Klinik und Poliklinik für Interdisziplinäre Endoskopie

Gastro-Highlights 2019 – GI Tumoren und Endoskopie

Thomas Rösch

Universitätsklinikum Hamburg-Eppendorf

Onkologie – Themen

Minimal invasive Tumoreingriffe

RCT Chemotherapie

Screening Pankreaskarzinom

Minimal-invasive Tumoreingriffe

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Hybrid Minimally Invasive Esophagectomy for Esophageal Cancer

C. Mariette,* S.R. Markar, T.S. Dabakuyo-Yonli, B. Meunier, D. Pezet, D. Collet, X.B. D'Journo, C. Brigand, T. Perniceni, N. Carrère, J.-Y. Mabrut, S. Msika, F. Peschaud, M. Prudhomme, F. Bonnetain,* and G. Piessen, for the Fédération de Recherche en Chirurgie (FRENCH) and French Eso-Gastric Tumors (FREGAT) Working Group†

Lancet Gastroenterol Hepatol
2019

Laparoscopic versus open pancreatoduodenectomy for pancreatic or periampullary tumours (LEOPARD-2): a multicentre, patient-blinded, randomised controlled phase 2/3 trial

Jony van Hilst, Thijs de Rooij, Koop Bosscha, David J Brinkman, Susan van Dieren, Marcel G Dijkgraaf, Michael F Gerhards, Ignace H de Hingh, Tom M Karsten, Daniel J Lips, Misha D Luyer, Olivier R Busch, Sebastiaan Festen*, Marc G Besselink*, for the Dutch Pancreatic Cancer Group

JAMA | Original Investigation

Effect of Laparoscopic vs Open Distal Gastrectomy on 3-Year Disease-Free Survival in Patients With Locally Advanced Gastric Cancer The CLASS-01 Randomized Clinical Trial

Jiang Yu, MD; Changming Huang, MD; Yihong Sun, MD; Xiangqian Su, MD; Hui Cao, MD; Jiankun Hu, MD; Kuan Wang, MD; Jian Suo, MD; Kaixiong Tao, MD; Xianli He, MD; Hongbo Wei, MD; Mingpeng Ying, MD; Weiguo Hu, MD; Xiaohui Du, MD; Yanfeng Hu, MD; Hao Liu, MD; Chaohui Zheng, MD; Ping Li, MD; Jianwei Xie, MD; Fenglin Liu, MD; Zhiyu Li, MD; Gang Zhao, MD; Kun Yang, MD; Chunxiao Liu, MD; Haojie Li, MD; Pingyan Chen, PhD; Jiafu Ji, MD; Guoxin Li, MD, PhD, FRCS; for the Chinese Laparoscopic Gastrointestinal Surgery Study (CLASS) Group

JAMA Oncology | Original Investigation

Effect of Laparoscopic Distal Gastrectomy vs Open Distal Gastrectomy on Long-term Survival Among Patients With Stage I Gastric Cancer The KLASS-01 Randomized Clinical Trial

Hyung-Ho Kim, MD, PhD; Sang-Uk Han, MD, PhD; Min-Chan Kim, MD, PhD; Wook Kim, MD, PhD; Hyuk-Joon Lee, MD, PhD; Seung Wan Ryu, MD, PhD; Gyu Seok Cho, MD, PhD; Chan Young Kim, MD, PhD; Han-Kwang Yang, MD, PhD; Do Joong Park, MD, PhD; Kyo Young Song, MD, PhD; Sang-Il Lee, MD, PhD; Seong Yeob Ryu, MD, PhD; Joo-Ho Lee, MD, PhD; Woo Jin Hyung, MD, PhD; for the Korean Laparoendoscopic Gastrointestinal Surgery Study (KLASS) Group

Minimal-invasive Tumoreingriffe

GastroHighlights '19

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Hybrid Minimally Invasive Esophagectomy for Esophageal Cancer

N=207, T1-3	
Komplikationen	37% vs 64%
3-J-ÜL	67% vs 55%

Lancet Gastroenterol Hepatol
2019

Laparoscopic versus open pancreatoduodenectomy for pancreatic or periampullary tumours (LEOPARD-2): a multicentre, patient-blinded, randomised controlled phase 2/3 trial

N=40, TU-Größe 18-21 mm, Abbruch	
Mortalität	10% vs 2%
Komplikationen	50% vs 39%

JAMA | Original Investigation

Effect of Laparoscopic vs Open Distal Gastrectomy on 3-Year Disease-Free Survival in Patients With Locally Advanced Gastric Cancer

N=1056, T2-4a	
3-J-ÜL (KH-frei)	76.5% vs 77.8%
Rezidive	18.8% vs 16.5%

JAMA Oncology | Original Investigation

Effect of Laparoscopic Distal Gastrectomy vs Open Distal Gastrectomy on Long-term Survival Among Patients With Stage I Gastric Cancer
The KLASS-01 Randomized Clinical Trial

N=1416, T1-2 (inkl. T1N1)	
5-J-ÜL	94.2% vs 93.3%
Rezidive	5.6% vs 4.8%

RCT Chemotherapie

Lancet

Perioperative chemotherapy with fluorouracil plus leucovorin, oxaliplatin, and docetaxel versus fluorouracil or capecitabine plus cisplatin and epirubicin for locally advanced, resectable gastric or gastro-oesophageal junction adenocarcinoma (FLOT4): a randomised, phase 2/3 trial

Salah-Eddin Al-Batran, Nils Homann, Claudia Pauligk, Thorsten O Goetze, Johannes Meiler, Stefan Kasper, Hans-Georg Kopp, Frank Mayer, Georg Martin Haag, Kim Luley, Udo Lindig, Wolff Schmiegel, Michael Pohl, Jan Stoehlmacher, Gunnar Folprecht, Stephan Probst, Nicole Prasnikar, Wolfgang Fischbach, Rolf Mahlberg, Jörg Trojan, Michael Koenigsmann, Uwe M Martens, Peter Thuss-Patience, Matthias Egger, Andreas Block, Volker Heinemann, Gerald Illerhaus, Markus Moehler, Michael Schenk, Frank Kullmann, Dirk M Behringer, Michael Heike, Daniel Pink, Christian Teschendorf, Carmen Löhr, Helga Bernhard, Gunter Schuch, Volker Rethwisch, Ludwig Fischer von Weikersthal, Jörg T Hartmann, Michael Kneba, Severin Daum, Karsten Schulmann, Jörg Weniger, Sebastian Belle, Timo Gaiser, Fuat S Oduncu, Martina Güntner, Wael Hozaeel, Alexander Reichart, Elke Jäger, Thomas Kraus, Stefan Mönig, Wolf O Bechstein, Martin Schuler, Harald Schmalenberg, Ralf D Hofheinz*, on behalf of the FLOT4-AIO Investigators†*

FLOT vs. ECF/ECX

N=493, (neo)adjuvante Therapie, 87-94% OP, 78-85% R0

Medianes ÜL	50% vs 35%
SAE	27% vs 27%

RCT Chemotherapie

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 DECEMBER 20, 2018 VOL. 379 NO. 25

FOLFIRINOX or Gemcitabine as Adjuvant Therapy for Pancreatic Cancer

T. Conroy, P. Hammel, M. Hebbar, M. Ben Abdelghani, A.C. Wei, J.-L. Raoul, L. Choné, E. Francois, P. Artru, J.J. Biagi, T. Lecomte, E. Assenat, R. Faroux, M. Ychou, J. Volet, A. Sauvanet, G. Breysacher, F. Di Fiore, C. Cripps, P. Kavan, P. Texereau, K. Bouhier-Leporrier, F. Khemissa-Akouz, J.-L. Legoux, B. Juzyna, S. Gourgou, C.J. O'Callaghan, C. Jouffroy-Zeller, P. Rat, D. Malka, F. Castan, and J.-B. Bachet, for the Canadian Cancer Trials Group and the Unicancer-GI–PRODIGE Group*

N=493, postoperativ, 55-60% R0

KH-freies ÜL nach 3 Jahren	39.7% vs 21.4%
NW	75.9% vs 52.9%

RCT Chemotherapie

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Maintenance Olaparib for Germline *BRCA*-Mutated Metastatic Pancreatic Cancer

Talia Golan, M.D., Pascal Hammel, M.D., Ph.D., Michele Reni, M.D., Eric Van Cutsem, M.D., Ph.D., Teresa Macarulla, M.D., Ph.D., Michael J. Hall, M.D., Joon-Oh Park, M.D., Ph.D., Daniel Hochhauser, M.D., Ph.D., Dirk Arnold, M.D., Ph.D., Do-Youn Oh, M.D., Ph.D., Anke Reinacher-Schick, M.D., Ph.D., Giampaolo Tortora, M.D., Ph.D., Hana Algül, M.D., Ph.D., M.P.H., Eileen M. O'Reilly, M.D., David McGuinness, M.Sc., Karen Y. Cui, M.D., Ph.D., Katia Schlienger, M.D., Ph.D., Gershon Y. Locker, M.D., and Hedy L. Kindler, M.D.

N=154 mit BRCA1/2-Mutationen (von 3315) stabil unter Platin-CTx

KH-freies Überleben 7.4 Mo vs 3.8 Monate

Screening Pankreaskarzinom

Clinical Review & Education

JAMA | US Preventive Services Task Force | RECOMMENDATION STATEMENT

Screening for Pancreatic Cancer
US Preventive Services Task Force Reaffirmation Recommendation Statement

US Preventive Services Task Force

bounded as at least moderate. The USPSTF reaffirms its previous conclusion that the potential benefits of screening for pancreatic cancer in asymptomatic adults do not outweigh the potential harms.

CONCLUSIONS AND RECOMMENDATION The USPSTF recommends against screening for pancreatic cancer in asymptomatic adults. (D recommendation)

Endoskopie – Themen

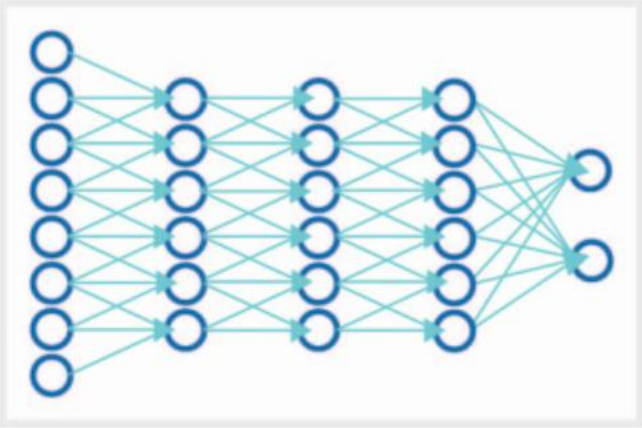
Künstliche Intelligenz

ÖGD/Barrett

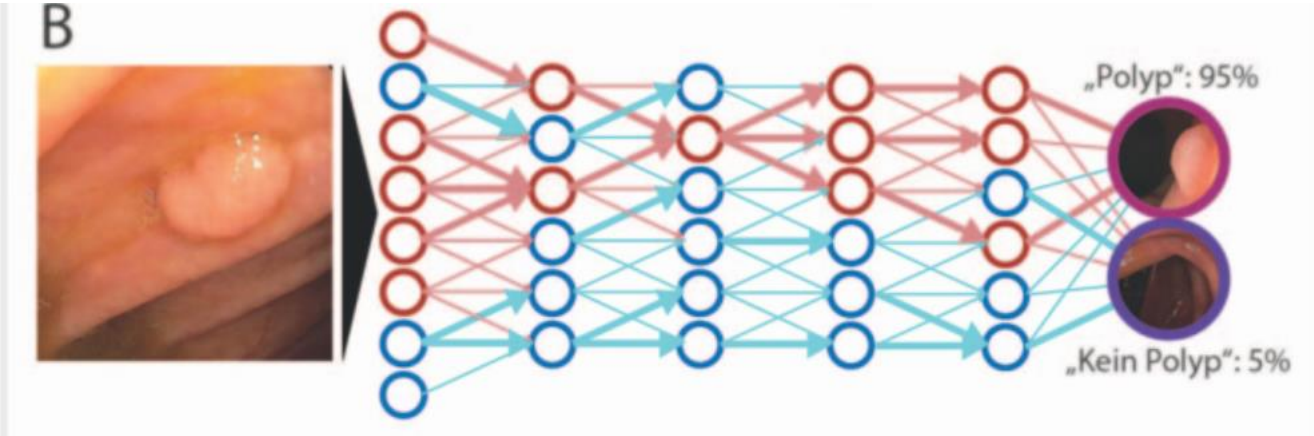
Koloskopie

Neue Techniken

Künstliche Intelligenz (KI)



Schmitz et al. Z Gastroenterol 2019



Künstliche Intelligenz (KI)

Anwendungen	Klinische Konsequenzen
• Detektion von Läsionen	Verbesserte ADR
• Charakterisierung von Läsionen	Klinisches Management
• Gewebecharakterisierung	Klinisches Management
• Performance-Hilfe	Qualitätsverbesserung

Künstliche Intelligenz (KI)

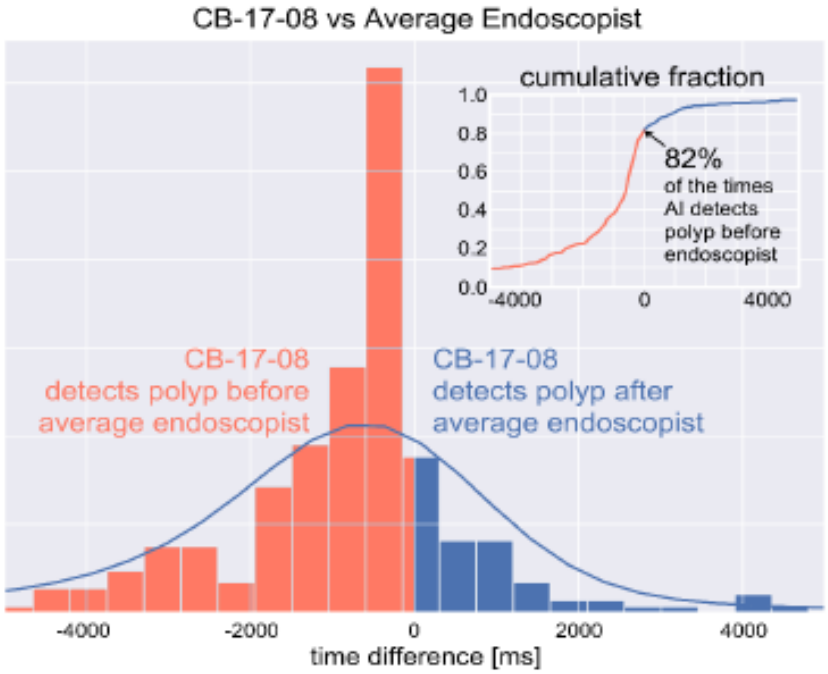
GastroHighlights '19

REACTION TIME

VS AVERAGE ENDOSCOPIST

DETECTS **1.27s** EARLIER ON AVG

ANTICIPATES **82%** OF THE TIMES

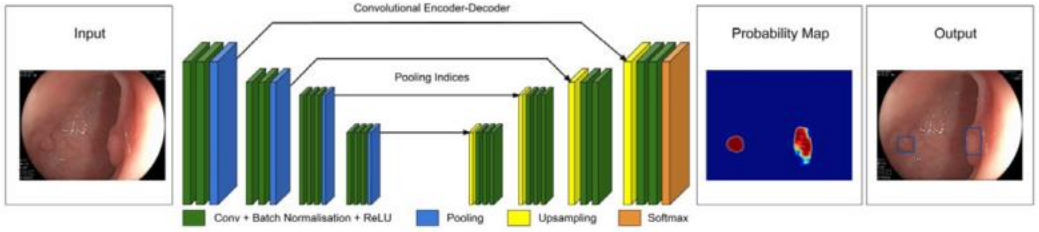


Hassan et al. Gut online 2019

Künstliche Intelligenz (KI)

Erste randomisierte Studie über KI in der Koloskopie

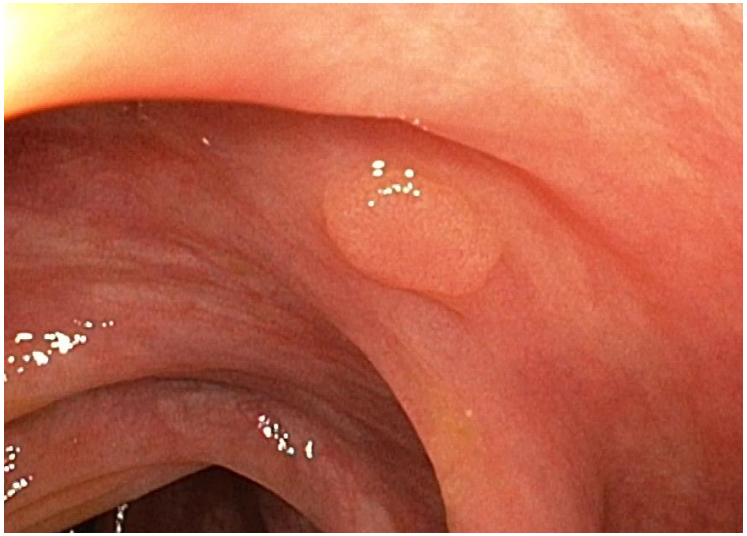
N=1058 China
ADR-Steigerung von 20.3% auf 29.1%
Fast nur kleine Adenome

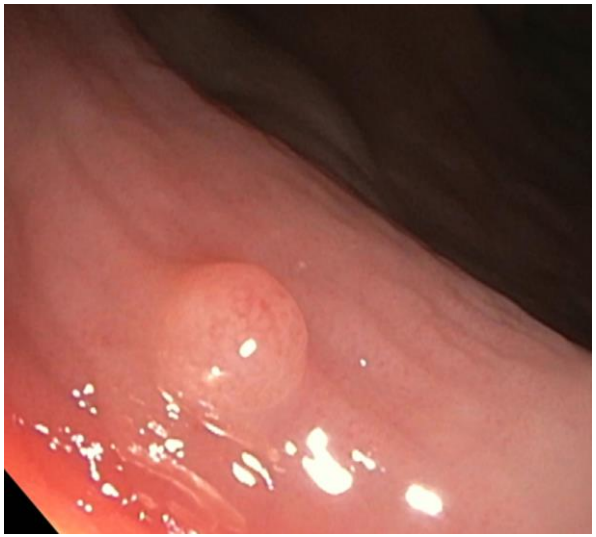


Wang et al. Gut 2019

KI-Systeme und Methodik

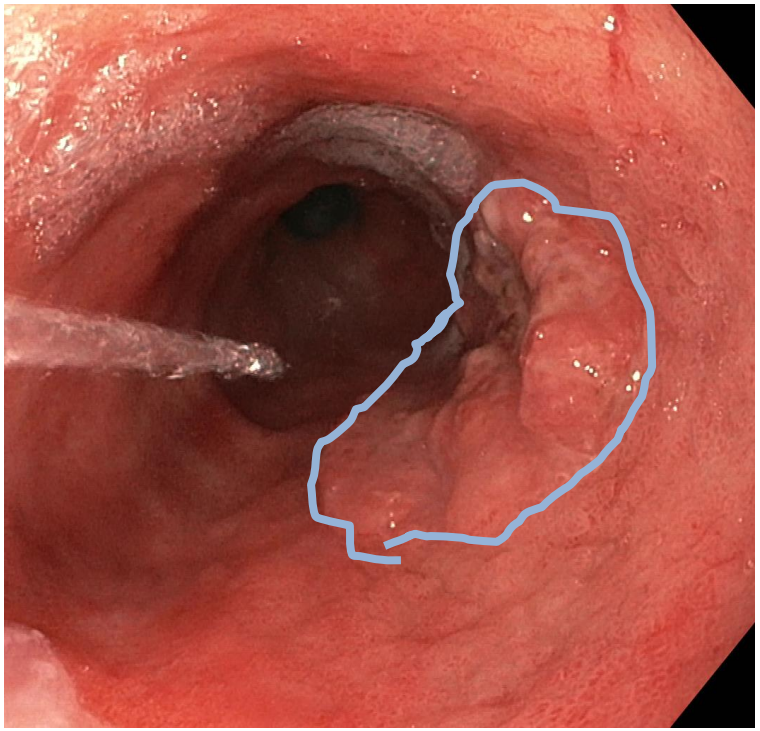
Training mit validierter Histologie





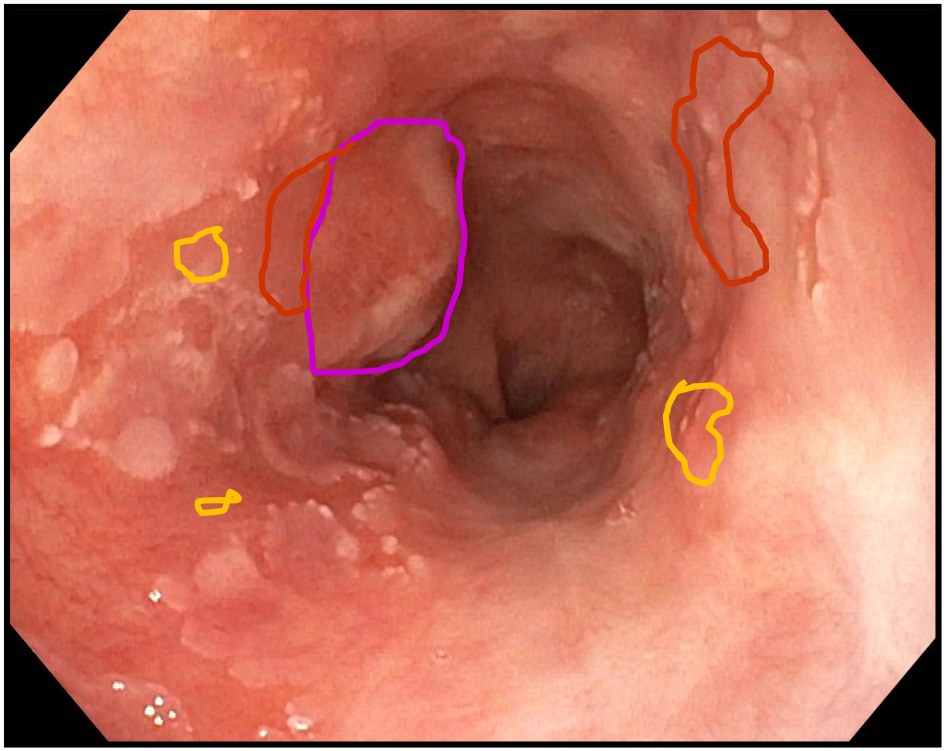
Künstliche Intelligenz (KI)

KI bei unifokaler klar erkennbarer Pathologie



Künstliche Intelligenz (KI)

KI bei multifokaler differenzierter Histologie



Menschliche Intelligenz (MI)

Holländisches Vorsorge-Programm

N=3622 FIT-positive Kolodkopien

Karzinomerkennung in Polypen

Training

92 T1-Karzinome, richtige Diagnose 39.1%

Vleugels et al. Gut (in press)

Endoskopie – Themen

Künstliche Intelligenz

ÖGD/Barrett

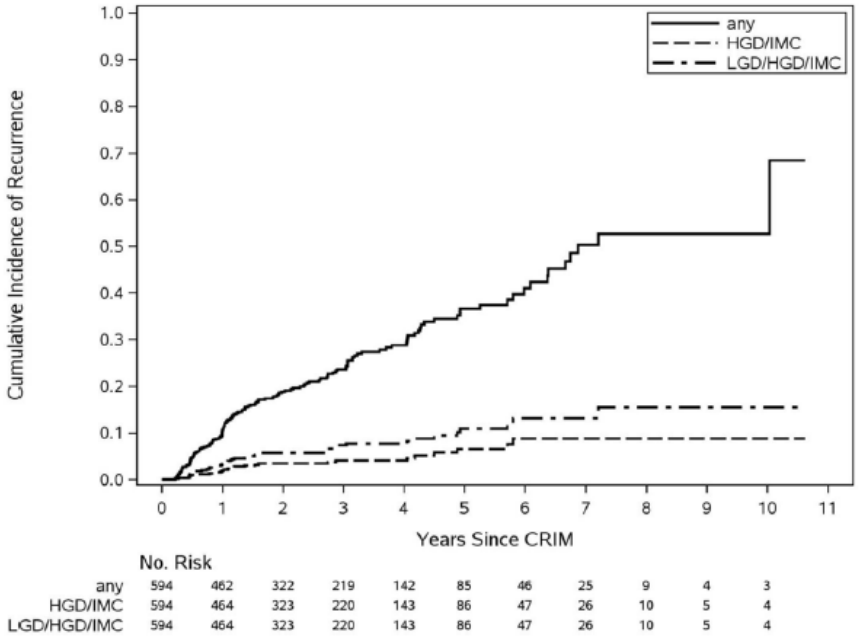
Koloskopie

Neue Techniken

ORIGINAL ARTICLE

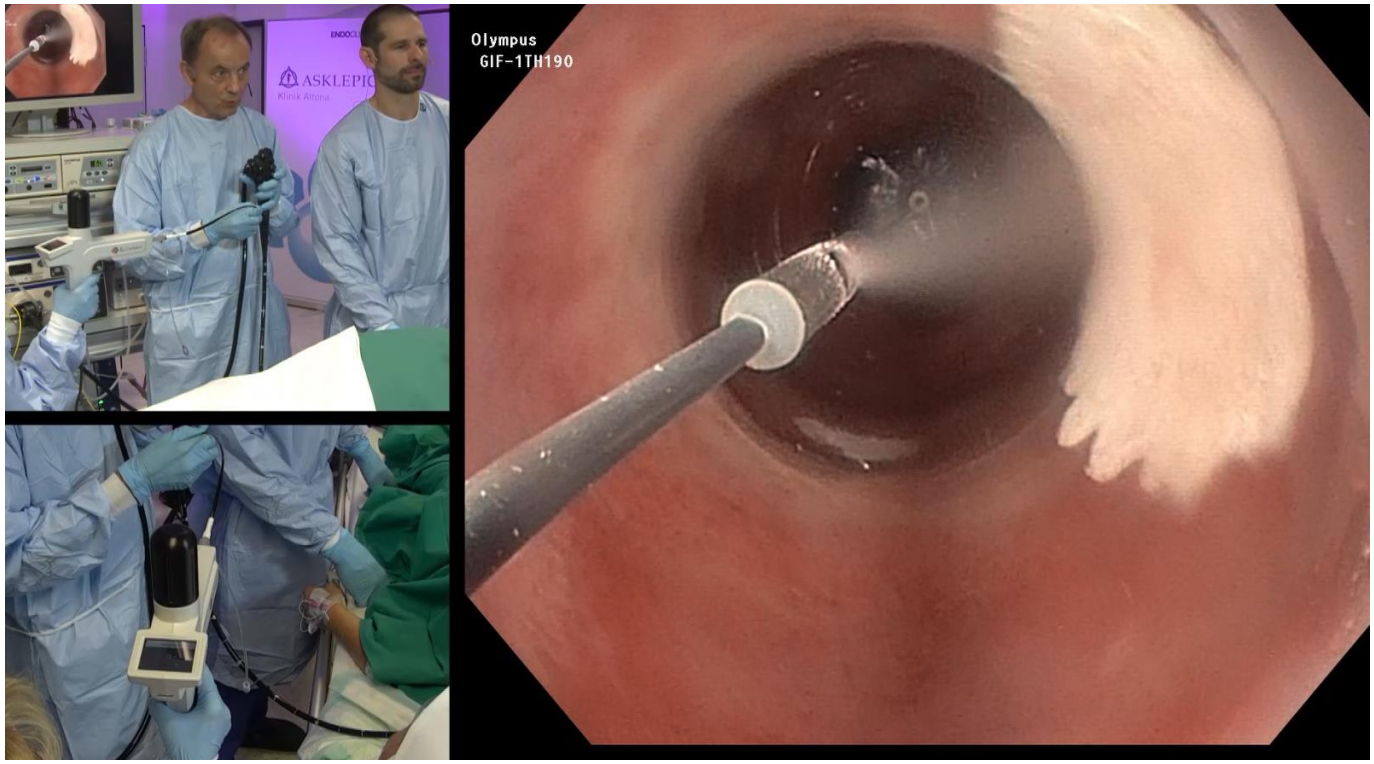
Timeline and location of recurrence following successful ablation in Barrett's oesophagus: an international multicentre study

Sarmed S Sami,[1] Adharsh Ravindran,[1] Allon Kahn,[2] Diana Snyder,[2] Jose Santiago,[3] Jacobo Ortiz-Fernandez-Sordo,[3] Wei Keith Tan,[4] Ross A Dierkhising,[5] Julia E Crook,[6] Michael G Heckman,[6] Michele L Johnson,[1] Ramona Lansing,[1] Krish Ragunath,[3] Massimiliano di Pietro,[4] Herbert Wolfsen,[7] Francisco Ramirez,[2] David Fleischer,[2] Kenneth K Wang,[1] Cadman L Leggett,[1] David A Katzka,[1] Prasad G Iyer[1]



RFA-Database US/UK
n=594, 66% Ca/HGIN
55% plus Endoresektion
Keine Definition
Therapieabschluß

Kryotherapie statt hot ablation (RFA, H-APC)



Barrett-Ösophagus

Kryotherapie statt hot ablation (RFA, H-APC)

„Meta-Analyse“ 6 Fallserien, n=594
F-up< 1 Jahr

98% Remission Neoplasie
69% Remission Barrett

7% Dysplasie-Persistenz, 4% Progression zum Ca

Rezidiv ca 10% Neoplasie, ca. 20% Barrett

Mohan et a. Dis Esophagus 2019

Endoskopie – Themen

Künstliche Intelligenz

ÖGD/Barrett

Koloskopie

Neue Techniken

Koloskopie: Polypektomie

215

ELECTROCAUTERY SETTING DOES NOT AFFECT EFFICACY AND SAFETY OF ENDOSCOPIC RESECTION OF LARGE COLORECTAL POLYPS

Heiko Pohl*[1], Ian S. Grimm[2], Matthew T. Moyer[3], Muhammad K. Hasan[4], Douglas K. Pleskow[18], B. Joseph Elmunzer[5], Mouen A. Khashab[6], Omid Sanaei[6], Firas al Kawas[7], Stuart R. Gordon[8], Abraham Mathew[3], John M. Levenick[3], Harry R. Aslanian[9], Fadi Antaki[10], Daniel von Renteln[11], Seth Crockett[2], Amit Rastogi[12], Jeffrey Gill[13], Ryan Law[14], Puja S. Elias[5], Maria Pellise[15], Todd MacKenzie[16], Douglas K. Rex[17]

RCT N=928

Endocut versus Forced Coag

Koloskopie: Polypektomie

Characteristics and Outcomes	Endocut® (n=464)	Forced Coagulation (n=464)	p
Patients			
Age, years, mean (SD)	64.7 (9.7)	65.4 (9.5)	0.284
Male sex, n (%)	276 (59.5)	276 (59.5)	1.0
Antithrombotic medications, n (%)	128 (27.6)	141 (30.4)	0.347
Severe Adverse Events, n (%)	34 (7.3)	37 (8.0)	0.711
Bleeding, n (%)	23 (5.0)	28 (6.0)	0.471
Other, n (%)	1 (0.2)	1 (0.2)	1.0
1st surveillance colonoscopy, n patients (%)	330 (71.1)	328 (70.7)	0.885
Time, median months (IQR)	6 (4,7)	6 (4,7)	0.381

Schwere Komplikationen 9.7% vs 9.5%

Table 1. Patient baseline characteristics and outcomes

Outcomes	Endocut® (n=512)	Forced Coagulation (n=487)	p
EMR at index colonoscopy			
Complete resection, n (%)	493 (96.3)	462 (94.9)	0.273
Piecemeal resection, n (%)	460 (89.8)	425 (87.3)	0.201
Small residual islands, n (%)	179 (35.0)	201 (41.3)	**0.040**
Adjunctiv		38.4)	0.391
Intraproc		1.3)	**0.006**
Time of r		0,33)	0.065
1st surveillance colonoscopy			
Polyp resection sites, n (%)	351 (68.6)	326 (66.9)	0.585
Recurrence of resection sites, n (%)	62 (17.7)	57 (17.5)	0.951

Rezidive 17.7% vs 17.5%

Table 2. Outcomes related to polyp resection

Koloskopie: Polypektomie

Unterwasser-Polypektomie
RCT, n=210, 5 japanische Zentren
1-2 cm

R0-Resektion	69% vs 50%
En bloc Resektion	89% vs 75%
Rezidive ???	

Yamashina et al Gastroenterology 2019

Koloskopie: Polypektomie

GastroHighlights '19

ORIGINAL ARTICLE: Clinical Endoscopy

A novel submucosal injection solution for endoscopic resection of large colorectal lesions: a randomized, double-blind trial CME

Alessandro Repici, MD,[1] Michael Wallace, MD, MPH,[2] Prateek Sharma, MD,[3] Pradeep Bhandari, MD, PhD,[4] Gianluca Lollo, MD,[1] Roberta Maselli, MD,[1] Cesare Hassan, MD,[5] Douglas K. Rex, MD[6]

Milan, Italy; Jacksonville, Florida; Kansas City, Kansas, USA; Portsmouth, UK; Rome, Italy; Indianapolis, Indiana, USA

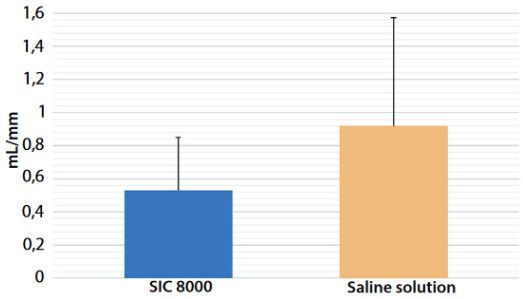


Figure 4. Total injected volume per lesion size (mL/mm) in SIC-8000 and saline solution arms (primary endpoint).

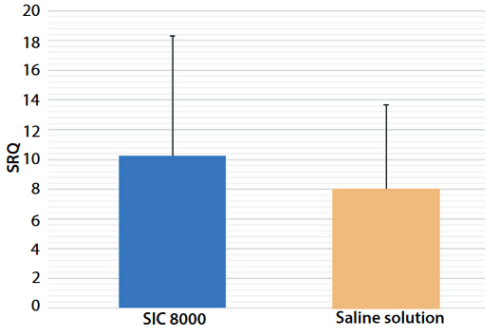


Figure 6. Sydney Resection Quotient (calculated by dividing th size in mm by the number of resections required to remove the in the 2 arms.

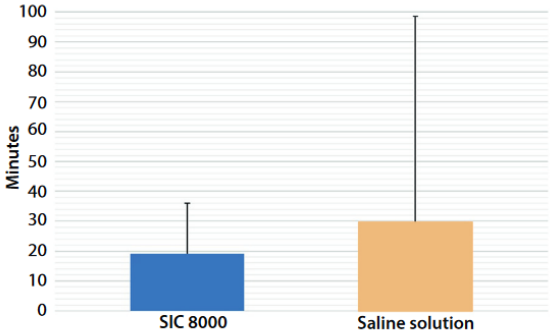


Figure 5. Time to resect the lesion completely (from the first injection to final excision of the last piece of the lesion) in the 2 arms.

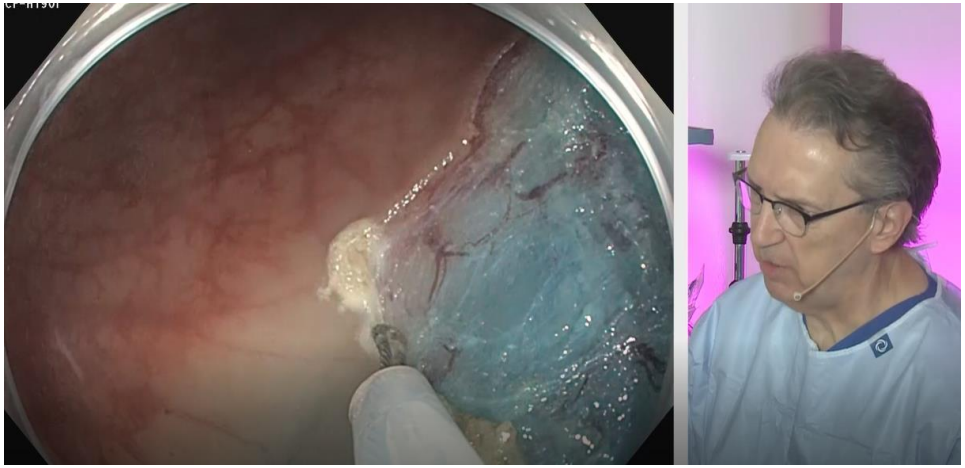
Koloskopie: Polypektomie

Randkoagulation

RCT
n=390 ≥ 2 cm

Rezidive

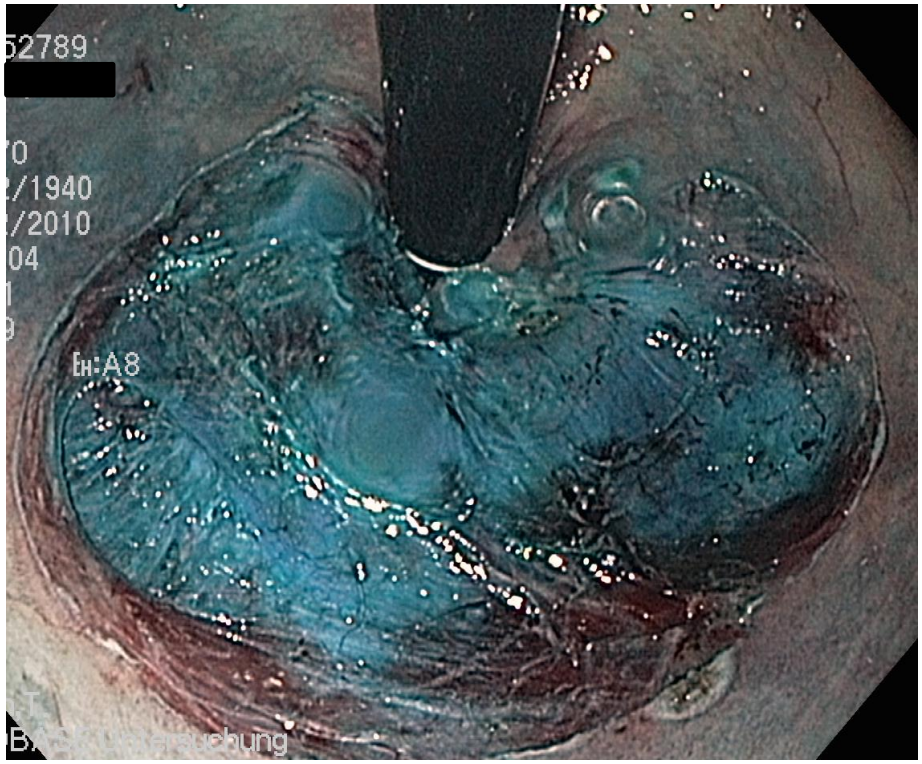
5.2% vs 21 %



Klein et al Gastroenterology 2019

Koloskopie: Polypektomie

Nachblutungs- Prophylaxe ?



Koagulieren
Clippen
Sprays

Koloskopie: Clips nach Polypektomie

Clippen der Resektionsstelle ≥2 cm	**Nachblutungen**
Pohl et al. Gastroenterology 2019, n=919	3.5% vs 7.1% (rechts 3.3% vs. 9.6%)
Albeniz et al. Gastroenterology 2019, n=253	5% vs. 12.1%
Feagins et al. Gastroenterology 2019, n=1098 **≥1 cm**	2.3% vs 2.9%

Koloskopie: Clips nach Polypektomie

Clippen der Resektionsstelle ≥2 cm	**Nachblutungen**
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Endoskopie – Themen

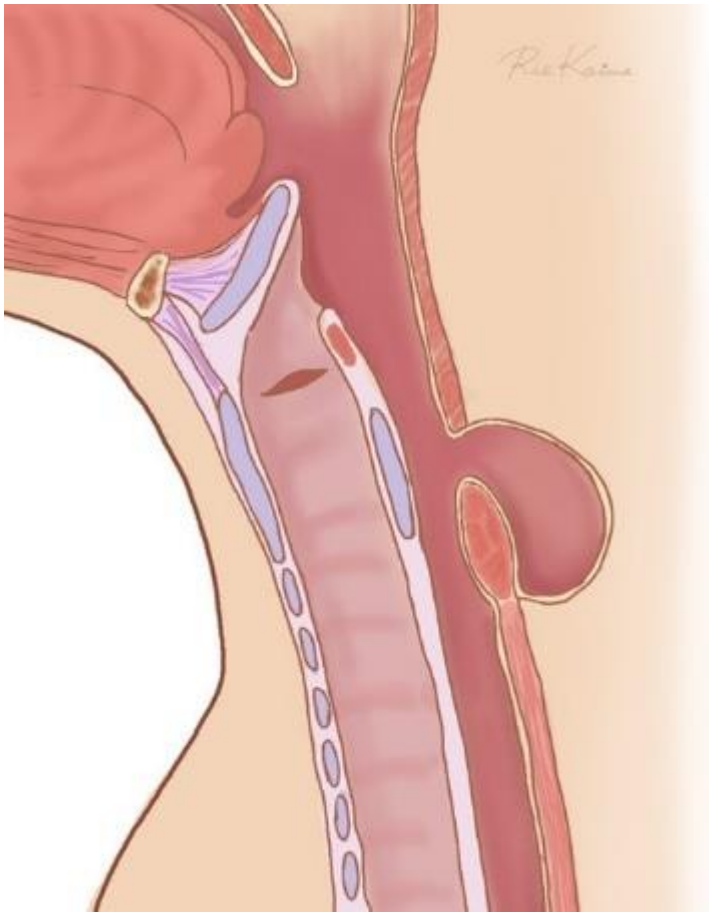
Künstliche Intelligenz

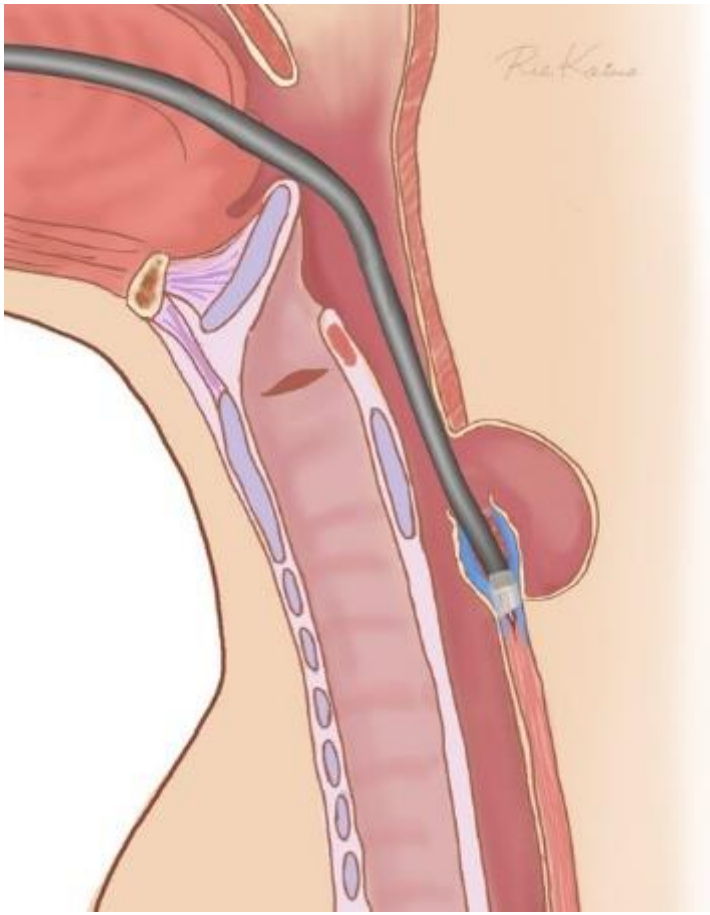
ÖGD/Barrett

Koloskopie

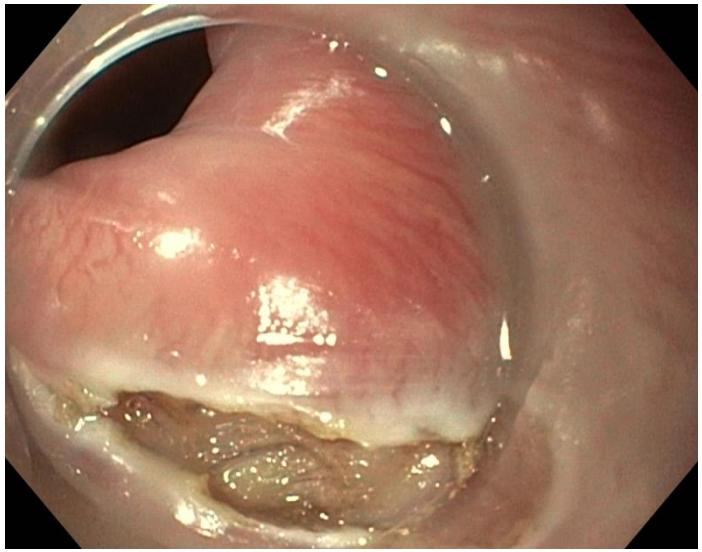
Neue Techniken

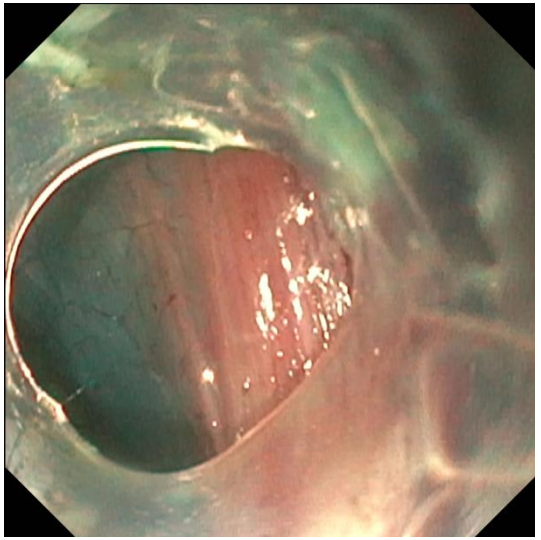
Zenker und POEM

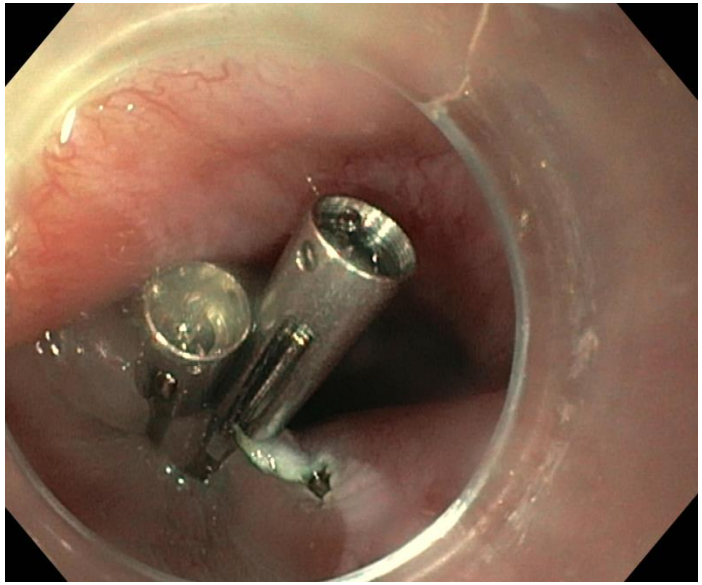


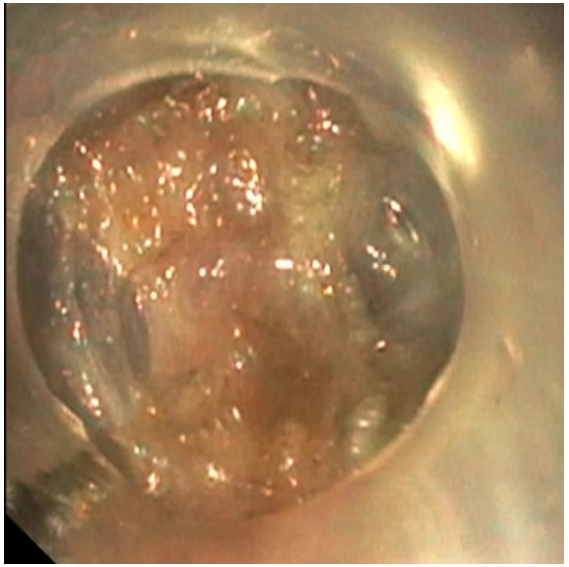


Zenker und POEM

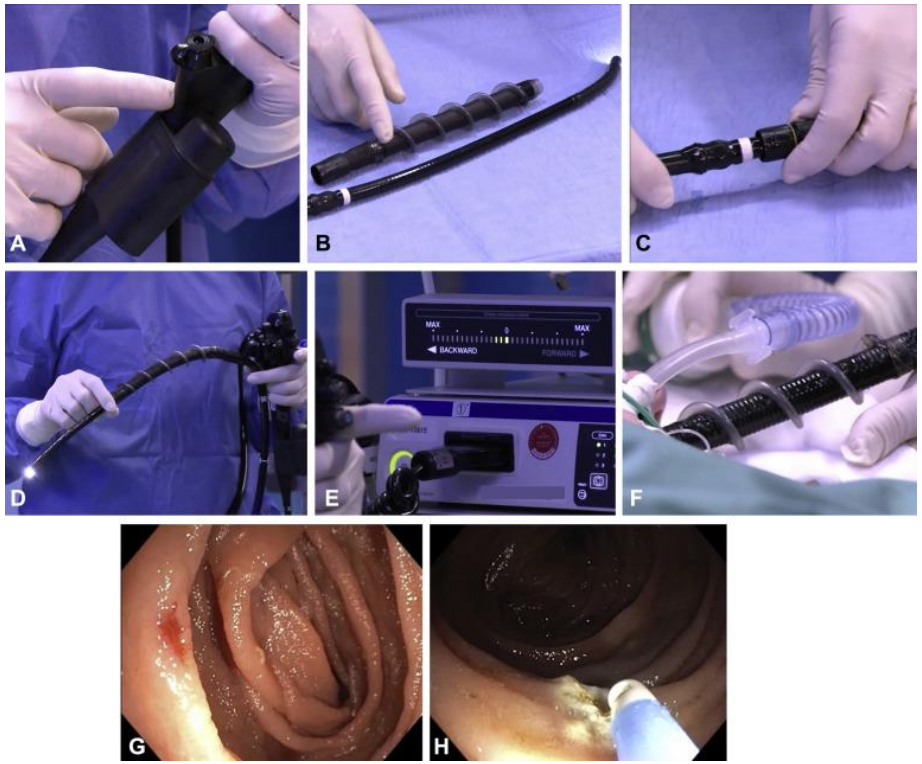


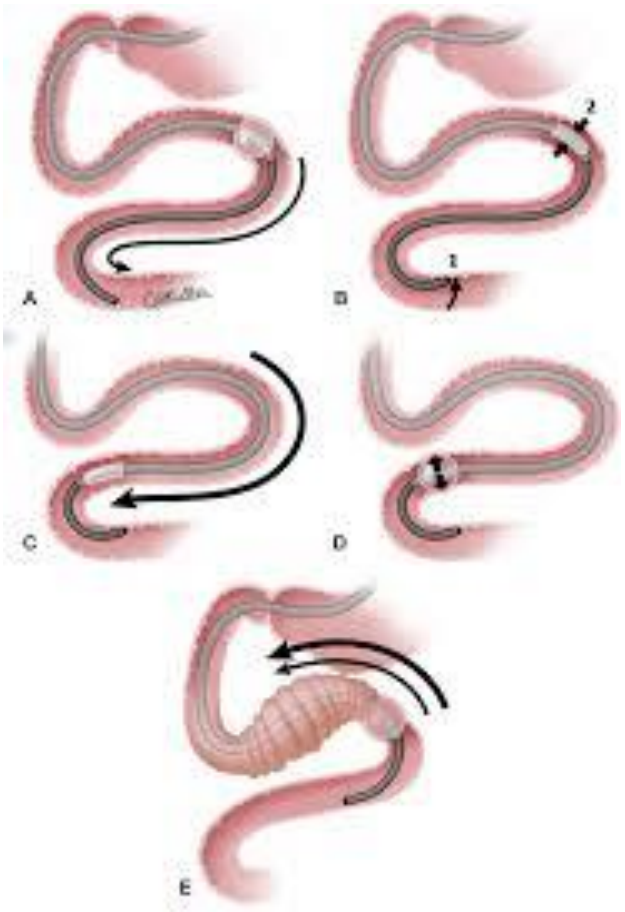




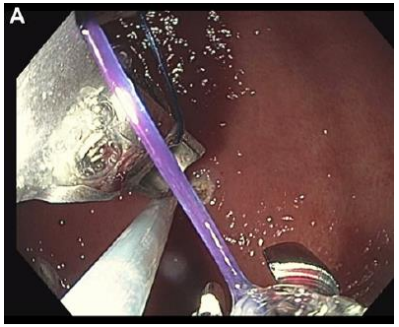


Motorisierte Spiralenteroskopie

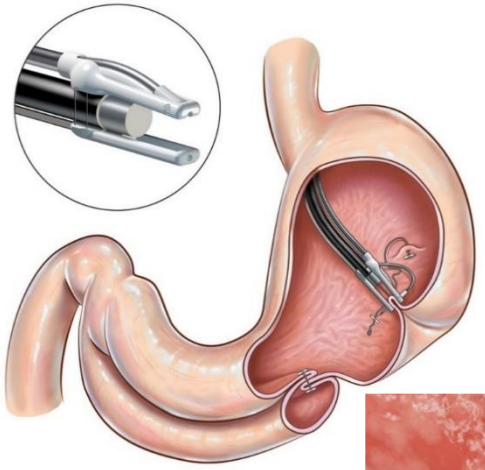


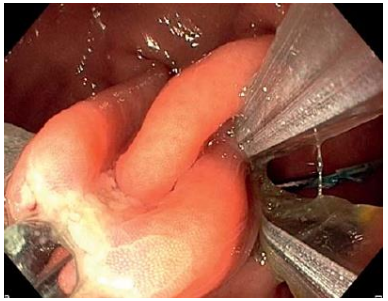


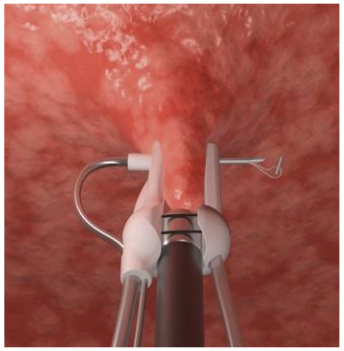
Endoskopische Gastroplastie



Apollo Overstitch







Endo Tools Endomina

Endoskopische Gastroplastie

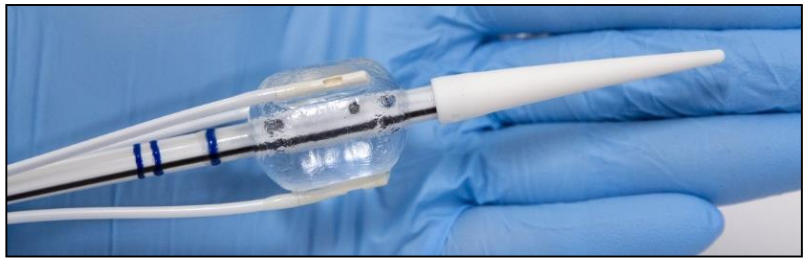
OVERSTITCH, N=109, Kinder, BMI (17 J), BMI 33 ± 5

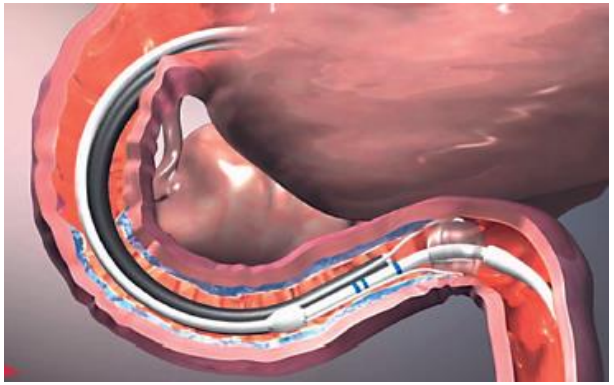
Gewichtsabnahme

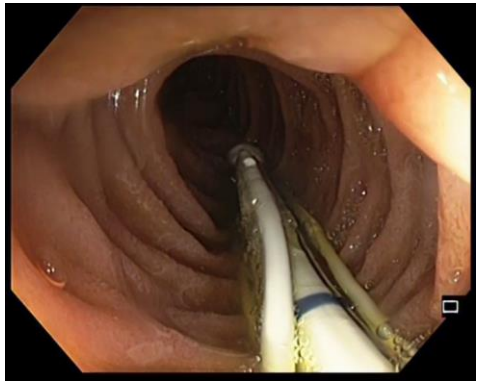
6 Monate	14.4%
12 Monate	16.2%
18 Monate	15.4%
24 Monate	13.7%

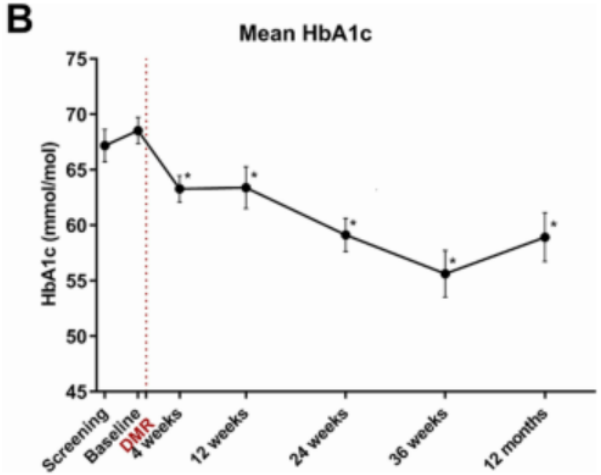
Alqatani et al. Am J Gastroenterol 2019

Duodenale Abrasion (Fractyl^{R})



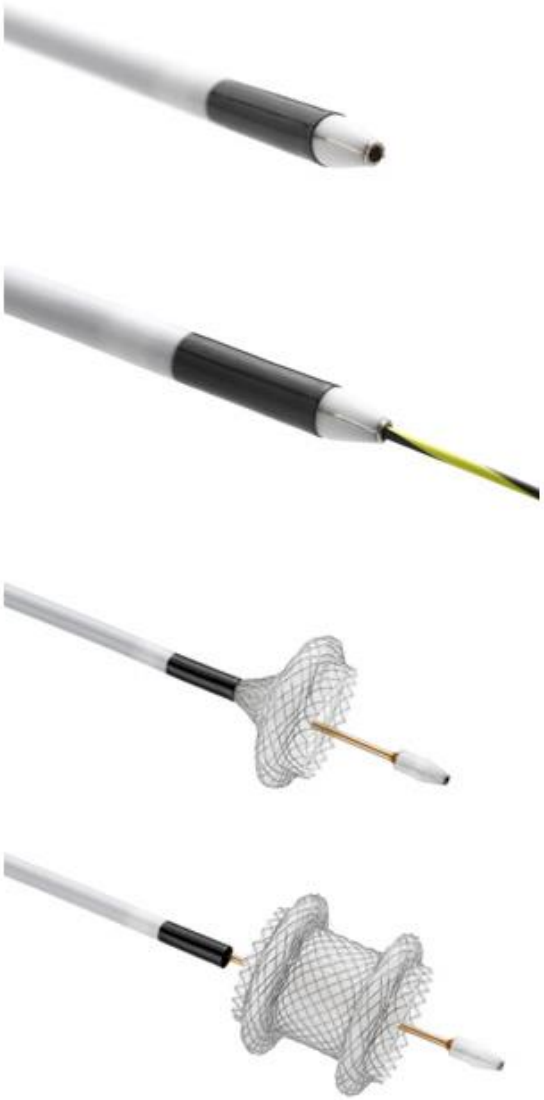






Bergman et al. Gut 2019

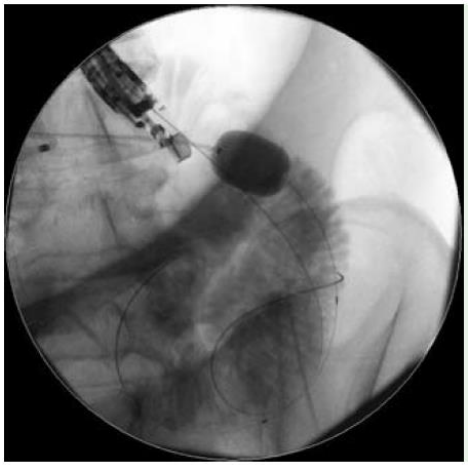
Anastomosenstents

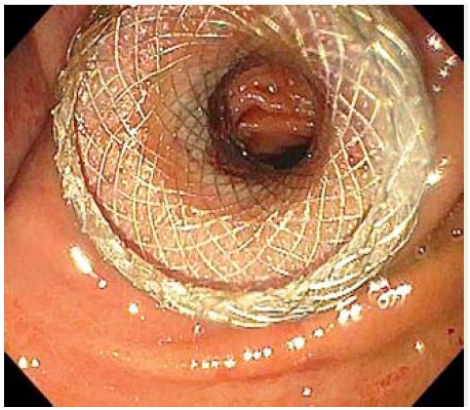


zwischen

- Magen und Pankreascyste/Nekrose
- Duodenum und Gallenwegen (DHC)
- Magen/Duodenum und Gallenblase
- Magen und Dünndarm (GE)
- ….

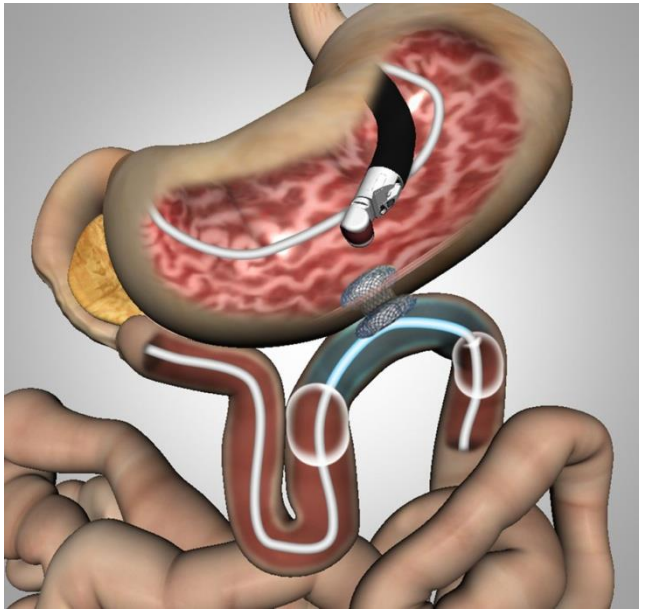
Gastroenterostomie





Palliation bei Magenausganstenose

Adipositas ?



Hygiene

Duodenoskop-Infektionen in USA – FDA-Empfehlungen (Kappen, single use)
Infektionsdaten aus Holland

Endoscopy

ORIGINAL ARTICLE

Rates of infection after colonoscopy and osophagogastroduodenoscopy in ambulatory surgery centres in the USA

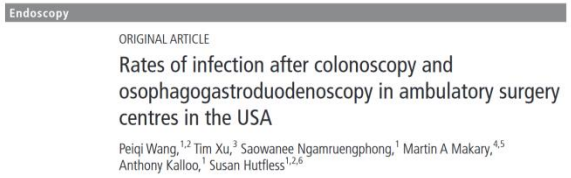
Peiqi Wang,[1,2] Tim Xu,[3] Saowanee Ngamruengphong,[1] Martin A Makary,[4,5] Anthony Kalloo,[1] Susan Hutfless[1,2,6]

Screening colonoscopy (n=462 068)	Non-screening colonoscopy (n=914 140)	OGD (n=873 138)	Screening mammography (n=647 212)	Prostate cancer screening (n=26 428)	Bronchoscopy (n=30 116)	Cystoscopy (n=68 432)

Hygiene

Postendoskopische Infektionen (KH-pflichtig)
pro 1000 Untersuchungen

Vorsorge-Koloskopie	1.1
Diagnostische Koloskopie	1.6
ÖGD	3.0
Bronchoskopie	15.6
Cystoskopie	4.4
Vorsorge-Mammographie	0.6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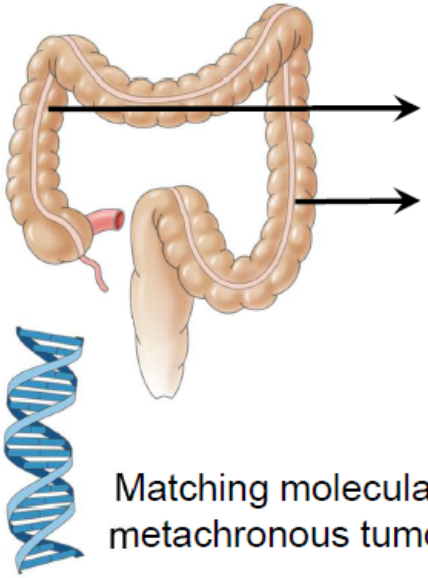
Verschleppen wir nur Keime ?

GastroHighlights '19

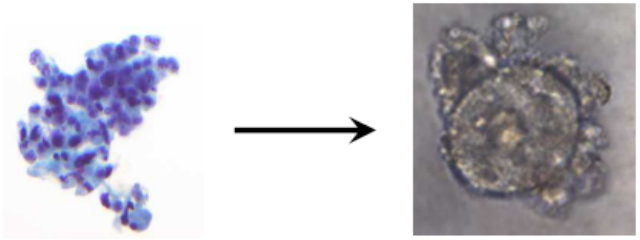
Tumor Seeding During Colonoscopy as a Possible Cause for Metachronous Colorectal Cancer



Primary tumor

Polyp removed after biopsy of the primary tumor. Metachronous tumor detected during follow-up at the same spot.

Matching molecular signature primary and metachronous tumor. No match with polyp.



Potential source of tumor seeding:
Viable tumor cells contaminating the working channel of the colonoscope during biopsy collection

Gastroenterology

Backes et al. Gastroenterology 2019