

GISCoR

gruppo italiano screening coloretale



CONVEGNO NAZIONALE GISCoR 2023

Hotel Astoria Palace, Palermo



Le lesioni benigne inviate a chirurgia Un indicatore di qualità dei programmi di screening

Renato A. Fasoli

Consulente endoscopia operativa e screening del cancro del colon
Azienda sanitaria locale **Cuneo 1**





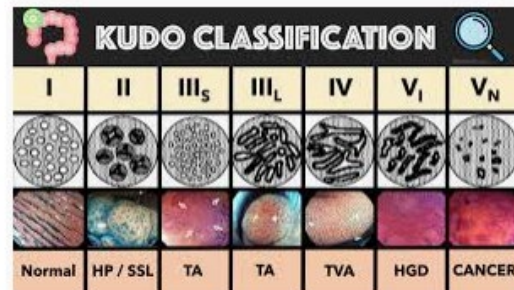
Large colo-rectal lesions (sessile polyps, laterally spreading tumors)

- Endoscopic resection?
- Surgery?
- No evidence from randomized controlled trials



Colo-rectal lesions classifications

Paris Classification



NICE Classification

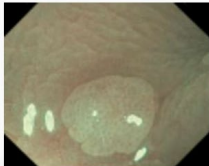
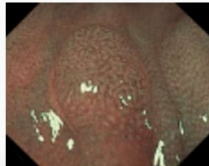
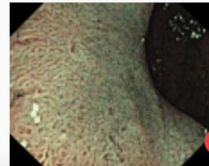
	Type 1	Type 2	Type 3
Color	Same or lighter than background	Brown relative to background (verify color arises from vessels)	Brown to dark brown relative to background; sometimes patchy whiter areas
Vessels	None, or isolated lacy vessels may be present coursing across the lesion	Brown vessels surrounding white structures*	Has area(s) of disrupted or missing vessels
Surface patterns	Dark or white spots of uniform size, or homogeneous absence of pattern	Oval, tubular or branched white structures* surrounded by brown vessels	Amorphous or absent surface pattern
Most likely pathology	Hyperplastic	Adenoma**	Deep submucosal invasive cancer
Sample image			



Table 2. SMSA score with corresponding difficulty

Polyp level	Range of scores
I	4–5
II	6–8
III	9–12
IV	>12
Note: SMSA=size, morphology, site, access	

Parameter	Range	Score
Size	<1 cm	1
	1–1.9 cm	3
	2–2.9 cm	5
	3–3.9 cm	7
	>4 cm	9
Morphology	Pedunculated	1
	Sessile	2
	Flat	3
Site	Left	1
	Right	2
Access	Easy	1
	Difficult	3

Scoring system for determining the difficulty level of a polyp



Emr technical classification

- Injection-assisted Emr
- Ligation-assisted Emr
 - Cap-assisted Emr
 - Underwater Emr
- (Cold snare resection)



Risk factors for adenoma recurrence after endoscopic resection

- Large size (>40 mm)
- Anatomically challenging locations (ileo-cecal valve/appendiceal orifice)
- Incomplete resection
- Previous attempts
- Apc to treat visible residual adenoma
- Intraprocedural bleeding



Snare tip soft coagulation

- Recurrence rate in Emr without margin ablation

this meta-analysis 11%;

- Klein 2019 21%;
- Abu Arisha 2023 31.6%

- Recurrence rate in Emr with margin ablation:

this meta-analysis 3.3%

- Klein 2019 5.2%
- Abu Arisha 2023 3.6%



Recurrence rates after endoscopic resection of large colorectal polyps: A systematic review and meta-analysis



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META-ANALYSIS

Recurrence rates after endoscopic resection of large colorectal polyps: A systematic review and meta-analysis

Carola Rotermund, Roupen Djinbachian, Mahsa Taghiakbari, Markus D Enderle, Axel Eickhoff, Daniel von Renteln

Conclusion: LRR is significantly lower after ESD or EMR with routine margin ablation; thus, these techniques should be considered standard for endoscopic removal of large colorectal polyps. Other techniques, such as CSP, cold EMR, and underwater EMR require further evaluation in prospective studies before their routine implementation in clinical practice can be recommended.

Snare tip soft coagulation

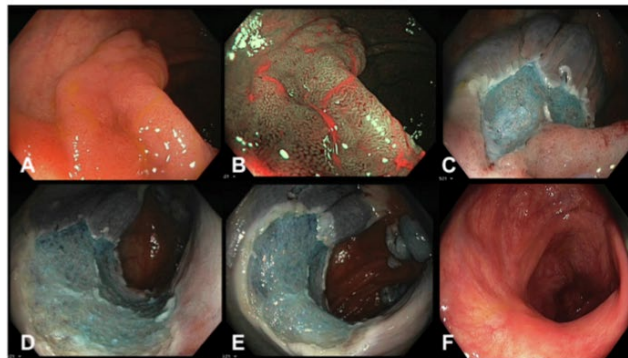


Figure 1. A, B, A 35-mm, Paris IIa, NG lesion, KUDO 3, NICE 2, lateral spreading lesion in the transverse colon. C, D, E, Complete EMR resection with subsequent ablation of the margin. F, Normal-appearing scar at surveillance colonoscopy without evidence of recurrence.



Systematic literature review of learning curves for colorectal polyp resection techniques in lower gastrointestinal endoscopy

A Rajendran^{1 2 3}, S Pannick⁴, S Thomas-Gibson^{1 4}, S Oke^{3 4}, C Anele⁴, N Sevdalis²,
A Haycock^{1 4}

Colorectal Disease, 2020

Table 8. Summary of recommended previous experience, competency markers and learning curve cut-off for lower gastrointestinal polyp resection techniques.

Therapeutic procedure	Suggested previous experience	Suggested competency marker	Suggested cut-off no. of cases (learning curve)
Colonoscopic polypectomy (size < 2 cm)	–	> 80% <i>en bloc</i> resection	250 polypectomies
		DPPB rate < 2%	400 polypectomies
		> 90% independent polypectomy rate	> 300 colonoscopic procedures
Colorectal EMR	Competent in level 2 polypectomy	Recurrence rate < 20%	50 EMRs
	No mentorship	Recurrence rate < 20%	100 EMRs
	Mentorship	Complete resection	300 EMRs
Colorectal ESD	ESD (animal) or UGI ESD (human) and competent in polypectomy/EMR	Resection rates: > 80% <i>en bloc</i> and > 70% R0	20–40 ESDs
	UGI ESD (animal/human)	Procedure (resection speed) plateau and decrease in perforation rates	30 ESDs

DPPB, delayed postpolypectomy bleeding; EMR, endoscopic mucosal resection; ESD, endoscopic submucosal dissection; UGI, upper gastrointestinal.



Surgical resection classification

- Open colectomy
- Laparoscopic-assisted colectomy
- Total laparoscopic colectomy with intracorporeal anastomosis
- Robotic-assisted surgery
- Laparoscopic and endoscopic cooperative surgery (LECS)
- Laparoscopy-assisted endoscopic full thickness resection (LAEFR)



Considerations I

- Type of lesion (large sessile polyps, laterally spreading tumors)
- Site of lesion
- Surgeon (culture, honesty)
- Endoscopist → Resectionist (?) (Shortage – Training)
- Patient (Knowing – Traveling - Spending)



Considerations II

- Sedation
- Overestimation of size
- Time
- Morbidity
- Mortality (surgery 10-40 times > endoscopy, depending on age)
- Costs (surgery >>endoscopy: 9040 vs 2050 US dollars - Swan 2009; 12720 vs 4670 US dollars - Jayanna 2016)



Procedural times

- Endoscopy

- Emr 29 minutes/Esd 67 minutes (Arezzo et al. UEG Journal 2016)
- Emr 26 minutes (+/-33)/Esd 55 minutes (+/-47) (Ham et al. Dig Dis Sci 2020)

- Surgery

- LRHC 159 minutes/RRHC 206 minutes (Solaini et al. Surg End 2018)
- LRHC 149-186 minutes (Rotholz et al., Surg Laparosc Endosc Percutan Tech, 2009)



Concerns

- Colonoscopist's fear of adverse events
- Perceived medico-legal risks of Emr (liability concerns)
- Poor reimbursement for Emr/Esd relative to procedure time
- Financial incentives for surgeons
- Difficulties in sending patients to endoscopic referral centers
- Endoscopic surveillance after Emr
- Reputational risks



Multicenter Study

> Gastrointest Endosc. 2018 Feb;87(2):552-561.e1.

doi: 10.1016/j.gie.2017.10.032. Epub 2017 Nov 3.

Volume of surgery for benign colorectal polyps in the last 11 years

Maxime E S Bronzwaer ¹, Lianne Koens ², Willem A Bemelman ³, Evelien Dekker ¹,
Paul Fockens ¹; COPOS study group

Conclusions: SR for large, complex colorectal polyps is still frequently performed and has remained stable. A small percentage of patients underwent ER attempts before SR, and referral for an additional ER attempt only occurred in a minority of cases. To increase ER attempts, implementation of a regional multidisciplinary referral network should be considered.



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Original article

Thieme

Overutilization of surgical resection for benign colorectal polyps: analysis from a tertiary care center

OPEN
ACCESS



Authors

Rayan Saade¹, Tyler Tsang², Michel Kmeid¹, David Miller², Zhiyan Fu¹, James Litynski³, Patrick Young⁴, Joseph C. Anderson^{5,6}, Hwajeong Lee¹, Micheal Tadros³

Conclusions Of the patients, 41 % could have potentially avoided surgical intervention (37 polyps <2 cm and/or size overestimations precluding endoscopic polypectomy and 22 incomplete resections). When including polyps with size ≥ 2 to <4 cm, the percentage of patients with avoidable surgery reached 80 %. This confirms the need to develop standardized quality metrics for endoscopic polypectomies and for better overall training of endoscopists performing these procedures. Given the risks of surgery, referral to an experienced gastroenterologist should be considered as a first step.

Table 2

Surgical referral patterns.

N = 144	
No attempted endoscopic polypectomy, n (%)	118 (82 %)
Polyp <2 cm, n (%)	26 (18 %)
• Right colon	23 (16 %)
• Left colon	3 (2 %)
Polyp ≥ 2 cm, n (%)	92 (64 %)
• Right colon	66 (46 %)
• Left colon	26 (18 %)
Polyp ≥ 2 cm – <4 cm	56 (39 %)
Polyp ≥ 4 cm	36 (25 %)
Size overestimation, n (%)	18 (13 %)
Polyp <2 cm with size overestimation, n (%)	7 (5 %)
Polyp ≥ 2 cm with size overestimation, n (%)	11 (8 %)
Incomplete endoscopic resection, n (%)	22 (15 %)
Residual polyp <2 cm, n (%)	12 (8 %)
• Right colon	10 (7 %)
• Left colon	2 (1 %)
Residual polyp ≥ 2 cm, n (%)	10 (7 %)
• Right colon	6 (4 %)
• Left colon	4 (3 %)
Serrated polyposis or multiple polyposis syndromes, n (%)	4 (3 %)



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OPINION REVIEW

How to avoid overtreatment of benign colorectal lesions: Rationale for an evidence-based management

Marco Bustamante-Balén



Causes of surgical overtreatment

- Problems in identifying polyps' resection complexity
- Excess in endoscopists' self-confidence
- Lack of a referral pathway

CONCLUSION

Endoscopic resection is the treatment of choice for large colorectal lesions. However, overtreatment is still an important issue in many countries. Organizing a network of specialized endoscopy units in complex resections seems to be the main approach to tackling this situation. This development should be accompanied by the organization of an accreditation system and a Quality Management Program, a process in which endoscopy units, endoscopists, Scientific Societies, and the Public Administration should be involved.



Editorial > [Gastrointest Endosc.](#) 2020 Jan;91(1):132-134. doi: 10.1016/j.gie.2019.09.025.

What can colonoscopists do now to move management of large benign laterally spreading lesions in the colorectum from surgery to EMR?

Douglas K Rex ¹

TABLE 1. Considerations for increasing endoscopic resection of laterally spreading lesions

System changes

- Endorse recommendations¹⁹ that endoscopic resection be performed by experts
- Establish institutional policies that require review of all benign lesions by an expert in EMR before they can be scheduled for surgical resection
- Establish a referral relationship with an expert in EMR in or outside your group; use photography (see below) in the referral to improve triage of the lesion for rapid versus routine timing of resection and planning resection
- Clarify your role in follow-up surveillance with the EMR expert

Technical steps when a laterally spreading lesion is encountered at colonoscopy and referral to an expert in EMR is planned

- Learn the NICE classification;²⁰ for NICE 3 changes⁸ (specific for deep submucosally invasive cancer), perform biopsy of the affected area and refer to surgery
- If NICE 3 features are missing, and referral for endoscopic resection is planned, do not perform biopsy of the lesion or snare resection of any portion of the lesion
- Do not tattoo in the cecum
- Do not allow tattoos to extend under the lesion
- If an attempt is made to perform EMR and does not successfully resect the lesion, refer to an EMR expert; do not make multiple attempts yourself
- Take several photographs of the lesion and from multiple perspectives if possible



The first part of the table lists system changes that could increase or improve EMR of large laterally spreading lesions. The second part has technical steps during colonoscopy that community colonoscopists can take to improve the ease and effectiveness of EMR if referral to experts is planned.



ORIGINAL ARTICLE | CLINICAL ENDOSCOPY | VOLUME 70, ISSUE 6, P1128-1136, DECEMBER 2009

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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

Published: September 14, 2009 • DOI: <https://doi.org/10.1016/j.gie.2009.05.039>

Conclusions

Colonoscopic polypectomy performed by a TRCPS on large or difficult polyps is technically effective and safe. This approach results in major cost savings and avoids the potential complications of colonic surgery. This type of clinical pathway should be developed to enhance patient outcomes and reduce health care costs.

Australia



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DOI: 10.1055/a-0970-8828



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Original article

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Clinical and financial impacts of introducing an endoscopic mucosal resection service for treatment of patients with large colonic polyps into a regional tertiary hospital

Thomas Worland , Oliver Cronin , Benjamin Harrison , Linda Alexander , Nik Ding , Alvin Ting , Stephanie Dimopoulos , Racheal Sykes , Sina Alexander

Conclusions The introduction of a dedicated EMR service into a large regional center as an alternative to SR can lead to a substantial decrease in unnecessary surgery with subsequent clinical and financial benefits.

Australia



> Clin Res Hepatol Gastroenterol. 2021 Mar;45(2):101488. doi: 10.1016/j.clinre.2020.06.014.
Epub 2020 Jul 25.

**Effect of implementing a regional referral network
on surgical referral rate of benign polyps found
during a colorectal cancer screening program: A
population-based study**

Rébecca Rodrigues ¹, Sophie Geyl ², Jérémie Albouys ³, Christelle De Carvalho ⁴,
Mickael Crespi ⁵, Tessa Tabouret ⁶, Abdelkader Taibi ⁷, Sylvaine Durand-Fontanier ⁸,
Romain Legros ⁹, Martin Dahan ¹⁰, Paul Carrier ¹¹, Denis Sautereau ¹²,
Véronique Loustaud-Ratti ¹³, Sébastien Kerever ¹⁴, Jérémie Jacques ¹⁵

More recently, in France, a study evaluated the evolution of surgical management of benign polyps > 2 cm after the implementation of a regional referral network for the management of these lesions. This regional care network included two specialized endoscopists in the referral center with direct access by e-mail or by phone to all general gastroenterologists in the region and with twice-a-year regular meetings with general gastroenterologists. The surgical management rate of benign lesions decreased significantly after the implementation of the referral network from 14.6% in 2012 to 5% in 2017.

France



> [Gastrointest Endosc.](#) 2022 Jul;96(1):84-91.e2. doi: 10.1016/j.gie.2022.02.003. Epub 2022 Feb 10.

Setting up a regional expert panel for complex colorectal polyps

Liselotte W Zwager ¹, Barbara A J Bastiaansen ¹, Evelien Dekker ¹, Paul Fockens ¹;
Expert Panel Group ¹

Conclusions: Our study shows that implementation of and consultation with a regional expert panel can be a valuable tool for endoscopists to guide and optimize treatment of complex colorectal polyps and facilitate interhospital referrals in a regional network.

Holland



Conclusions

- The attitude to treat large colorectal lesions is not easy to assess and measure
- All in all procedural times, costs and safety profiles favor endoscopic treatment over surgical treatment in large pedunculated/sessile/flat lesions with absent/low probability of deep submucosal invasion
- In expert hands endoscopic treatment achieves excellent results (→margin ablation!)
- Promote the creation of a virtuous path to have difficult cases evaluated and treated by expert endoscopic teams before referring patients to surgeons

