Surgical Resection of Polyps

Dr. Ahmer A. Karimuddin, MD, FRCSC

Associate (Clin) Professor, General & Colorectal Surgery,

Co-Program Director, General Surgery Residency Program

Disclosure

Speaker
- Servier

Research
- Merck
- Cook
- Covidien

Surgery for Colorectal Polyps

- Why is this a Problem?

- Special Situations & Strategies
  - Colon
  - Appendix / Cecum
  - Rectum

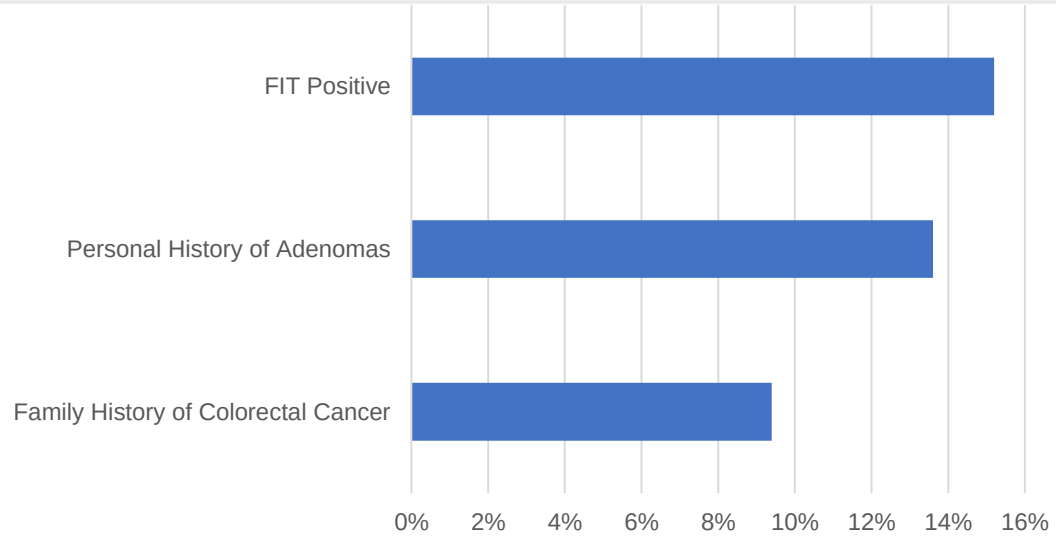
Surgery for Colorectal Polyps

- High Risk Polyp
  - > 10 mm in size
  - Advanced Pathological Features

Given current FIT+ scope volumes, you will see someone like this every few weeks!

BC Cancer Colon Screening 2017 Program Results

Date Published: September 2019



Surgery for Colorectal Polyps

- Peery et al (2018)

Rates of Surgery for Polyps are Increasing!

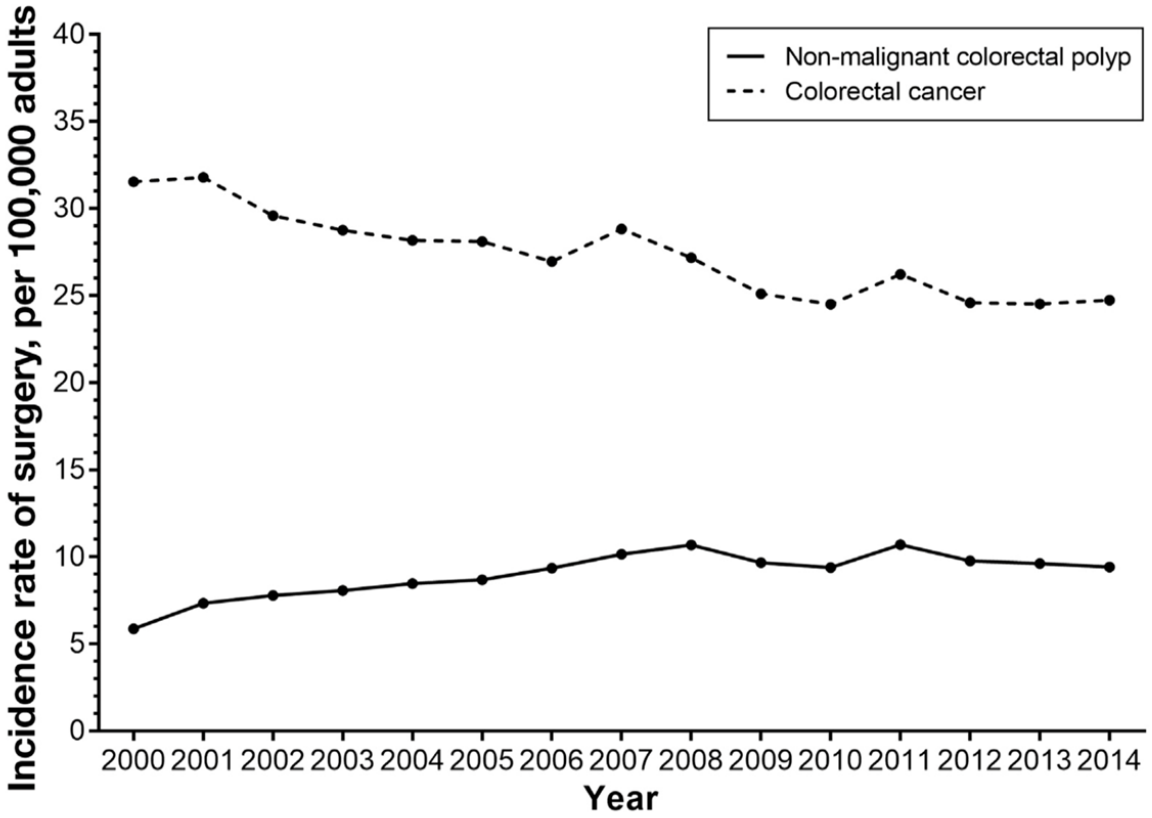
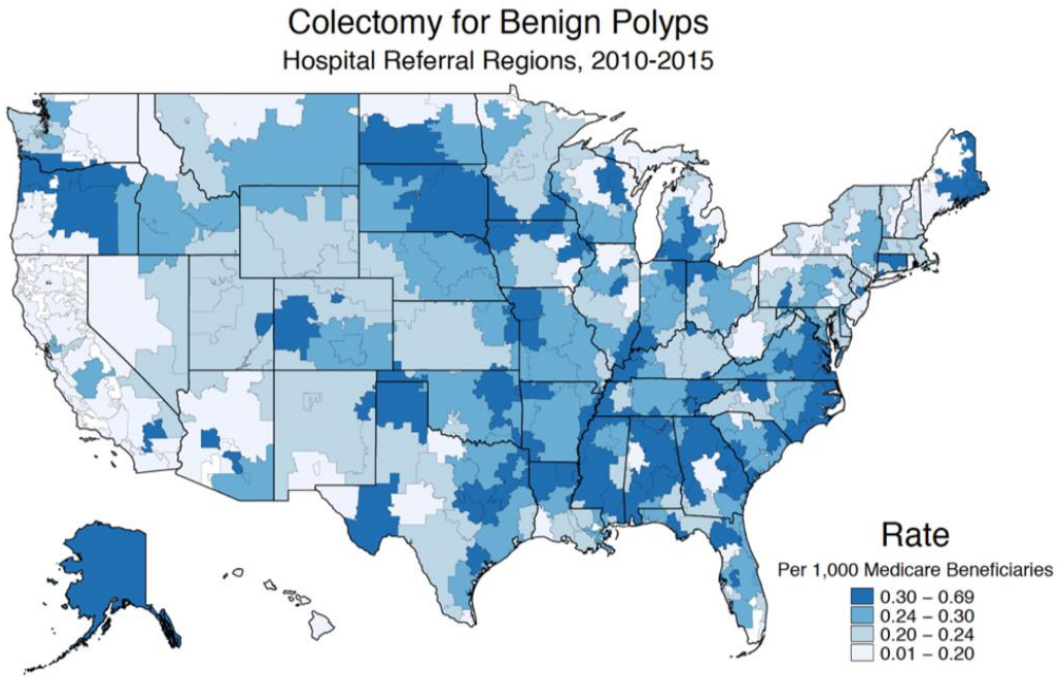


Figure 1. Annual incidence rate for nonmalignant colorectal polyp and colorectal cancer surgery per 100,000 US adults (≥20 years old) in the United States between 2000 and 2014.

Surgery for Colorectal Polyps

- Vu et al (Surg End, 2021)
  - Significant variability in surgery rates
  - No good explanation available



Surgery for Colorectal Polyps

- Who gets referred for surgery?
  - Polyps > 3 cm in size
  - Sessile or flat polyps
  - Right sided colonic polyps
    - Ileocecal valve or Appendix

COLORECTAL SURGERY

Does Cancer Risk in Colonic Polyps Unsuitable for Polypectomy Support the Need for Advanced Endoscopic Resections?

Emre Gorgun, MD, FACS, FASCRS, Cigdem Benlice, MD, James M Church, MD, FACS

ORIGINAL CONTRIBUTION

Colectomy for Endoscopically Unresectable Polyps: How Often Is It Cancer?

Noelle L. Bertelson, M.D.[1] • Kristen A. Kalkbrenner, P.A.-C.[1] • Amit Merchea, M.D.[2]
Eric J. Dozois, M.D.[2] • Ron G. Landmann, M.D.[3] • Giovanni De Petris, M.D.[4]
Tonia M. Young-Fadok, M.D., M.S.[1] • David A. Etzioni, M.D., M.S.H.S.[1]

1 Department of Surgery, Mayo Clinic, Scottsdale, Arizona
2 Division of Colon and Rectal Surgery, Mayo Clinic, Rochester, Minnesota
3 Division of Colon and Rectal Surgery, Mayo Clinic, Jacksonville, Florida
4 Department of Pathology, Mayo Clinic, Scottsdale, Arizona

Techniques in Coloproctology (2017) 21:887–891
https://doi.org/10.1007/s10151-017-1705-x

ORIGINAL ARTICLE

The impact of the national bowel screening program in the Netherlands on detection and treatment of endoscopically unresectable benign polyps

C. C. M. Marres[1] · C. J. Buskens[2] · E. Schriever[1] · P. C. M. Verbeek[1] · M. W. Mundt[3] · W. A. Bemelman[2] · A. W. H. van de Ven[1,2]

Surgery for Colorectal Polyps

- Morbidity and mortality after surgery for nonmalignant colorectal polyps

Anne F. Peery, MD, MSCR,[1] Nicholas J. Shaheen, MD, MPH,[1] Katherine S. Cools, MD,[2] Todd H. Baron, MD,[1] Mark Koruda, MD,[2] Joseph A. Galanko, PhD,[1] Ian S. Grimm, MD[1]

Chapel Hill, North Carolina, USA

Mortality	0.7%
Major Complication	14%
Reoperation	3.6%
Anastomotic Leak	2.6%

Surgery for Colorectal Polyps

- What is the Actual Cancer Risk in Patients Referred for Surgery?

10-18% depending on the case series

ORIGINAL CONTRIBUTION

Laparoscopic Colectomy Using Cancer Principles Is Appropriate for Colonoscopically Unresectable Adenomas of the Colon

Rasmy Loungnarath, M.D.[1] • Matthew G. Mutch, M.D.[2] • Elisa H. Birnbaum, M.D.[2]
Thomas E. Read, M.D.[3,4] • James W. Fleshman, M.D.[2]

1 Centre Hospitalier Universitaire de Montréal, Québec, Canada, Hôpital Saint-Luc
2 Barnes-Jewish Hospital, Washington University in St-Louis, St. Louis, Missouri
3 Lahey Clinic, Burlington, Massachusetts
4 Tufts University School of Medicine, Boston, Massachusetts

J Gastrointest Surg (2012) 16:165–172
DOI 10.1007/s11605-011-1746-9

2011 SSAT PLENARY PRESENTATION

COLORECTAL SURGERY

Oncologic Colorectal Resection, Not Advanced Endoscopic Polypectomy, Is the Best Treatment for Large Dysplastic Adenomas

Joon Ho Jang · Emre Balik · Daniel Kirchoff · Wouter Tromp · Anjali Kumar · Michael Grieco · Daniel L. Feingold · Vesna Cekic · Linda Njoh · Richard L. Whelan

Does Cancer Risk in Colonic Polyps Unsuitable for Polypectomy Support the Need for Advanced Endoscopic Resections?

Emre Gorgun, MD, FACS, FASCRS, Cigdem Benlice, MD, James M Church, MD, FACS

Surgery for Colorectal Polyps

- What is the optimal solution?

All benign polyps should be managed with organ preservation

Surgery for Colorectal Polyps

- What is the optimal solution?

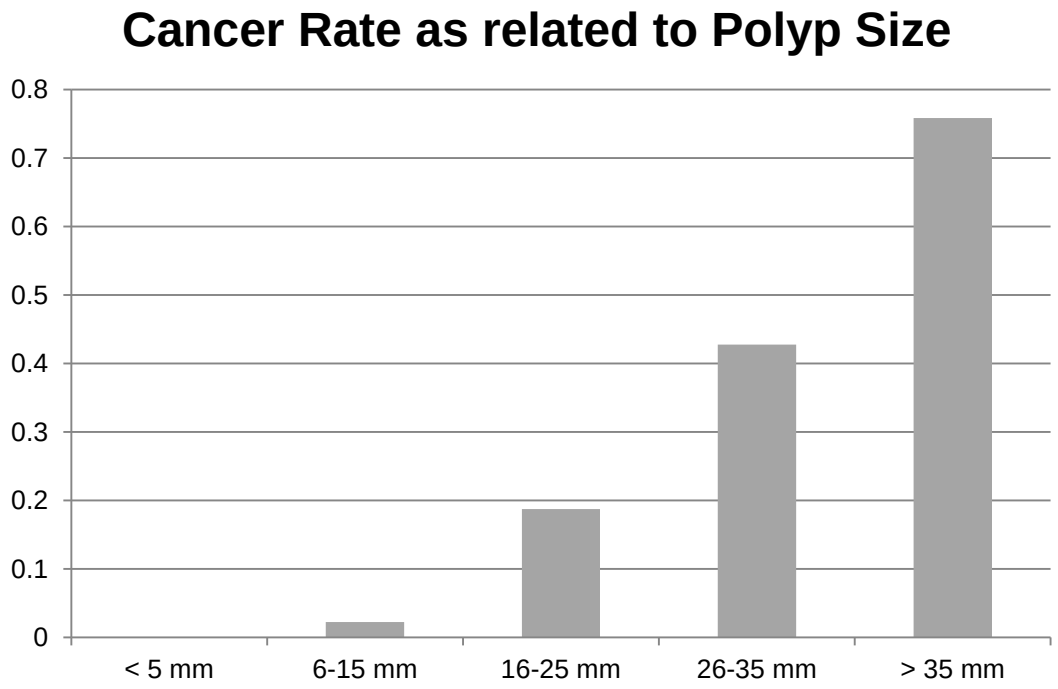
All benign polyps should be managed with organ preservation

- What is the acceptable solution?

Polyps with a reasonable risk of harbouring malignancy should be referred for surgery

Surgery for Colorectal Polyps

As Polyp Size Increases, Risk of Cancer Increases



Surgery for Colorectal Polyps

Endoscopic Mucosal Resection Outcomes and Prediction of Submucosal Cancer From Advanced Colonic Mucosal Neoplasia

CLINICAL–ALIMENTARY TRACT

ALAN MOSS,* MICHAEL J. BOURKE,* STEPHEN J. WILLIAMS,* LUKE F. HOURIGAN,‡ GREGOR BROWN,§ WILLIAM TAM,‖ RAJVINDER SINGH,‖ SIMON ZANATI,¶ ROBERT Y. CHEN,# and KAREN BYTH**

*Department of Gastroenterology and Hepatology, Westmead Hospital, Sydney; ‡Department of Gastroenterology, Princess Alexandra Hospital, Brisbane; §Department of Gastroenterology, The Alfred and Epworth Hospitals, Melbourne; ‖Department of Gastroenterology, Lyell McEwin Hospital, Adelaide; ¶Department of Gastroenterology, The Alfred and Western Hospitals, Melbourne; #Department of Gastroenterology, St Vincent's Hospital, Melbourne; **Department of Biostatistics, School of Public Health, University of Sydney, Sydney, Australia

	n	% of total cohort	n (%) with SMI	*P* value
Paris classification				
Is	146	30.5	11 (7.5)	.001
IIa	222	46.3	9 (4.1)	
IIb	9	1.9	1 (11.1)	
IIc or IIa+c	22	4.6	7 (31.8)	
Is + IIa	80	16.7	5 (6.3)	
III	0	0	0 (0)	
Surface morphology				
Granular	311	64.9	10 (3.2)	<.001
Nongranular	98	20.5	15 (15.3)	
Mixed granular and nongranular	30	6.3	3 (10)	
Unable to classify	40	8.4	5 (12.5)	
Kudo pit pattern				
Pit pattern I	7	1.5	0 (0)	<.001
Pit pattern II	41	8.6	0 (0)	
Pit pattern III	182	38.0	8 (4.4)	
Pit pattern IV	202	42.2	10 (5.0)	
Pit pattern V	25	5.2	14 (56.0)	
Unable to classify	22	4.6	1 (4.5)	

Surgery for Colorectal Polyps

Endoscopic Mucosal Resection Outcomes and Prediction of Submucosal Cancer From Advanced Colonic Mucosal Neoplasia

CLINICAL–ALIMENTARY TRACT

ALAN MOSS,* MICHAEL J. BOURKE,* STEPHEN J. WILLIAMS,* LUKE F. HOURIGAN,‡ GREGOR BROWN,§ WILLIAM TAM,‖ RAJVINDER SINGH,‖ SIMON ZANATI,¶ ROBERT Y. CHEN,# and KAREN BYTH**

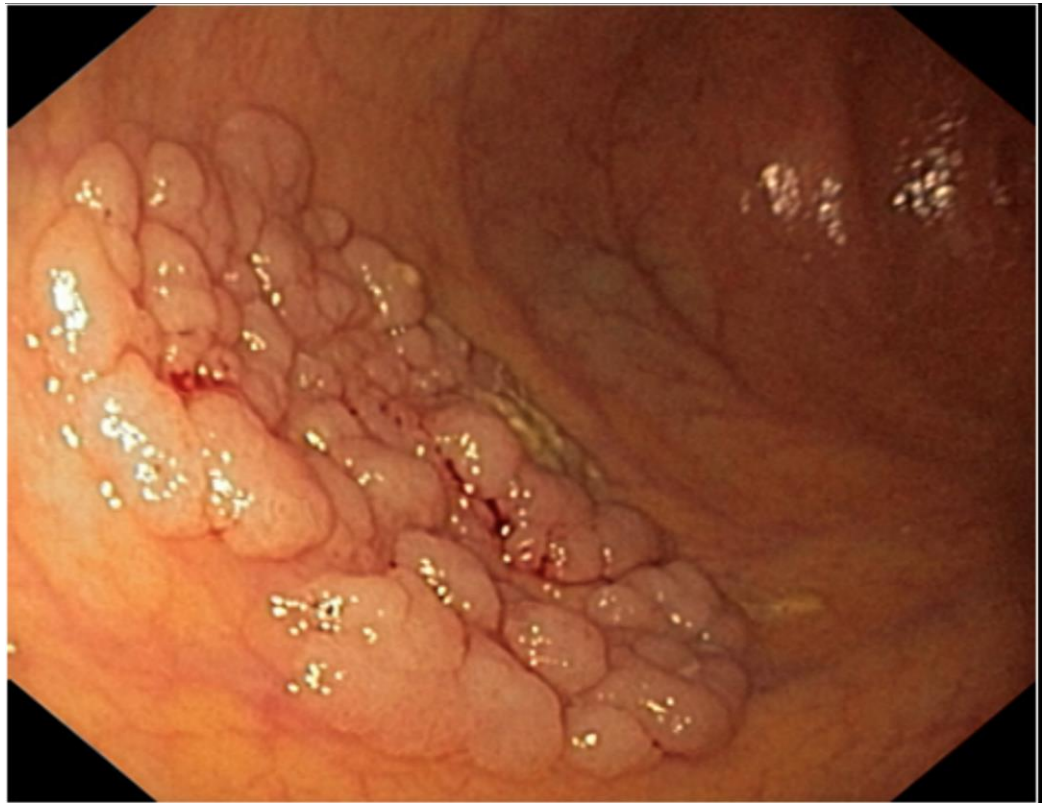
*Department of Gastroenterology and Hepatology, Westmead Hospital, Sydney; ‡Department of Gastroenterology, Princess Alexandra Hospital, Brisbane; §Department of Gastroenterology, The Alfred and Epworth Hospitals, Melbourne; ‖Department of Gastroenterology, Lyell McEwin Hospital, Adelaide; ¶Department of Gastroenterology, The Alfred and Western Hospitals, Melbourne; #Department of Gastroenterology, St Vincent's Hospital, Melbourne; **Department of Biostatistics, School of Public Health, University of Sydney, Sydney, Australia

You cannot risk stratify a polyp, without understanding the Paris or Kudo Classificaiton

	n	% of total cohort	n (%) with SMI	*P* value
Paris classification				
	146	30.5	11 (7.5)	.001
	222	46.3	9 (4.1)	
	9	1.9	1 (11.1)	
	22	4.6	7 (31.8)	
	80	16.7	5 (6.3)	
	0	0	0 (0)	
	311	64.9	10 (3.2)	<.001
	98	20.5	15 (15.3)	
nongranular	30	6.3	3 (10)	
	40	8.4	5 (12.5)	
Pit pattern I	7	1.5	0 (0)	<.001
Pit pattern II	41	8.6	0 (0)	
Pit pattern III	182	38.0	8 (4.4)	
Pit pattern IV	202	42.2	10 (5.0)	
Pit pattern V	25	5.2	14 (56.0)	
Unable to classify	22	4.6	1 (4.5)	

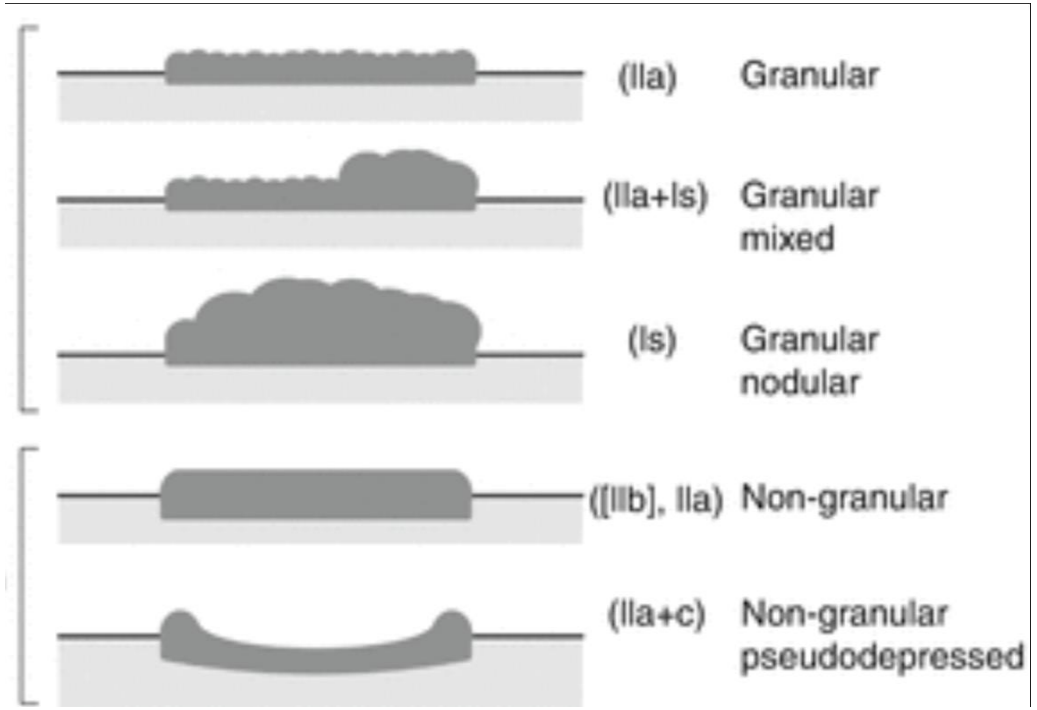
So? What do you do with a Difficult Colonic Polyp?

- Wash, Wash, Wash
- Assess Morphology
  - Paris Classification
  - Pit Pattern
  - What is the Size?
  - What is the Extent of the Polyp?



So? What do you do with a Difficult Colonic Polyp?

- Should you remove it piecemeal?
  - WARNING: Can’t assess margins
  - WARNING: Likely to leave behind tumour



So? What do you do with a Difficult Colonic Polyp?

- Should you remove it piecemeal?
  - WARNING: Can’t assess margins
  - WARNING: Likely to leave behind tumour

So? What do you do with a Difficult Colonic Polyp?

ORIGINAL ARTICLE: Clinical Endoscopy

Large refractory colonic polyps: is it time to change our practice? A prospective study of the clinical and economic impact of a tertiary referral colonic mucosal resection and polypectomy service (with videos)

Michael P. Swan, MBBS, FRACP, Michael J. Bourke, MBBS, FRACP, Sina Alexander, MBBS, FRACP, Alan Moss, MBBS, Stephen J. Williams, MBBS, MD, FRACP

Sydney, Australia

Management of the Difficult Colon Polyp Referred for Resection: Resect or Rescope?

Theodoros Voloyiannis, M.D. • Michael J. Snyder, M.D. • Randolph R. Bailey, M.D. • Mark Pidala, M.D.

University of Texas Houston, Houston, Texas

ORIGINAL CONTRIBUTION

Risk Stratification System for Evaluation of Complex Polyps Can Predict Outcomes of Endoscopic Mucosal Resection

Gaius Longcroft-Wheaton, M.B., B.S., M.D., M.R.C.P.[1] • Moses Duku, M.B., B.S., M.R.C.P.[1]
Robert Mead, M.B., B.S., M.R.C.P.[1] • Peter Basford, M.B., B.S., M.R.C.P.[1]
Pradeep Bhandari, M.B., B.S., M.D., M.R.C.P.[1,2]

1 Department of Gastroenterology, Queen Alexandra Hospital, Portsmouth, United Kingdom
2 Department of Pharmacy and Biomedical Sciences, University of Portsmouth, Portsmouth, United Kingdom

Preoperative Colonoscopy Decreases the Need for Laparoscopic Management of Colonic Polyps

T. Lipof, M.D.,[1] C. Bartus, M.D.,[1] W. Sardella, M.D.,[1,2] K. Johnson, M.D.,[1,2]
P. Vignati, M.D.,[1,2] J. Cohen, M.D.[1,2]

[1] *Department of Surgery, University of Connec*
[2] *Department of Surgery, Hartford Hospital, H*

Ask a friend, even if it means a repeat colonoscopy. Changes management 90% of the time!

So? What do you do with a Difficult Cecal Polyp?

- Deemed endoscopically unresectable by 2 endoscopists
  - Location
  - Size
  - Complexity
- Is a cecal resection sufficient? Does the patient need a right hemicolectomy?

So? What do you do with a Difficult Cecal Polyp?

- Deemed endoscopically unresectable by 2 endoscopists
  - Location
  - Size
  - Complexity
- Is a cecal resection sufficient? Does the patient need a right hemicolectomy?
- Do you think the patient has a cancer?

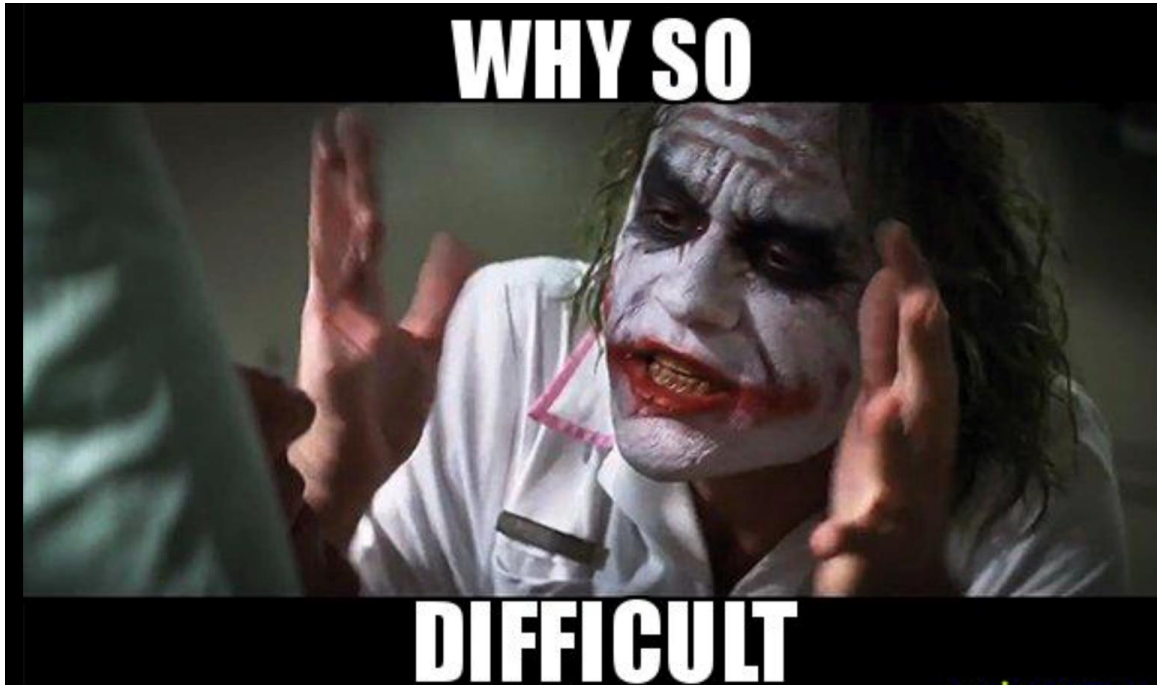
So? What do you do with a Difficult Cecal Polyp?

- Is a cecal resection sufficient? Does the patient need a right hemicolectomy?
- Do you think the patient has a cancer?
- If > 30-40% concern regarding the presence of a cancer:
  - size > 3 cm,
  - Advanced Paris Classification
  - central ulceration
  - No lift sign
  - Right Hemicolectomy is appropriate
- If none of the above
  - Cecal Resection / “Glorified Appendectomy” is reasonable

So? What do you do with a Difficult Rectal Polyp?

- Complex situation
- Decreased risk of perforation, so likely less risk with endoscopic resection
- If directed to surgery, higher risk of requiring an ostomy (albeit temporary)

- So, should you piecemeal it?



So? What do you do with a Difficult Rectal Polyp?

- Complex situation
- Decreased risk of perforation, so likely less risk with endoscopic resection
- If directed to surgery, higher risk of requiring an ostomy (albeit temporary)

- So, should you piecemeal it?

- NO!

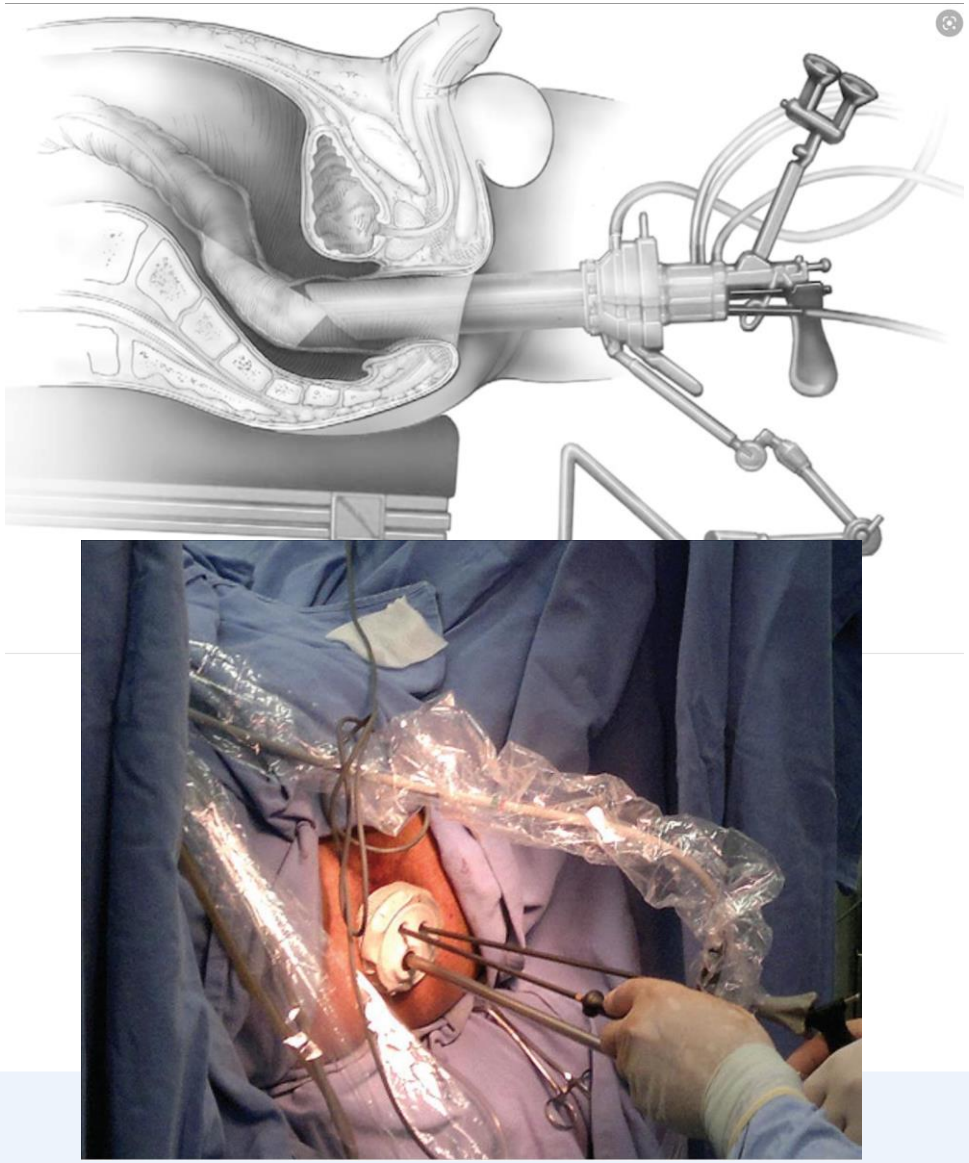
- Unable to assess margins, so a close or a positive margin will necessitate surgery.

- En-bloc resection is necessary

- If reasonable concern re: malignancy, en-bloc, full thickness resection COULD be curative

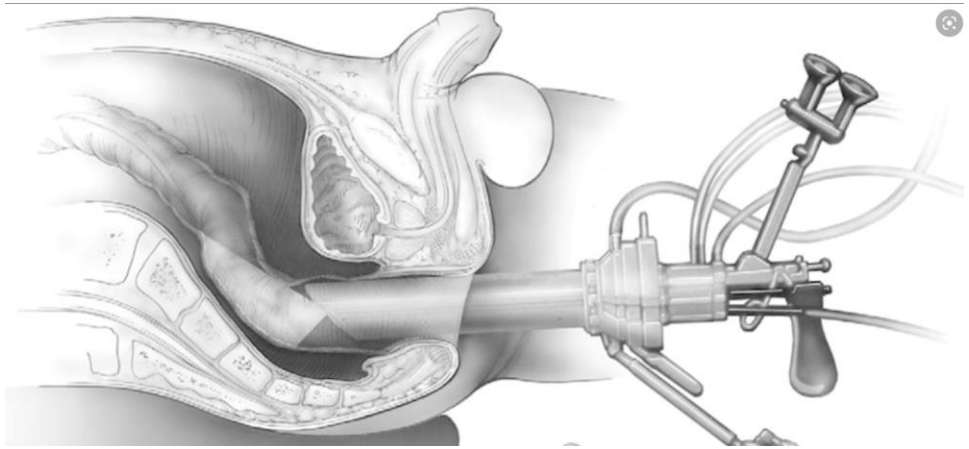
So? What do you do with a Difficult Rectal Polyp?

- Transanal Resection
  - TEMS or TAMIS



So? What do you do with a Difficult Rectal Polyp?

- Transanal Resection
  - TEMS or TAMIS



Original Article

doi:10.1111/codi.14337

Transanal endoscopic microsurgery as day surgery – a single-centre experience with 500 patients

C. J. Brown*†, J. Q. Gentles†, T. P. Phang*†, A. A. Karimuddin*† and M. J. Raval*†

*Department of Surgery, University of British Columbia and St Paul's Hospital, Vancouver, BC, Canada, and †Department of Surgery, University of British Columbia, Vancouver, BC, Canada

Received 19 December 2017; accepted 2 July 2018; Accepted Article Online 10 July 2018

Surgical Endoscopy (2019) 33:849–853
https://doi.org/10.1007/s00464-018-6351-5

Peritoneal perforation during transanal endoscopic microsurgery is not associated with significant short-term complications

Jonathan Ramkumar[1] · Ahmer A. Karimuddin[1,2] · P. Terry Phang[1,2] · Manoj J. Raval[1,2] · Carl J. Brown[1,2]

Surgical Endoscopy (2020) 34:3398–3407
https://doi.org/10.1007/s00464-019-07114-0

Predictors of rectal adenoma recurrence following transanal endoscopic surgery: a retrospective cohort study

Surgical Endoscopy (2019) 33:1976–1980
https://doi.org/10.1007/s00464-018-6501-9

2018 SAGES ORAL

Assessing the safety and outcomes of repeat transanal endoscopic microsurgery

Jonathan Ramkumar[1] · Francois Letarte[2] · Ahmer A. Karimuddin[2,3] · P. Terry Phang[2,3] · Manoj J. Raval[2,3] · Carl J. Brown[2,3]

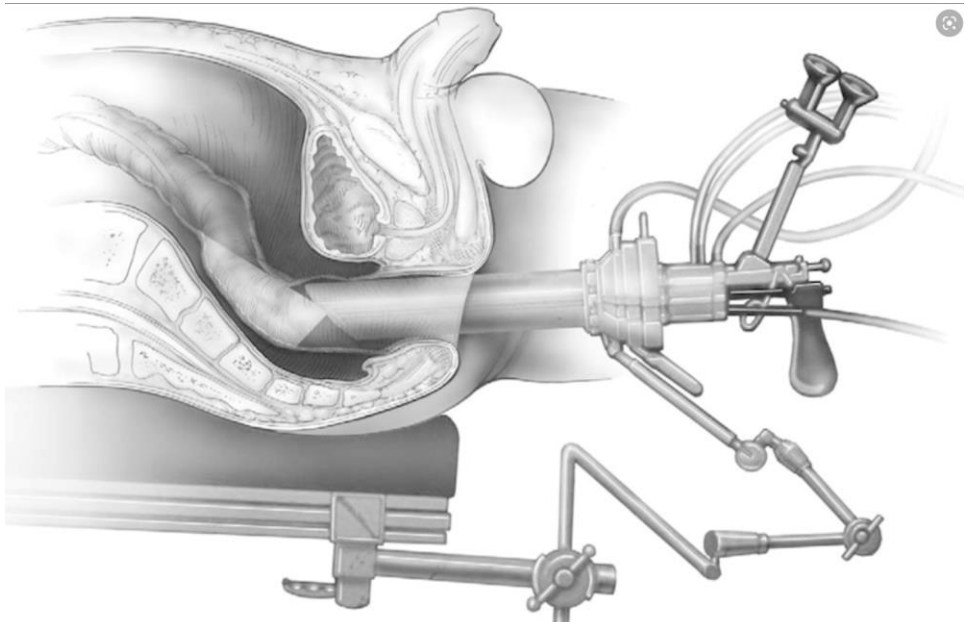
So? What do you do with a Difficult Rectal Polyp?

- Transanal Resection

1048 patients

Male
622 (59.4%)

Female
426 (40.6%)



	Adenocarcinoma	Adenoma	Carcinoid
Pre-Op Diagnosis [2]	25.9%	58.1%	5.0%

[2] N=1036; Records are missing 12 counts (1.1%); 43 counts (4.2%) are noted as N/A

	Mean	SD	Min
OR Duration [2]	51.7	31.1	2.0

[2] N=990; Units in minutes; Records are missing 58 counts (5.5%)

	Full	Partial
Depth of Dissection [3]	86.8%	5.6%

[3] N=1022; Records are missing 26 counts (2.5%); 36 counts (3.5%) are noted as N/A

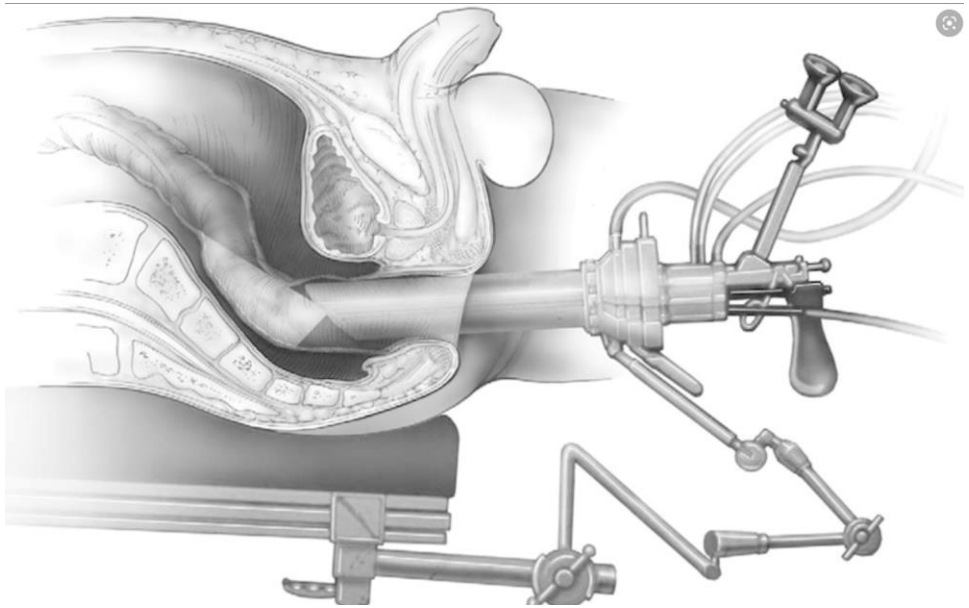
So? What do you do with a Difficult Rectal Polyp?

- Transanal Resection

1048 patients

Male
622 (59.4%)

Female
426 (40.6%)



	Adenocarcinoma	Adenoma	Carcinoid
Pre-Op Diagnosis [2]	25.9%	58.1%	5.0%

[2] N=1036; Records are missing 12 counts (1.1%); 43 counts (4.2%) are noted as N/A

	Mean	SD
Hospital Stay [3]	0.5	1.6

[3] N=1030; Units in days; Records are missing 18 counts (1.7%)

	Bleeding	Infection
Complications	5.5%	7.3%

So? What do you do with Difficult Polyps?

- Any Difficult Colonic Polyp
  - Carefully Assess
    - Size
    - Classification
  - Ask a Colleague for a second opinion
  - If MDC available, then this is the time to use it!
  - Careful discussion with patient
  - If low risk of cancer or high-risk patient, endoscopic techniques
  - If high risk of cancer, surgical resection

So? What do you do with Difficult Polyps?

- Cecal or Appendiceal Polyp
  - If low risk of malignancy, and amenable to a cecal resection, go ahead
  - If high risk of malignancy, then right hemicolectomy

- Rectal Polyp
  - Emphasize en-bloc resection
  - If concern re: malignancy, then focus on full-thickness excision
  - Transanal Surgery is safe, appropriate with acceptable clinical outcomes
    - Low complications
    - Day


THANK YOU
Providence
HEALTH CARE
St Paul's
UBC