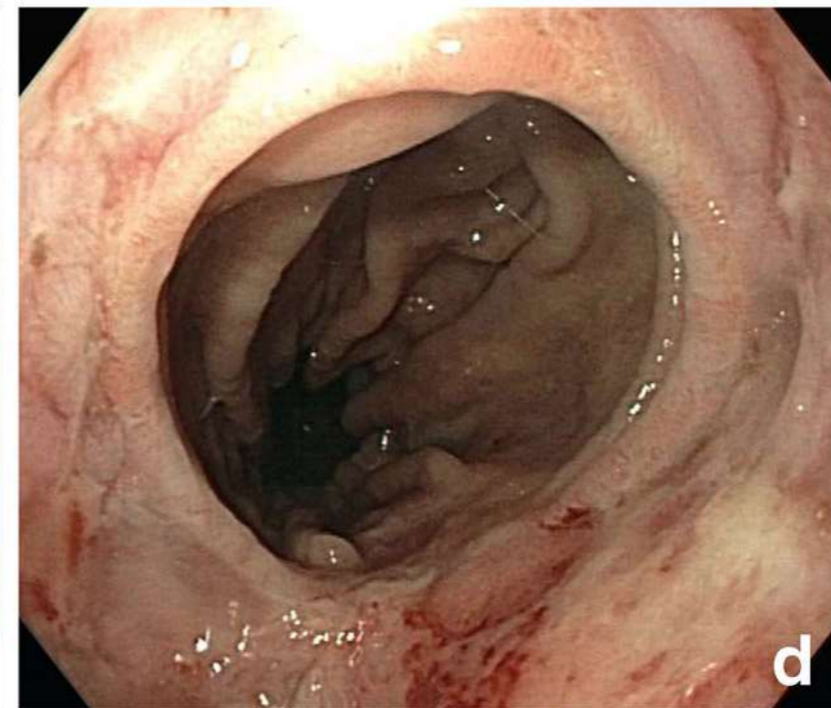
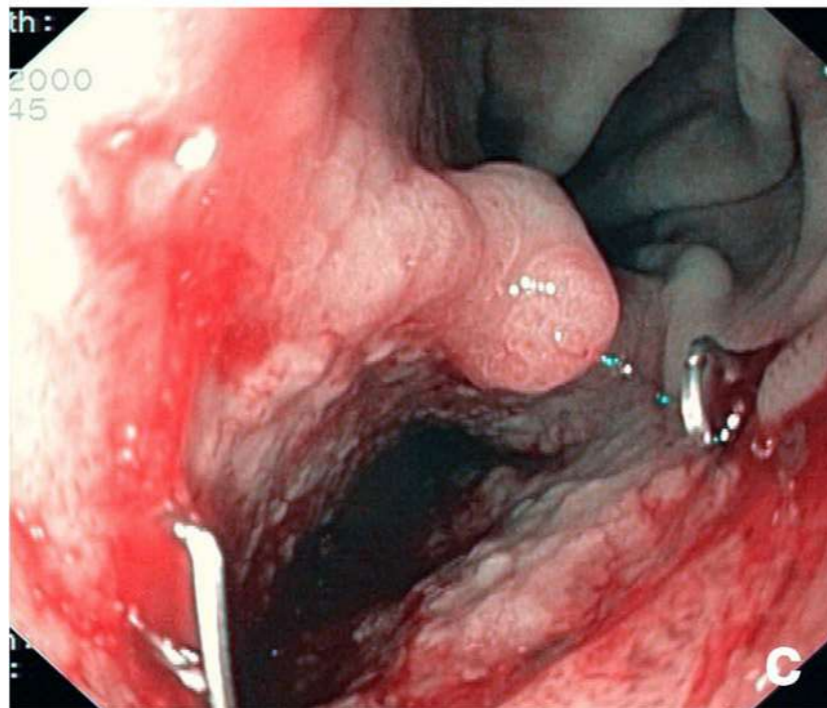
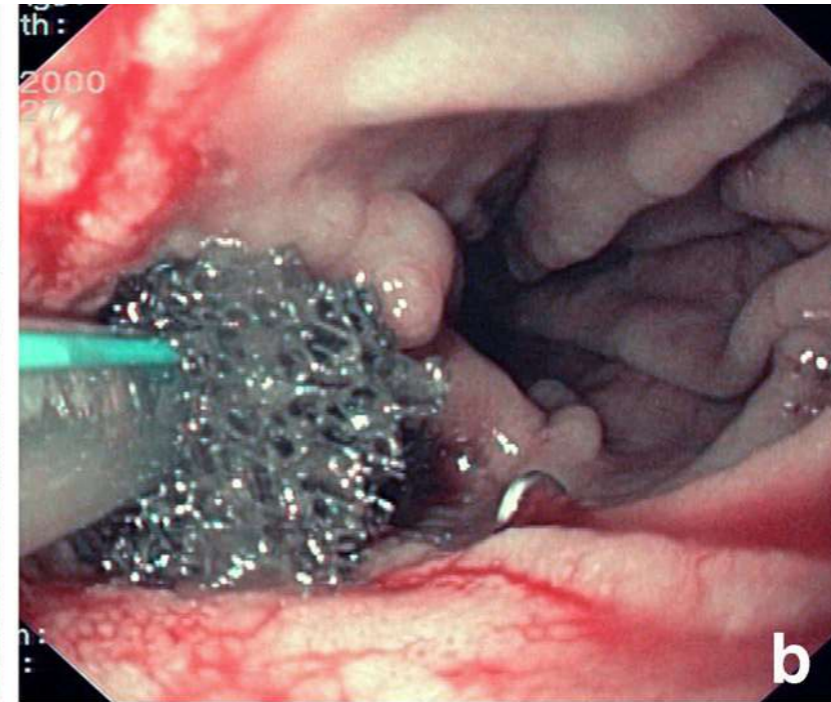
Author	Year	Type of stent	Number of patients	Anastomotic technique	Heal success, <i>n</i> (%)	Mortality, <i>n</i> (%)
Doniec et al <sup>34</sup>	2003	pcSEMS	10	Not reported	8 (80)	1 (10)
Evrard et al <sup>35</sup>	2004	SEPS	4	Not reported	4 (100)	0
Gelbmann et al <sup>25</sup>	2004	SEPS	5	Not reported	3 (60)	2 (40)
Hünerbein et al <sup>36</sup>	2004	SEPS	9	Stapled	9 (100)	0
Langer et al <sup>26</sup>	2005	SEPS	24	Not reported	16 (67)	3 (13)
Schubert et al <sup>37</sup>	2005	SEPS	12	Circular stapled	11 (92)	0
Han et al <sup>22</sup>	2006	cSEMS	8	Not reported	6 (75)	2 (25)
Kauer et al <sup>38</sup>	2008	cSEMS	10	Not reported	7 (70)	2 (20)
Kim et al <sup>21</sup>	2008	MSBT	4	Not reported	4 (100)	0
Pennathur et al <sup>20</sup>	2008	SEPS	5	Not reported	2 (40)	Not reported
Tuebergen et al <sup>39</sup>	2008	cSEMS	19	Not reported	14 (74)	1 (5)
Zisis et al <sup>40</sup>	2008	cSEMS	9	Not reported	7 (78)	2 (22)
Kotzampassakis et al <sup>24</sup>	2009	Not reported	3	Not reported	3 (100)	0
Leers et al <sup>41</sup>	2009	cSEMS	15	Not reported	13 (87)	1 (7)
Bona et al <sup>42</sup>	2010	cSEMS	3	Not reported	2 (67)	0
Dai et al <sup>30</sup>	2011	fcSEPS	18	Not reported	16 (89)	2 (11)
David et al <sup>28</sup>	2011	cSEMS	5	Not reported	4 (80)	1 (20)
D'Cunha et al <sup>23</sup>	2011	cSEMS or SEPS	22	Not reported	13 (59)	4 (18)
Feith et al <sup>27</sup>	2011	fcSEMS	115	Not reported	81 (70)	10 (9)
Freeman et al <sup>31</sup>	2011	SEPS and cSEMS	17	Not reported	16 (94)	0
Nguyen et al <sup>43</sup>	2011	cSEMS	9	Not reported	9 (100)	0
Schweigert et al <sup>19</sup>	2013	cSEMS	22	Stapled	17 (77)	5 (23)
Brangewitz et al <sup>29</sup>	2013	cSEMS or SEPS	39	Not reported	21 (54)	11 (28)
Leenders et al <sup>44</sup>	2013	SEMS-mix	15	Handsewn	11 (73)	5 (33)
Schniewind et al <sup>45</sup>	2013	SEMS and SEPS	12	Not reported	2 (17)	10 (83)
<b>Total</b>			<b>414</b>		<b>299 (72)</b>	<b>62 (15)</b>

Heal success means that the stent is reported to heal the leak and not just seal with radiograph. The seal rate will always be higher than the actual heal rate.

bd = biodegradable stent; cSEMS = covered self-expanding metal stent; fcSEMS = fully covered self-expanding metal stent; MSBT = Montgomery salivary bypass tube; pcSEMS = partially covered self-expanding metal stent; SEPS = self-expanding plastic stent.

**n=414 heal success 72 % mort. 15%**

# Endoskopische Vacuum Therapie



# Endoskopische Vacuum Therapie

**Table 2** Outcome of endoscopic therapy

		Stent	Endoscopic vacuum therapy	<i>p</i> value
By final therapy (seven patients switched from stent to endoscopic vacuum therapy)	Success	14/23 (60.9 %)	19/22 (86.4 %)	0.091
	Mortality	6/23 (26.1 %)	3/22 (13.6 %)	0.459
By initial therapy	Success	19/30 (63.3 %)	14/15 (93.3 %)	0.038
	Mortality	8/30 (26.7 %)	1/15 (6.7 %)	0.234

**63.3% versus 93.3%**

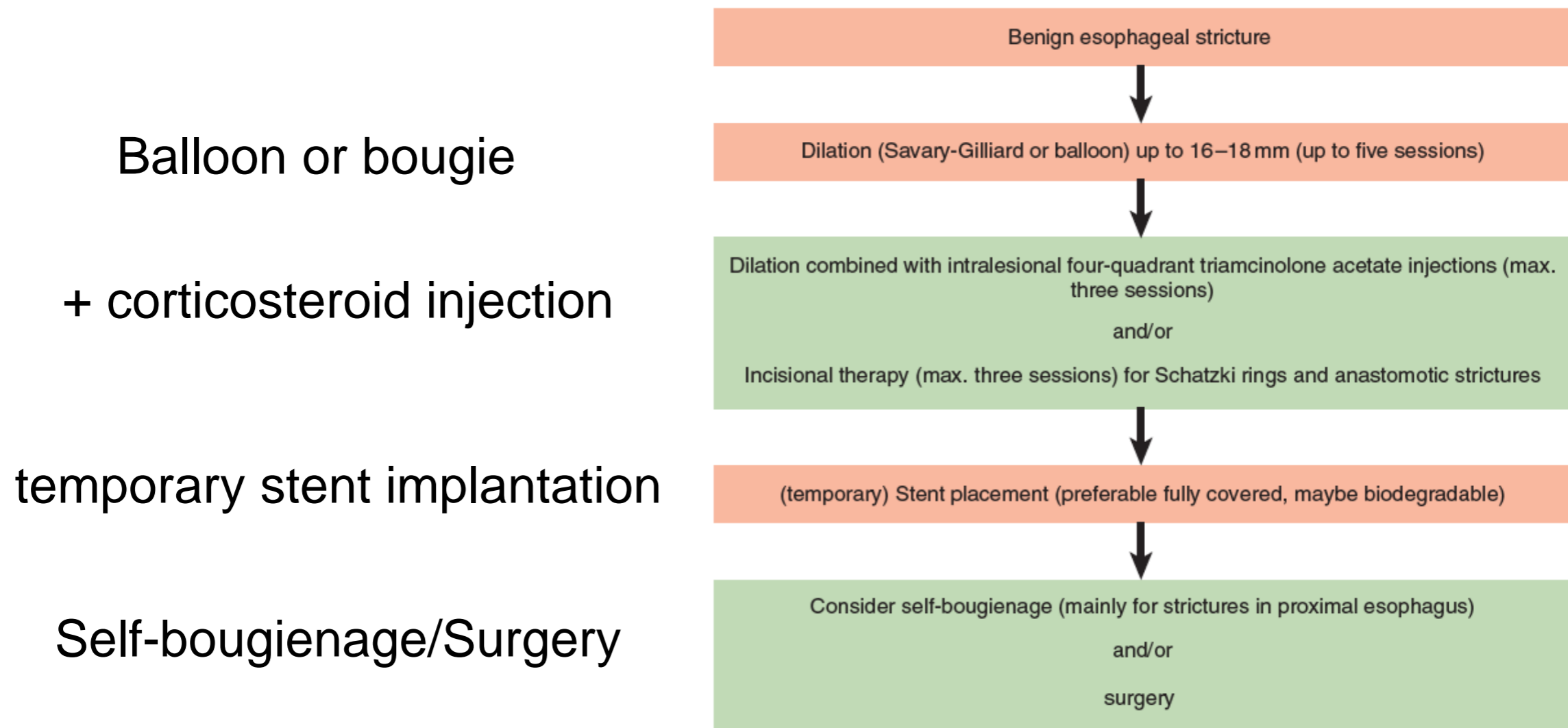
# STENOSEN DES ÖSOPHAGUS



# Endoscopic Management of Difficult or Recurrent Esophageal Strictures

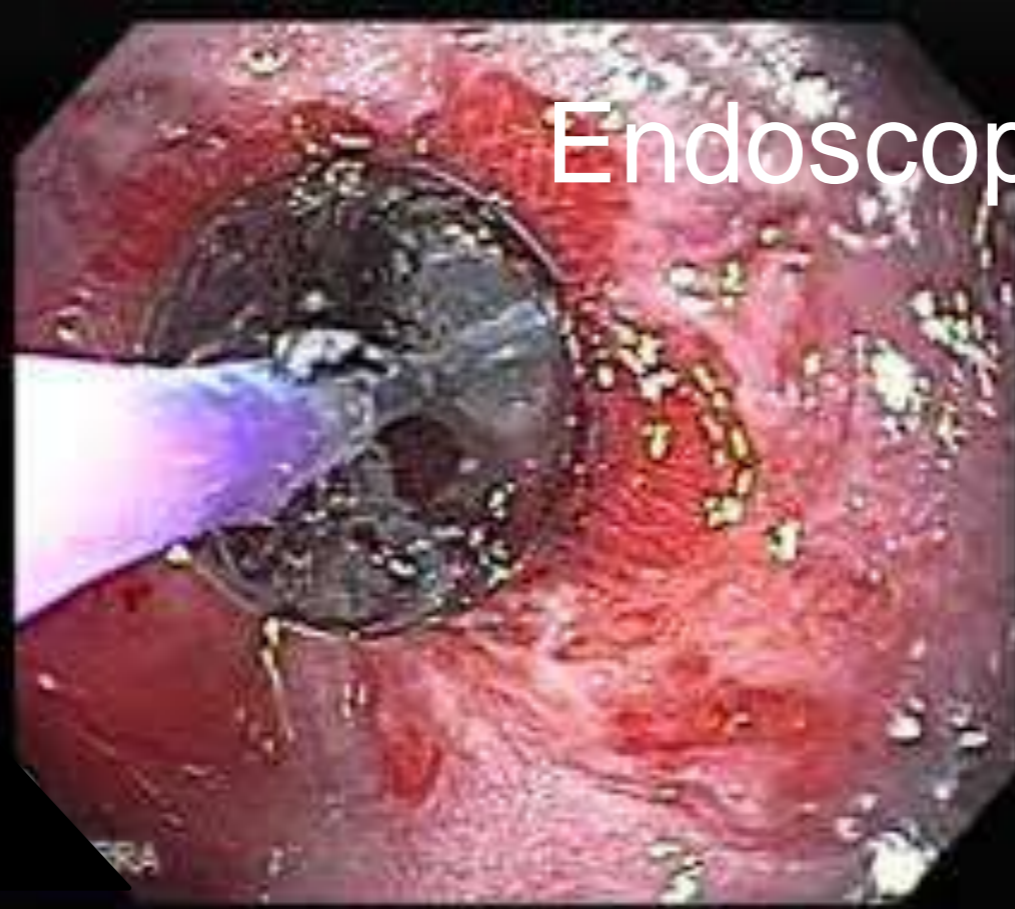
Laetitia R.H. de Wijkerslooth, MD<sup>1</sup>, Frank P. Vleggaar, MD, PhD<sup>1</sup> and Peter D. Siersema, MD, PhD, FACG, FASGE<sup>1</sup>

*Am J Gastroenterol* 2011; 106:2080–2091;



**Figure 6.** Management of benign esophageal strictures.

# Endoscopic balloon dilation

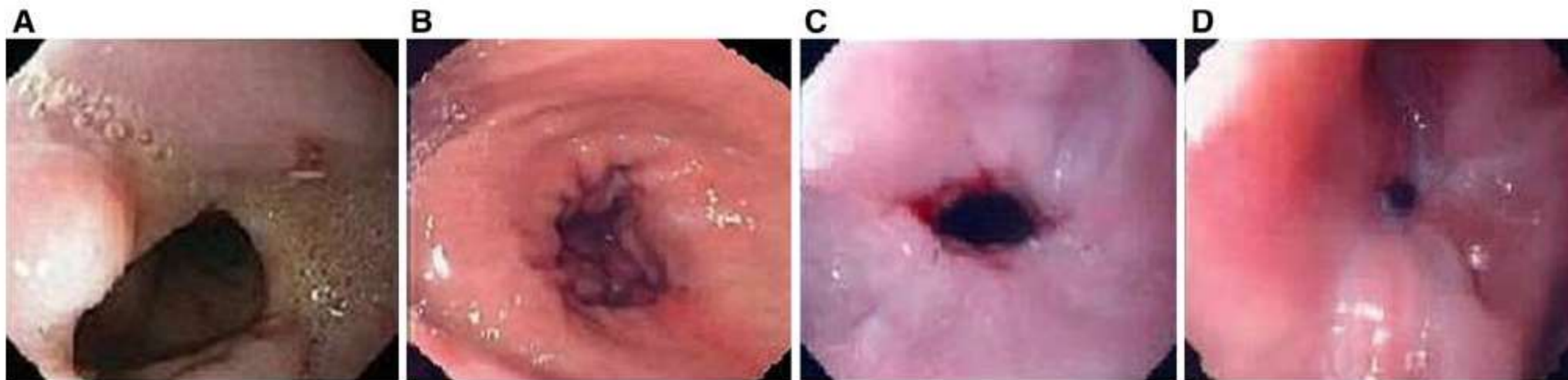


# Endoscopic bougie

## Endoscopic and symptomatic assessment of anastomotic strictures following esophagectomy and cervical esophagogastrostomy

V. A. Williams · T. J. Watson · S. Zhovtis · O. Gellersen · D. Raymond ·  
C. Jones · J. H. Peters

# Dilatation bei benignen Ösophagusstenosen



# Perforation during Esophageal Dilatation: A 10-Year Experience

Alexander F. Hagel<sup>1</sup>, Andreas Naegel<sup>1</sup>, Wolfgang Dauth<sup>2</sup>, Klaus Matzel<sup>3</sup>, Hermann P. Kessler<sup>3</sup>, Michael J. Farnbacher<sup>4</sup>,  
Werner M. Hohenberger<sup>3</sup>, Markus F. Neurath<sup>1</sup>, Martin Raithel<sup>1</sup>

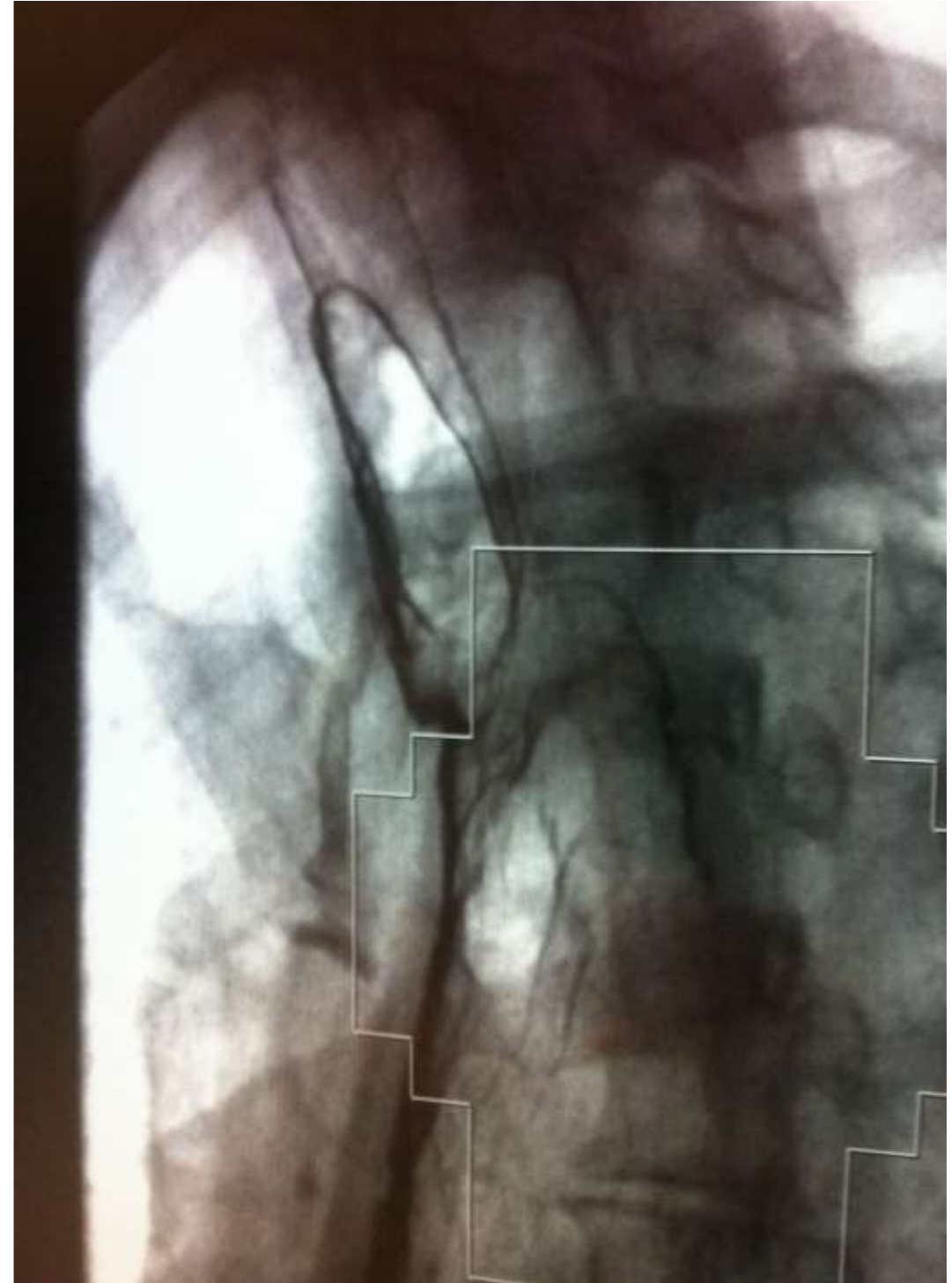
J Gastrointestin Liver Dis, December 2013 Vol. 22 No 4: 385-389

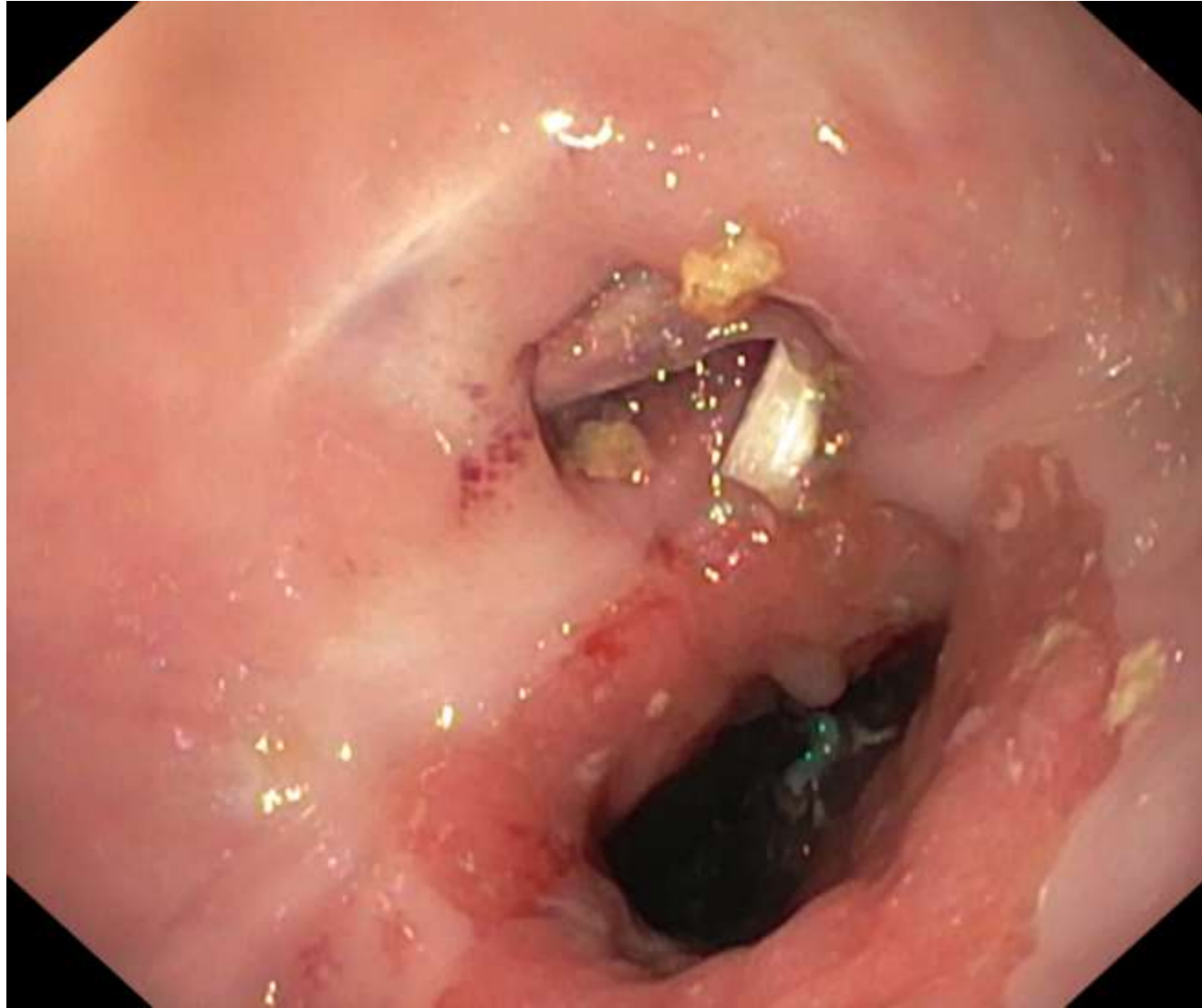
**Table I.** Summary of dilatation procedures and perforation rates, subdivided in underlying diseases and procedures.

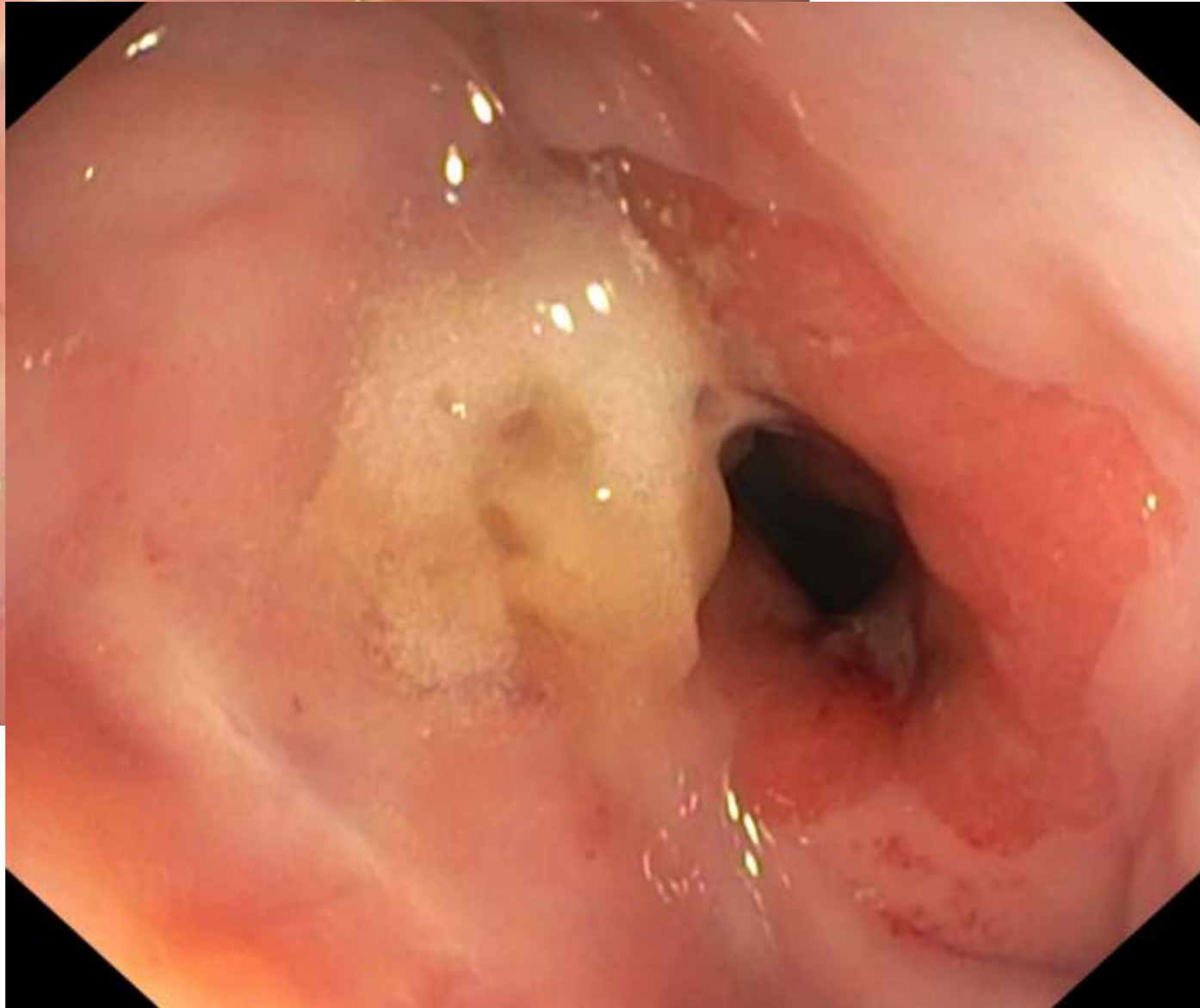
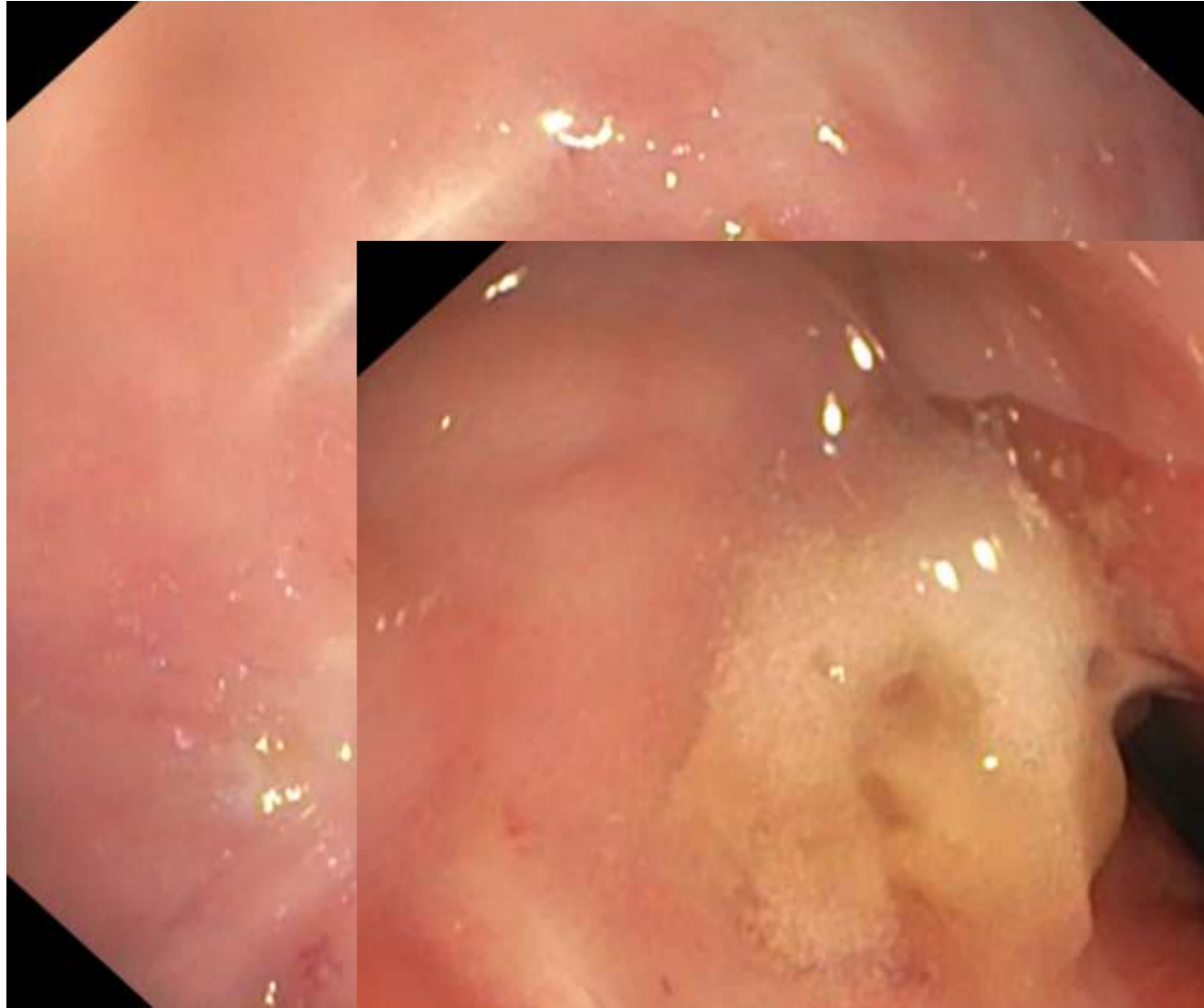
Esophageal diagnosis	Balloon dilatation			Bougination		
	Pat.	Ses.	Perf.	Pat.	Ses.	Perf.
Post-surgical stricture	17	35		22	81	
Malignant stricture	18	44		161	531	5 (0.9%)
Peptic stricture	15	51		23	92	
Post-interventional stricture	5	14		6	11	
Post-radiotherapy stricture	3	39		62	467	2 (0.4%)
External compression	3	4		7	7	
Schatzki ring	4	6		4	6	
Chemical burn	1	13		7	63	1 (1.6%)
Epidermolysis bullosa	1	3		1	6	
Eosinophilic esophagitis	1	2		3	5	
Pseudodiverticulosis				4	17	
<b>Total</b>	<b>68</b>	<b>211</b>	<b>0</b>	<b>300</b>	<b>1286</b>	<b>8 (0.62%)</b>

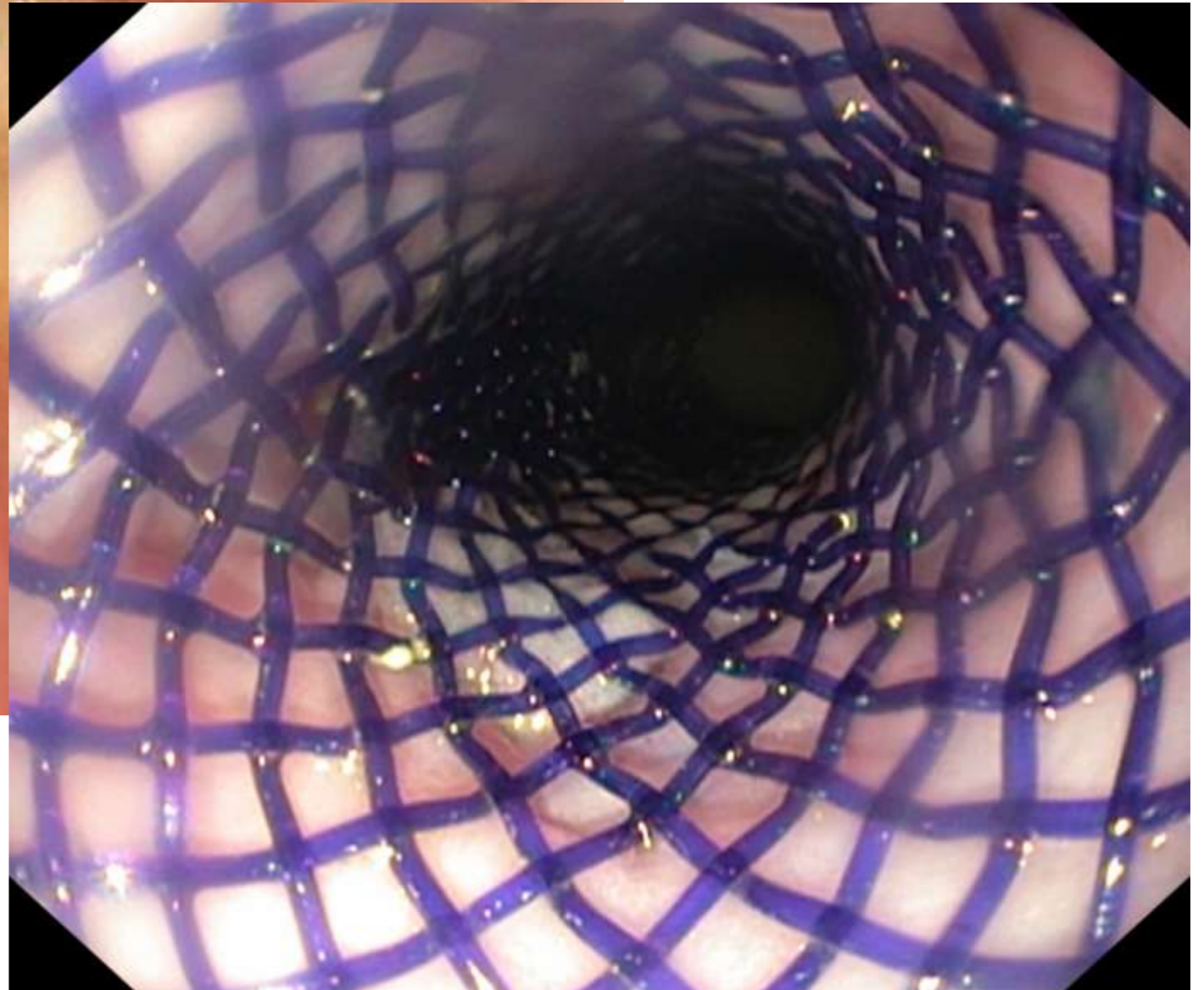
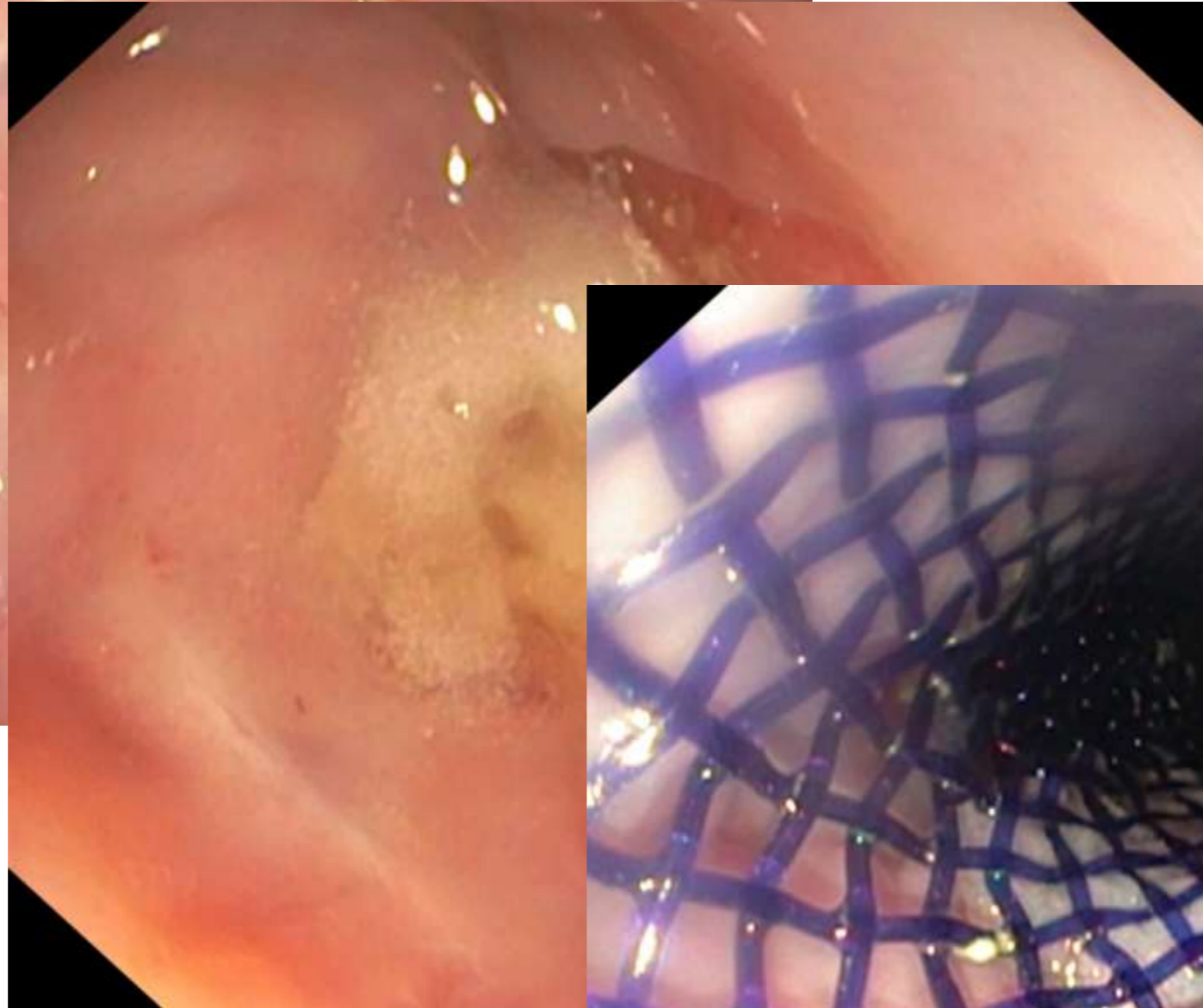
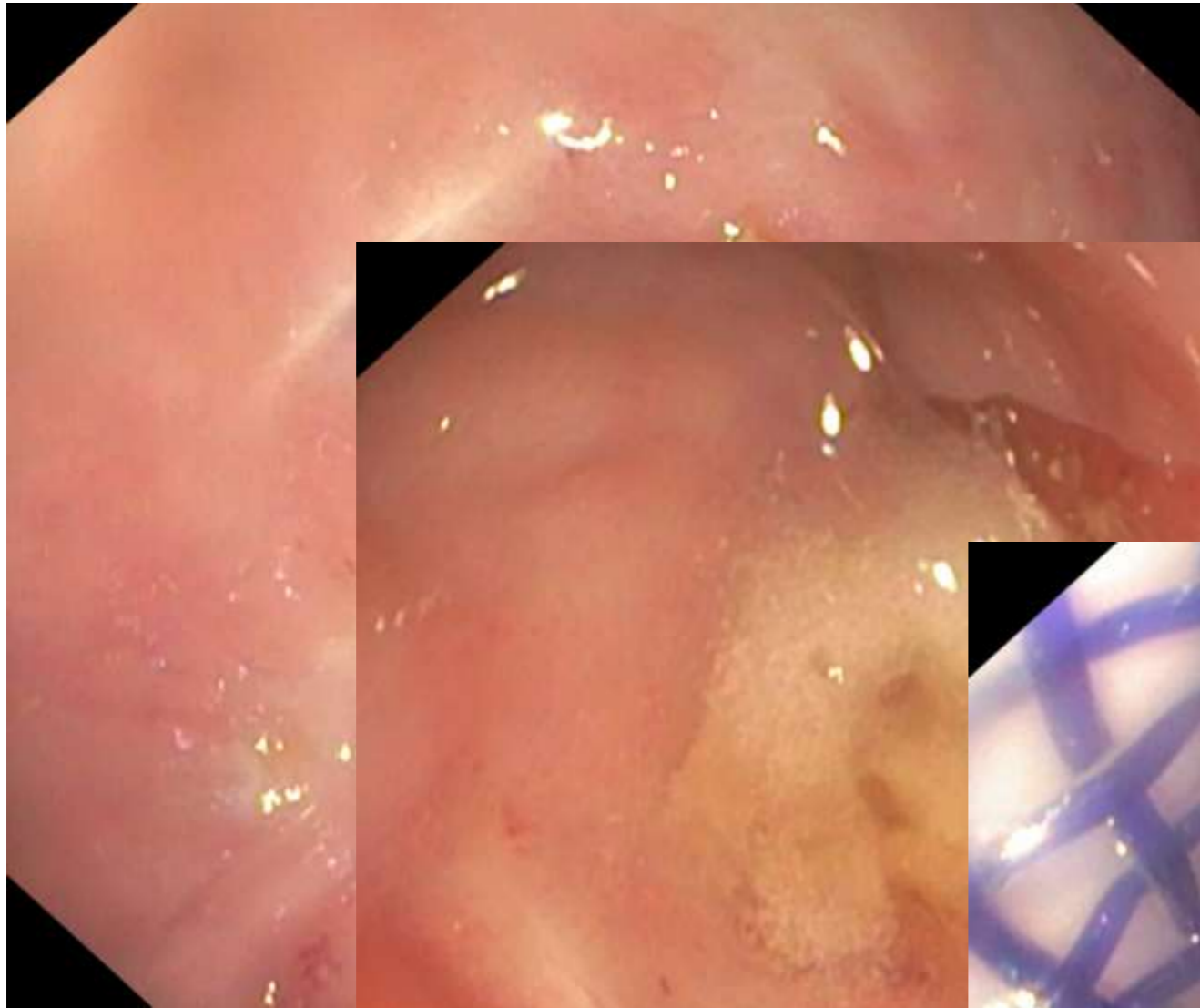
0,53% per procedure, 2,15% per patient

# ÖSOPHAGOBRONCHIALE FISTEL

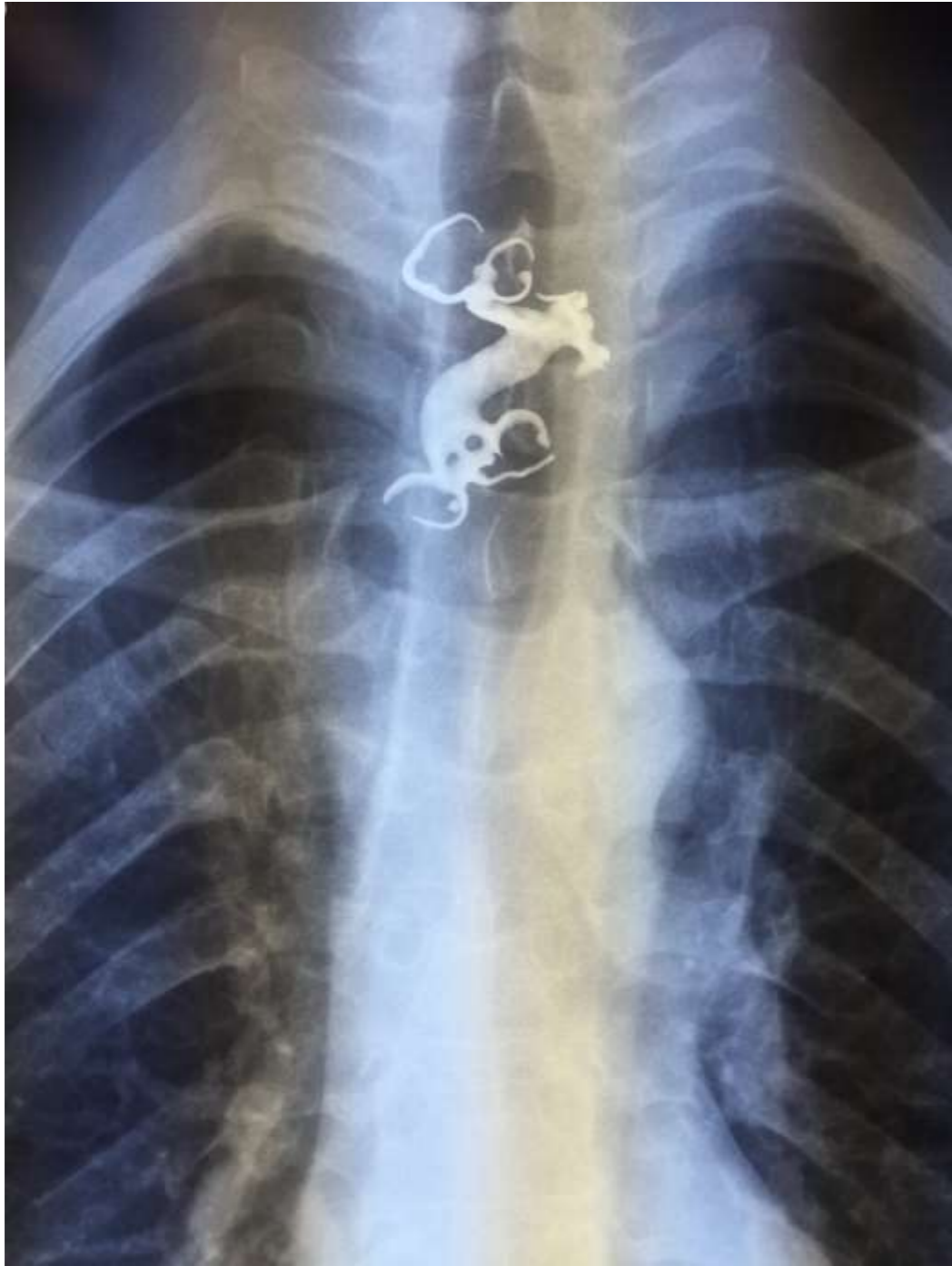












# GI-BLUTUNGEN

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The surgical management of acute upper gastrointestinal bleeding: A 12-year experience

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Primäre Chirurgie 10-30% Mortalität

# Häufigkeit der chirurgischen Notwendigkeit

20%



2%



## Further Haemorrhage after Admission to Hospital for Gastrointestinal Haemorrhage

PETER F. JONES, SHIRLEY J. JOHNSTON, ARTHUR B. McEWAN, JAMES KYLE, CHARLES D. NEEDHAM

*British Medical Journal*, 1973, 3, 660-664

### Summary

During 1967 and 1968 817 episodes of acute alimentary tract haemorrhage were treated in Aberdeen hospitals. In 229 cases further haemorrhage occurred in hospital, with a mortality of 28.8%; the mortality among patients who did not have this complication was 7.8%. This was true of any kind of further haemorrhage. As judged by transfusion requirements and mortality the severity of the further haemorrhage was unaffected by its occurrence as haematemesis and melaena or as melaena only or by whether it took place before or after 48 hours from the time of admission. The occurrence of further haemorrhage did not appear to be affected by the sex or blood group of patients, by aspirin ingestion, or by a history of a previous haemorrhage.

The effects of the occurrence of further haemorrhage, of the age being over 60 years, or of coincidental disease being present were of descending importance in regard to mortality.

Among 151 patients with peptic ulcer and further haemorrhage half required urgent surgery and 20% died. Further haemorrhage is a dangerous condition and its occurrence should immediately signal the need for vigilance and for urgent consultation between physician and surgeon. Any delay in treatment entails increased mortality.

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### Introduction

Patients admitted to hospital with acute alimentary tract haemorrhage can be divided into those who show evidence of further bleeding after admission and those who do not. All published reports have shown that bleeding after admission is of grave prognostic significance; mortality has been found to be multiplied by factors of 12 (Avery Jones, 1956), 10 (Needham and McConachie, 1950), and six (Schiller *et al.*, 1970) among patients with further bleeding in hospital. Further haemorrhage is easy to recognize when a patient repeatedly vomits blood. However, only two-thirds of the group do this; the remainder have melaena only or bleed internally. The objects of this paper are to examine the problems presented by further haemorrhage occurring in hospital and to study the behaviour and response to treatment of patients who suffer this complication.

The term further haemorrhage (F.H.) has been adopted because it can include both true recurrent bleeding and bleeding that has continued from the time of admission. Patients who were admitted to hospital having had haematemesis or melaena were considered to have suffered F.H. when (1) in spite of adequate resuscitation the patient continued to show signs of blood loss requiring further transfusion, with (or occasionally without) further haematemesis or melaena, or (2) after an interval during which the patient showed no signs of internal bleeding there was (a) vomiting or nasogastric aspiration of freshly-shed blood or (b) renewed evidence of hypovolaemic shock or rapidly progressive anaemia.

Melaena alone was not accepted as evidence of F.H. because it is not possible to distinguish blood shed before admission from that due to more recent haemorrhage.

### Method

All patients over 12 years of age in the Aberdeen hospitals during 1967 and 1968 who had haematemesis or melaena were interviewed and detailed contemporary records were made. A total of 795 patients suffered 817 episodes of bleeding (Johnston *et al.*, 1973). Altogether 192 patients suffered F.H. after being admitted for either haematemesis or melaena or both. Among 74 patients who were already in hospital for other reasons when they first showed alimentary bleeding there were 37 who had

	First audit (n=4185)			Second audit (n=6750)		
	New (84%)	All	Inpatients (41%)	New (82%)	All	Inpatients (16%)
Period of audit	1993 (4 months, June-Sept)			2007 (2 months, May+June)		
Area	Four English health regions (urban/semi urban)			Whole of UK		
Approximate total population	16 million			60 million		
Age (mean years)	64.2		72.3	62.6		73.4
Per cent over 80 years	25		32	25		42
Male/female (%)	58/42		55/45	60/40		58/42
Per cent endoscoped		74			74	
No cause found at endoscopy (%)		25			17	
Further bleeding reported (%)		16			13	
Surgery performed (%)		6.7			1.9	
Crude overall mortality (%)	11	(14)	33	6.8	(10)	26
Per cent with peptic ulcer	36		32	36		40
Mortality (%)	8.8		30	5.8		22
Per cent with varices	4.4		3.9%	11		8.4%
Mortality (%)	18		50	11		42
Per cent with malignancy	3.8		3.4	3.8		3.6
Mortality (%)	38		35	15		33
Length of stay (median)	6 days		—	5 days		—

# Endoskopische Blutstillung

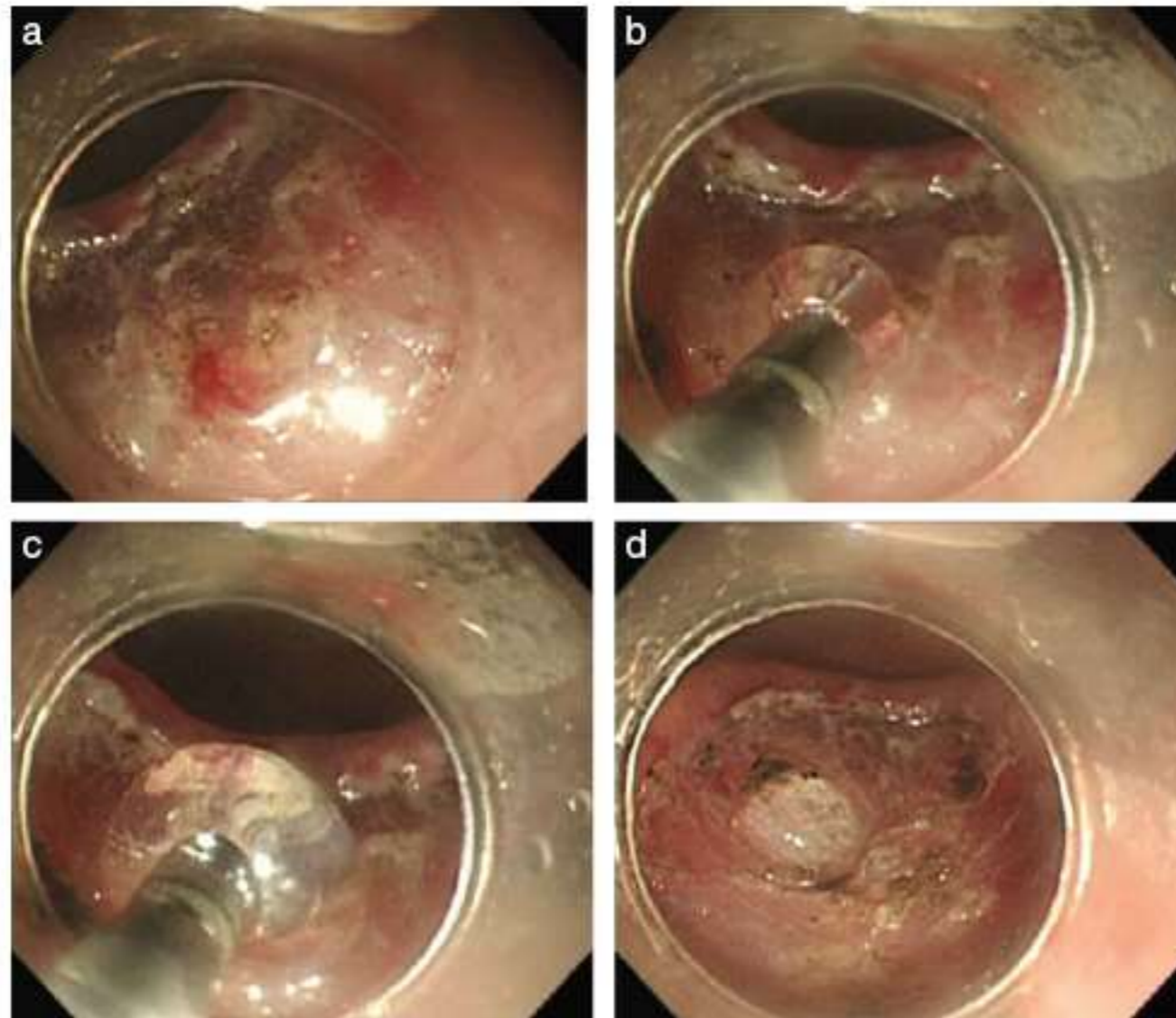
Verfahren	Technik	Info
<i>Mechanisch</i>	Clips, OTSC	„fassbares Gefäß“
	Gummiband	„Varizen!?“
<i>Thermisch</i>	Koagulation	„Festkleben“
	Argon-Plasma	„gut für Anastomosen“
<i>Injektionsverfahren</i>	NaCl+Adrenalin (1:100)	„Ischämie“
	Fibrinogen+Thrombin	„teuer“
<i>Embolisation</i>	Cyanacrylat	„nur Varizen?“

ORIGINAL ARTICLE

## Initial clinical trial of a novel hemostat, TDM-621, in the endoscopic treatments of the gastric tumors

Masashi Yoshida,\* Naoki Goto,<sup>†</sup> Minoru Kawaguchi,<sup>†</sup> Hidehiko Koyama,<sup>‡</sup> Junko Kuroda,\* Tetsuji Kitahora,<sup>†</sup> Hiroyuki Iwasaki,<sup>†</sup> Shinji Suzuki,\* Mikinori Kataoka,\* Fujii Takashi\* and Masaki Kitajima\*

\*Surgery and Digestive Diseases Center, International University of Health and Welfare Mita Hospital, Tokyo, <sup>†</sup>Digestive Diseases Center, International University of Health and Welfare Atami Hospital, Shizuoka, and <sup>‡</sup>Internal Medicine, Kurosawa Clinic, Chiba, Japan



**GUIDELINES**

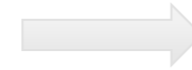
# Non-variceal upper gastrointestinal haemorrhage: guidelines

British Society of Gastroenterology Endoscopy Committee

Gut 2002;51(Suppl IV):iv1-iv6



„ ....cannot be stopped by endoscopic intervention needs an urgent surgical operation...“



„ ....not controlled by endoscopy should be treated by repeat endoscopy, selective arterial embolization or surgery...“

Annals of Internal Medicine

CLINICAL GUIDELINES

## International Consensus Recommendations on the Management of Patients With Nonvariceal Upper Gastrointestinal Bleeding

Alan N. Barkun, MD, MSc (Clinical Epidemiology); Marc Bardou, MD, PhD; Ernst J. Kuipers, MD; Joseph Sung, MD; Richard H. Hunt, MD; Myriam Martel, BSc; and Paul Sinclair, MSc, for the International Consensus Upper Gastrointestinal Bleeding Conference Group\*



„ ....cannot be stopped by endoscopic intervention should be considered for embolization therapy...“

BMJ

BMJ 2012;344:e3412 doi: 10.1136/bmj.e3412 (Published 13 June 2012)

Page 1 of 5

**PRACTICE**

GUIDELINES

## Management of acute upper gastrointestinal bleeding: summary of NICE guidance

Katharina Dworzynski *senior research fellow*<sup>1</sup>, Vicki Pollit *health economist*<sup>1</sup>, Amy Kelsey *project manager*<sup>1</sup>, Bernard Higgins *clinical director*<sup>1</sup>, Kelvin Palmer *consultant gastroenterologist*<sup>2</sup>, on behalf of the Guideline Development Group

<sup>1</sup>National Clinical Guideline Centre, Royal College of Physicians of London, London NW1 4LE, UK; <sup>2</sup>Western General Hospital, Edinburgh, UK



„ ....rebleed after endoscopic treatment should be offered interventional radiology and if this is not promptly available, the patient should be referred urgently for surgery“

# KOLON PERFORATION

Colonoscopy perforation rate, mechanisms and outcome: from diagnostic to therapeutic colonoscopy

Authors: V. Partelli, J. Herregods, E. J. M. de Boer  
 Institution: Department of Gastroenterology and Hepatology, Erasmus MC University Medical Center, Rotterdam, The Netherlands

Endoscopy 2009; 41: 941 –951

**Table 1** Frequency of perforation in recently published studies.

	Type of study	No. of colonoscopies	No. of perforations overall (%)	No. of therapeutic colonoscopies	No. of therapeutic perforations (%)	No. of deaths (%)
Anderson et al. [11], 2000	Retrospective	10486	20 (0.19)	4194	8 (0.19)	2 (0.019)
Sieg et al. [23], 2001	Prospective	82416	13 (0.015)	14249	9 (0.06)	1 (0.001)
Tran et al. [12], 2001	Retrospective	26162	21 (0.08)	9214	10 (0.11)	1 (0.006)
Nelson et al. [24], 2002	Prospective	3196	0 (0)	1672	0 (0)	0 (0)
Korman et al. [15], 2003	Retrospective	116000	37 (0.03)		13	0 (0)
Gondal et al. [14], 2003	Prospective	2524	6 (0.23)	1807	6 (0.33)	0 (0)
Gatto et al. [13], 2003	Retrospective	39286	77 (0.19)			4 (0.01)
Misra et al. [16], 2004	Retrospective	7425	10 (0.13)	2955	4 (0.13)	1 (0.013)
Cobb et al. [17], 2004	Retrospective	43609	14 (0.032)		4	0 (0)
Heldwein et al. [22], 2005	Prospective	24382	26 (0.1)	24382	26 (0.1)	0 (0)
Iqbal et al. [18], 2005	Retrospective	85824	72 (0.08)		33	5 (0.005)
Rathgaber and Wick [20], 2006	Retrospective	12407	2 (0.016)	5074	0 (0)	0 (0)
Levin et al. [21], 2006	Retrospective	16318	15 (0.09)	11083	12 (0.1)	0 (0)
Tulchinsky et al. [19], 2006	Retrospective	12067	7 (0.05)		2	0 (0)
Luning et al. [8], 2007	Retrospective	9209	23 (0.24)		15	3 (0.009)
<b>Total</b>		<b>491311</b>	<b>343 (0.07)</b>	<b>74630*</b>	<b>75 (0.1)*</b>	<b>17 (0.003)</b>

\*These figures include data only from the studies that supplied both the total number of therapeutic colonoscopies carried out and the number of therapeutic perforations encountered.

500.000 Endoskopien, 0,07 % diagnostisch, 0,1% therapeutisch

# ZUSAMMENFASSUNG

Es existieren effektive endoskopische Möglichkeiten,  
um Komplikationen im GI-Trakt zu beherrschen

Es existieren vielseitige und innovative technische Lösungen

Individualisiertes  
endoskopisches Komplikationsmanagement

suffizienten Kenntnisse  
in der interventionellen Endoskopie (Clips, OTS-Clips, etc.)



