

Endometriosis for the surgeon

Prof F. Ris

Prof G. Meurette, PD Dr N. Pluchino

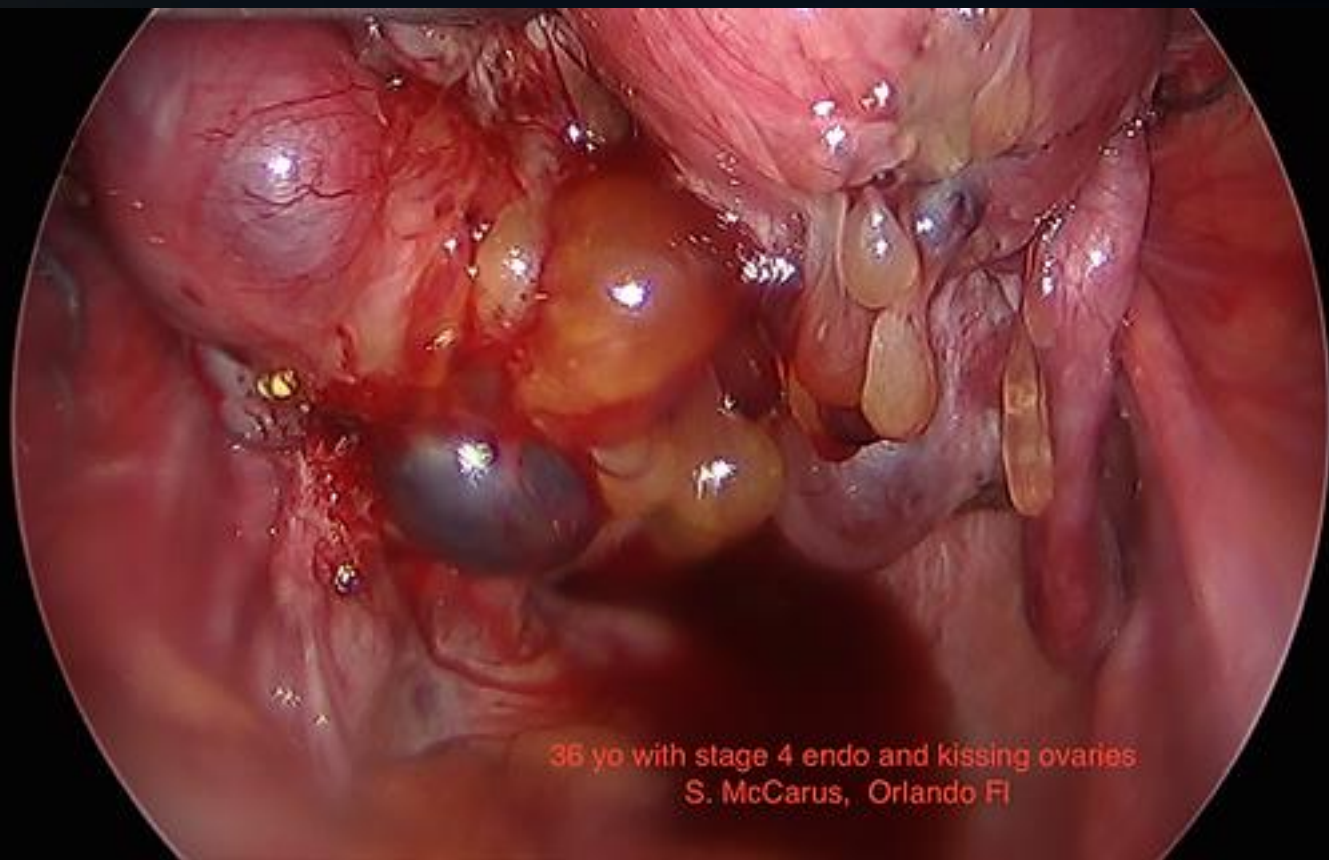
Geneva University Hospitals, Geneva Switzerland



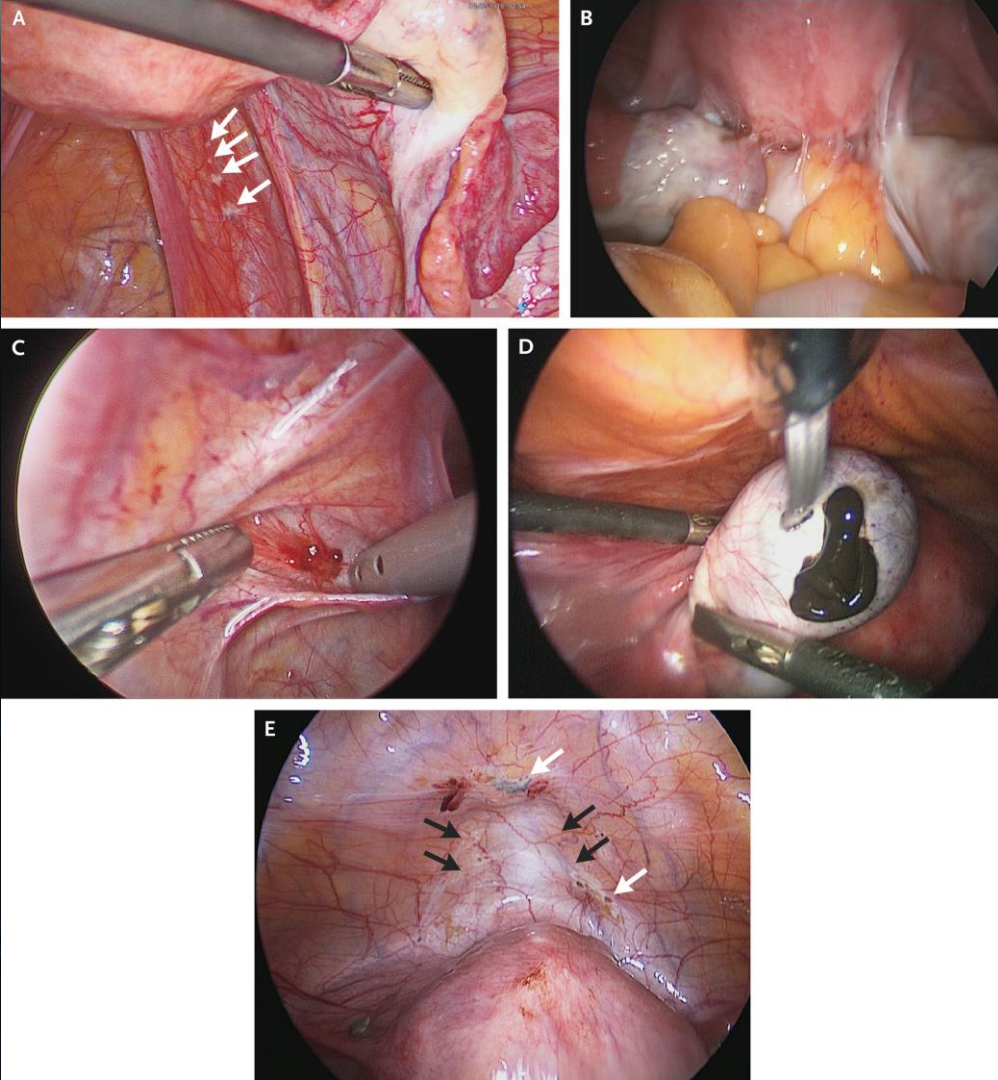
Definition

Terms and definitions for endometriosis, subtypes and locations

Term	Definition
Endometriosis	A disease characterized by the presence of endometrium-like epithelium and/or stroma outside the endometrium and myometrium, usually with an associated inflammatory process.
Peritoneal / superficial endometriosis	Endometrium-like tissue lesions involving the peritoneal surface. The lesions can have different appearances and colour e.g. clear, black, etc.
Ovarian endometriotic cyst / endometrioma	Endometrium-like tissue in the form of ovarian cysts. They may be either invagination cysts or true cysts with the cyst wall also containing endometrium-like tissue and dark blood-stained fluid, the colour and consistency of which gives rise to the name 'chocolate cysts'.
Deep endometriosis	Endometrium-like tissue lesions in the abdomen, extending on or under the peritoneal surface. They are usually nodular, able to invade adjacent structures, and associated with fibrosis and disruption of normal anatomy.



36 yo with stage 4 endo and kissing ovaries
S. McCarus, Orlando Fl



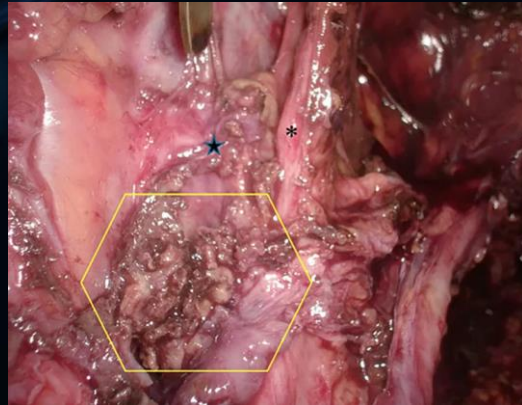
Chocolate cyst...

Zondervan et al., New England Journal of Medicine,
2020 382(13) , 1244-1256

Definition

Some scar tissue that induce pain, infertility and bladder trouble that can be anywhere in the abdominal cavity and is related to hormonal cycle in women that can have children

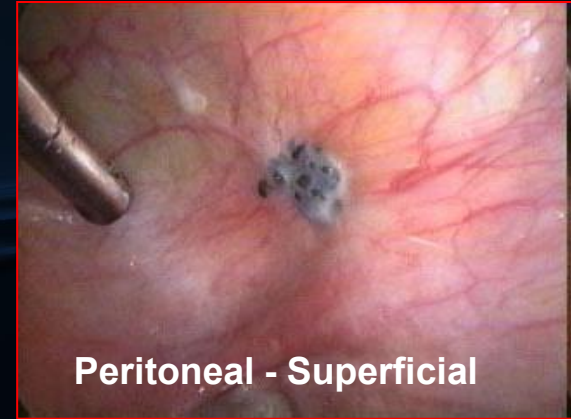
Can touch the digestive system



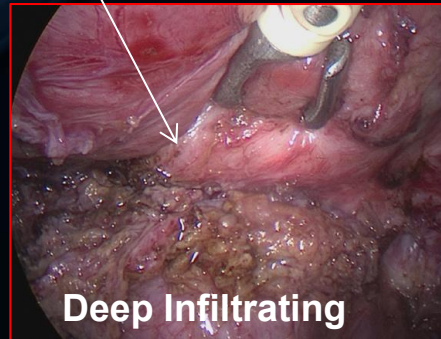
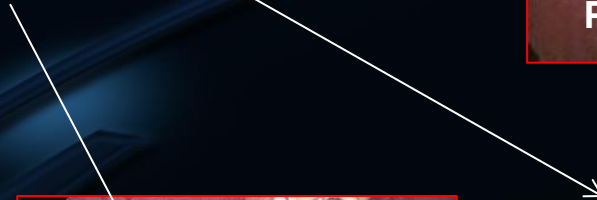
Endometriosis is an heterogeneous disease



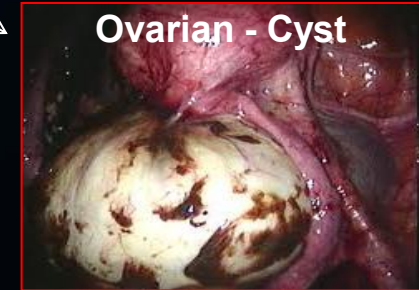
**Endoscopic
Surgical
rASRM
classification
(1990-2000)**



Peritoneal - Superficial



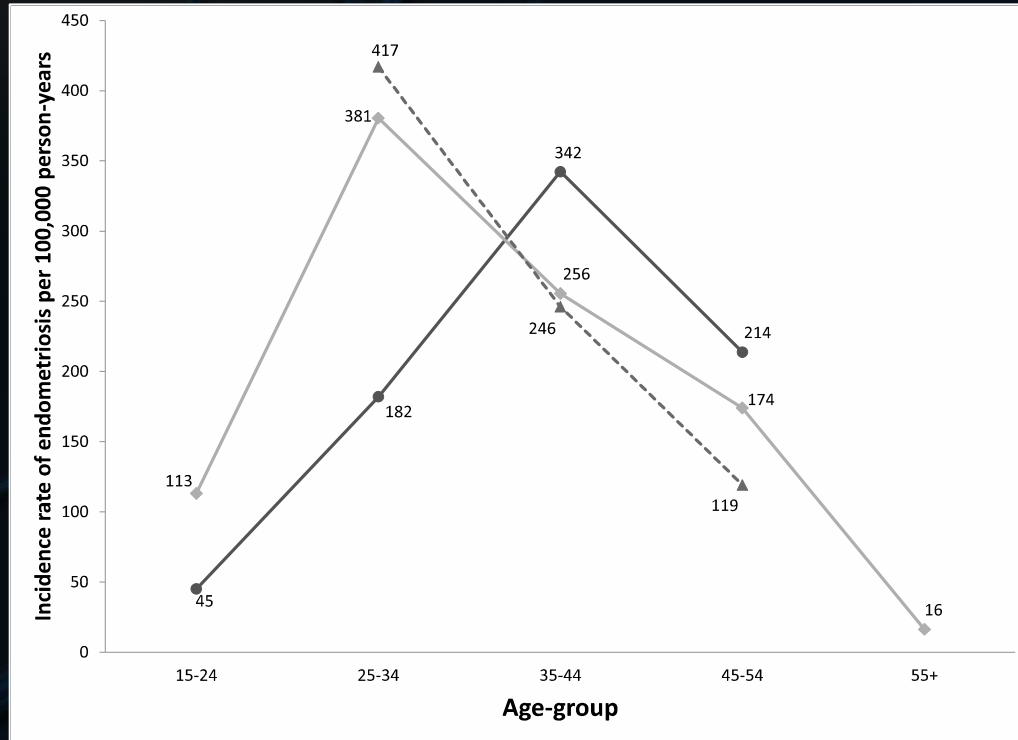
Deep Infiltrating



Ovarian - Cyst

Who?

-10% of fertile women(190 millions in the world)



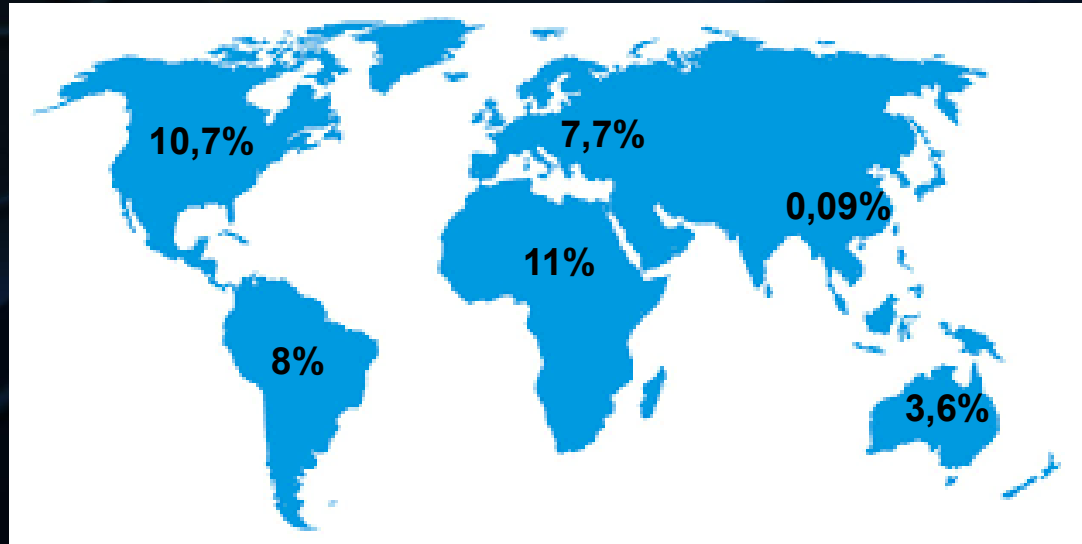
Eskenazi et al. Obstet Gynecol Clin N Am 1997

- Houston et al.
(histologique, 1970)
- Leibson et al.
(clinique, 1990)
- - - Missmer et al.
(histologique, 1990)

Shafrir et al. Best Practice and Research 2018

Who?

Variations according to geografic area



Endometriosis is a frequent condition

- The general female (<50 years) population: 6-10%
- Women investigated for pelvic pain: 50%
(severe dysmenorrhea, Dyspareunia, Chronic Pain)
- Adolescents with severe pelvic pain: 60%
- Infertile and sub-fertile women: 30-40%
- Female fetuses and newborns: 10%
- Asymptomatic patients: 30%



Endo March – Geneva 2018

Liu et al 1986 Moen 1991 Giudice et al 2004 Janssen et al 2013
Signorile et al 2012

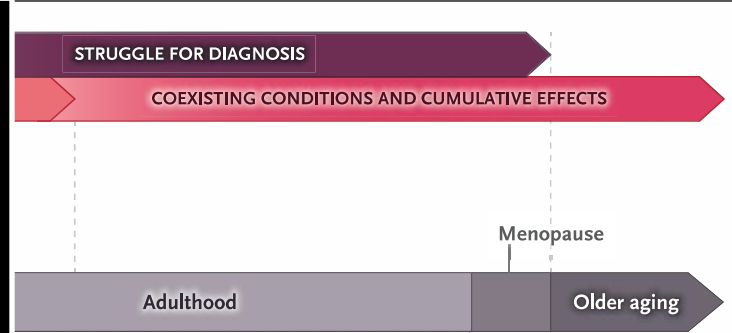
Disease evolution

Strong Family history

OR= 5,2 if a sister with the disease

OR= 1,6 if a cousin

Passing to the next generation around 50%



Probable Risk Factors	Low birth weight Small for gestational age Müllerian anomalies	Early age at menarche Low body-mass index	Short menstrual cycles Increased menstrual flow Low body-mass index Nulliparity
Possible Risk Factors	Diethylstilbestrol	Sun sensitivity	Low waist-to-hip ratio No or short-duration lactation Dysplastic nevi or moles Consumption of red meat and trans fats Endocrine-disrupting chemicals

Why colorectal surgeons should care ?

Bowel disease sits at the intersection of pain surgery, pelvic anatomy, and functional preservation.

≈10%

affected overall during
reproductive years

5–12%

bowel involvement among
endometriosis cases

up to 90%

of bowel lesions are
rectosigmoid or lower

years

diagnosis is still frequently
delayed

When should a colorectal surgeon suspect it?

High-yield clues

- cyclical dyschezia
- deep dyspareunia or chronic pelvic pain
- cyclical constipation/diarrhea or tenesmus
- infertility history
- young patient with normal colonoscopy but persistent symptoms

When should a colorectal surgeon suspect it?



Common traps

- labelled as **IBS** or “functional bowel disease”
- **hemorrhoids** blamed for bleeding
- **isolated** focus on the lumen
- under-reading of the **pelvic history**

A negative colonoscopy does not rule it out

Beware of IBS

Endometriosis and irritable bowel syndrome: A systematic review and meta-analyses

Michelle Y. Nabi¹, Samal Nauhria², Morgan Reel¹,
Simon Londono¹, Anisha Vasireddi¹, Mina Elmiry¹ and
Prakash V. A. K. Ramdass^{1*}

¹Department of Public Health and Preventive Medicine, School of Medicine, St. George's University, St. George's, Grenada, ²Department of Pathology, School of Medicine, St. Matthew's University, George Town, Cayman Islands

IBS more frequent in
endometriosis!
OR 2.96

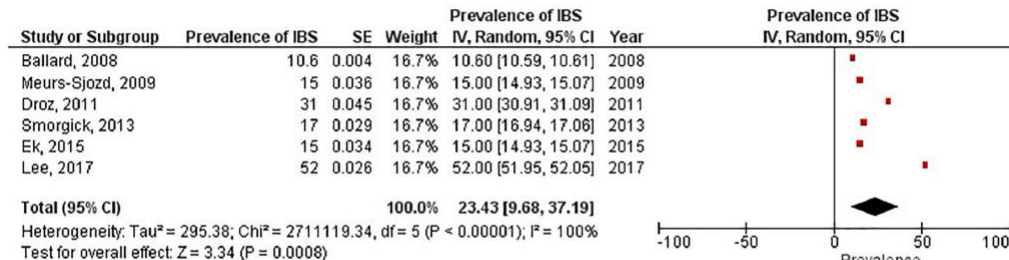


FIGURE 6

Forest plot by prevalence of IBS.

TABLE 2. Results of Routine Clinical Examination for Women with DIE

Examination	DIE		p
	Anterior (n = 11)	Posterior (n = 149)	
Positive speculum inspection	0 (0.0)	23 (15.4)	0.33
Positive vaginal touch	8 (72.7)	131 (87.9)	0.33
Painful nodules	5 (45.4)	64 (42.9)	0.87
Painful induration	3 (27.3)	67 (44.9)	0.40

DIE = deeply infiltrating endometriosis.
Values are number (%).

Physical assessment

TABLE 3. Results of Routine Clinical Examination for women with Posterior DIE

Examination	Posterior DIE			p
	USL (n = 102)	Vaginal (n = 30)	Intestinal (n = 17)	
Positive speculum inspection	3 (2.9)	16 (53.3)	4 (23.5)	<0.0001
Positive vaginal touch	85 (83.3)	30 (100.0)	16 (94.1)	0.03
Painful nodules	34 (33.3)	24 (80.0)	6 (35.3)	<0.0001
Painful induration	51 (50.0)	6 (20.0)	10 (58.8)	0.005

USL = uterosacral ligaments; DIE = deeply infiltrating endometriosis.
Values are number (%).

Locations of deep infiltrating endometriosis: correlation of physical findings with surgical and pathologic findings.

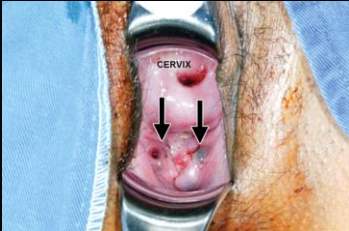
PE	Sensitivity	Specificity	PPV	NPV	Accuracy
USLs	73.5% (61/83)	77.8% (7/9)	96.8% (61/63)	24% (7/29)	73.9% (68/92)
Vagina	50% (15/30)	87% (54/62)	65.2% (15/23)	78.3% (54/69)	75% (69/92)
RV septum	18.2% (2/11)	96.3% (78/81)	40% (2/5)	89.7% (78/87)	86.9% (80/92)
Intestine	46% (29/63)	72.4% (21/29)	78.4% (29/37)	38.2% (21/55)	54.4% (50/92)

Note: USLs = uterosacral ligaments; RV septum = rectovaginal septum; PPV = positive predictive value; NPV = negative predictive value; PE = physical examination.

Bazot. TVS, RES, and MRI for surgery in deep endometriosis. Fertil Steril 2009.

Chapron et al Am J laproscopic J 2002

Bazot et al Fertil steril 2009



Be sure there is no organic complication

Bowel obstruction?

Localisation	ORa
Bowel lesion	ORa 14,6 (11,4-18,8)
Posterior lesion	ORa 2 (1,5-2,6)
Endometriosis	ORa 2,6 (2,3-3,0)

Aldhaferi JOGC 2021



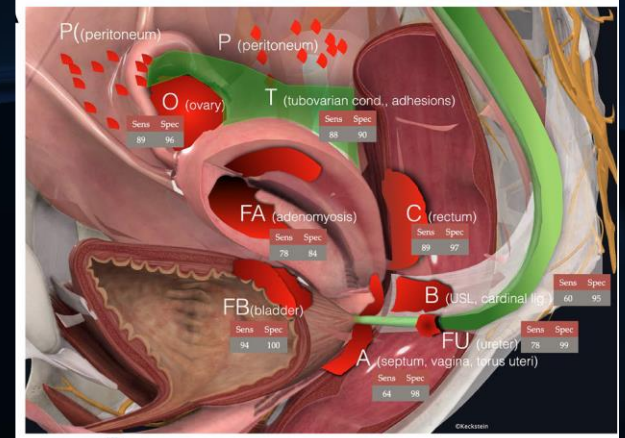
investigations

Endoscopy (colonoscopie)
Entero-MRI ou Entero-CT
Pelvic MRI
Endorectal ultrasound

Bowel Endometriosis

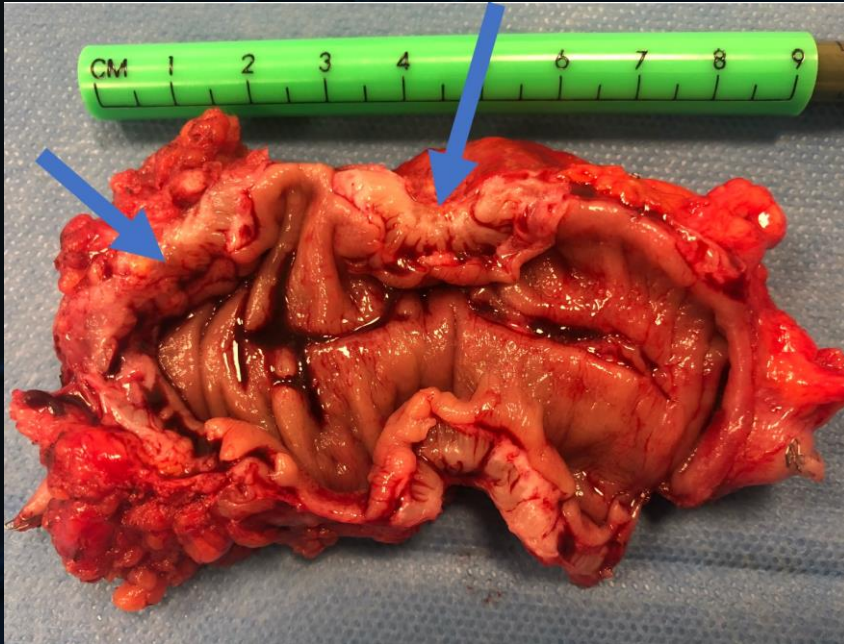
8–12% women with Endometriosis
30-37% of patients with diagnosis
of deep endometriosis

10-11.5% in the lower rectum,
21-23.0% in the middle rectum
15-19.3% in the upper rectum
22-24.2% in the sigmoid colon
...appendix, ceacum, small bowel



Liu et al 1986 Moen 1991 Giudice et al 2004
Janssen et al 2013
Signorile et al 2012

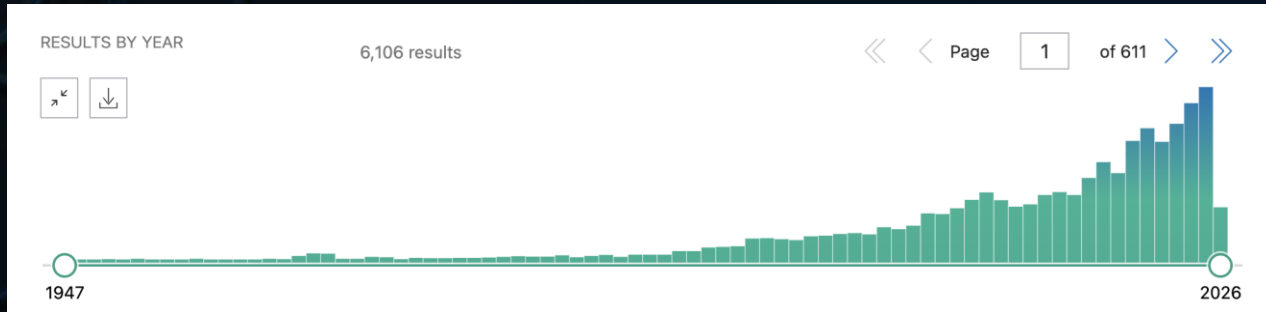
Bowel Endometriosis Can Be Multifocal





**Functional outcomes are the
real endpoint**

pelvic pain and endometriosis



Central sensitization inventory in endometriosis

Orr, Natasha L.^{a,b}; Wahl, Kate J.^{a,b}; Lisonek, Michelle^b; Joannou, Angela^b; Noga, Heather^c; Albert, Arianne^c; Bedaiwy, Mohamed A.^{a,b,c}; Williams, Christina^{a,b}; Allaire, Catherine^{a,b,c}; Yong, Paul J.^{a,b,c,*}

[Author Information](#) 

PAIN 163(2):p e234-e245, February 2022. | DOI: 10.1097/j.pain.0000000000002351

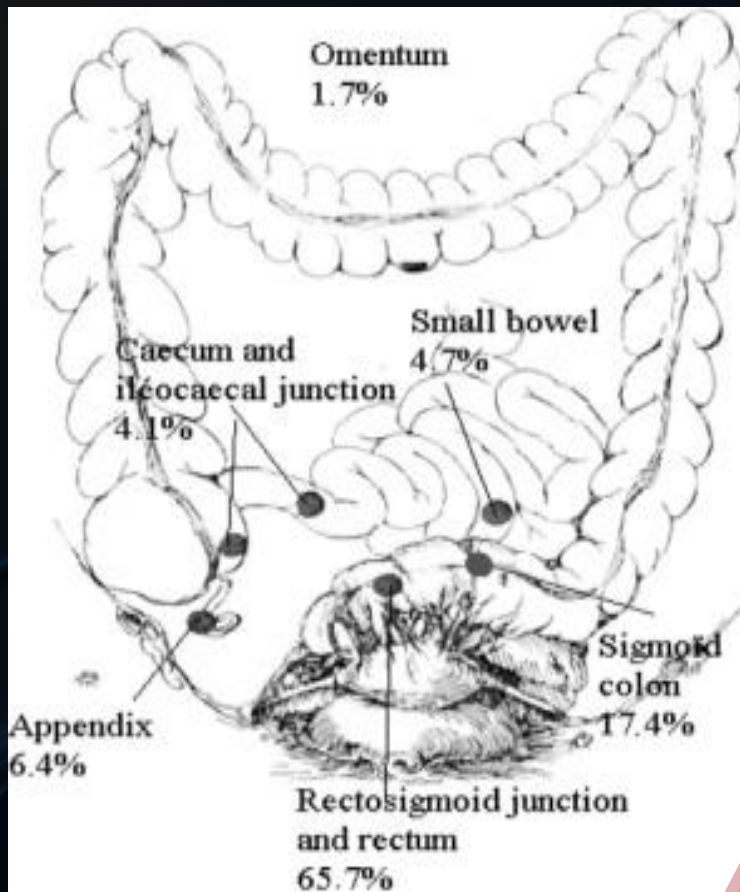
Pain 2022

Objectives: pain and endometriosis without improvement of symptoms with classical treatments.

Prospective study, 335 patients (36,0 ± 7,0 years)

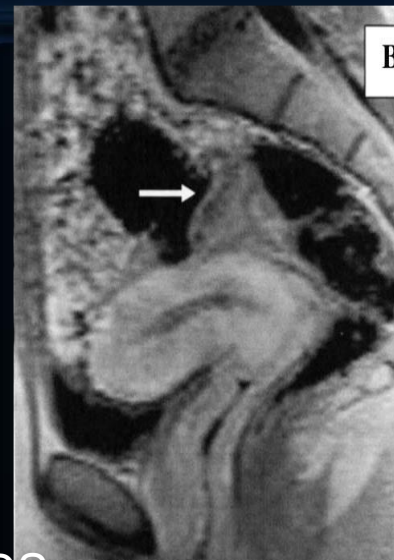
CS corelated to dysmenorrhea, deep dyspareunia, dyschésie and chronic pelvic pain(P < 0,001),

CSI score ≥ 40 : central sensibilisation endometriosis
(sens: 78%, spe: 80%)



Chapron et al. Human reprod 2006

*



Obstruction: ODS
 «*Dyschesia*» painful exoneration
 bleeding

Hormones

Compte tenu des données d'efficacité et des effets indésirables potentiels :

- Danazol et DMPA: non recommandés en raison des effets indésirables

Medical Treatments

ents antérieurs

tiels :

leur p

ésirables

Pre- and postsurgical medical therapy for endometriosis (Review)

Chen I, Veth VB, Choudhry AJ, Murji A, Zakhari A, Black AV, Agarwal C, Maas JWM

Progestin

Oral

with endometriosis (Review)

2020

2018

Cochrane Library

Cochrane Database of Systematic Reviews

Pre-surgical medical therapy compared with placebo or no medical therapy for endometriosis

Patient or population: women having endometriosis surgery

Intervention: pre-surgical medical therapy

Comparison: placebo or no medical therapy

Outcomes	Illustrative risk	Relative effect (95% CI)	No. of participants (studies)	Quality of the evidence (GRADE)	Comments
Pain (continuous)	343 per 1000	RR 2.10 (1.14 to 4.02)	352 (1 study)	Very low	Very low
Pain recurrence (discontinuous)	343 per 1000	RR 2.10 (1.14 to 4.02)	352 (1 study)	Very low	Very low
Pain recurrence < 12 months (discontinuous)	343 per 1000	RR 2.10 (1.14 to 4.02)	352 (1 study)	Very low	Very low
Disease recurrence < 12 months (discontinuous)	343 per 1000	RR 2.10 (1.14 to 4.02)	352 (1 study)	Very low	Very low
Frequency rate (discontinuous)	343 per 1000	RR 2.10 (1.14 to 4.02)	352 (1 study)	Very low	Very low

Authors' conclusions

Our results indicate that the data about the efficacy of medical therapy for endometriosis are inconclusive related to the timing of hormonal suppression therapy relative to surgery for endometriosis. In our various comparisons of the timing of hormonal suppression therapy, women who receive postsurgical medical therapy compared with no medical therapy or placebo may experience benefits in terms of pain recurrence, disease recurrence, and pregnancy. There is insufficient evidence regarding hormonal suppression therapy at other time points in relation to surgery for women with endometriosis.

Post-surgical medical therapy compared with placebo or no medical therapy for endometriosis

Patient or population: women having endometriosis surgery

Intervention: post-surgical medical therapy

Comparison: placebo or no medical therapy

Outcomes	Illustrative risk	Relative effect (95% CI)	No. of participants (studies)	Quality of the evidence (GRADE)	Comments
Pain (continuous)	343 per 1000	RR 2.10 (1.14 to 4.02)	352 (1 study)	Very low	Very low
Pain recurrence (discontinuous)	343 per 1000	RR 2.10 (1.14 to 4.02)	352 (1 study)	Very low	Very low
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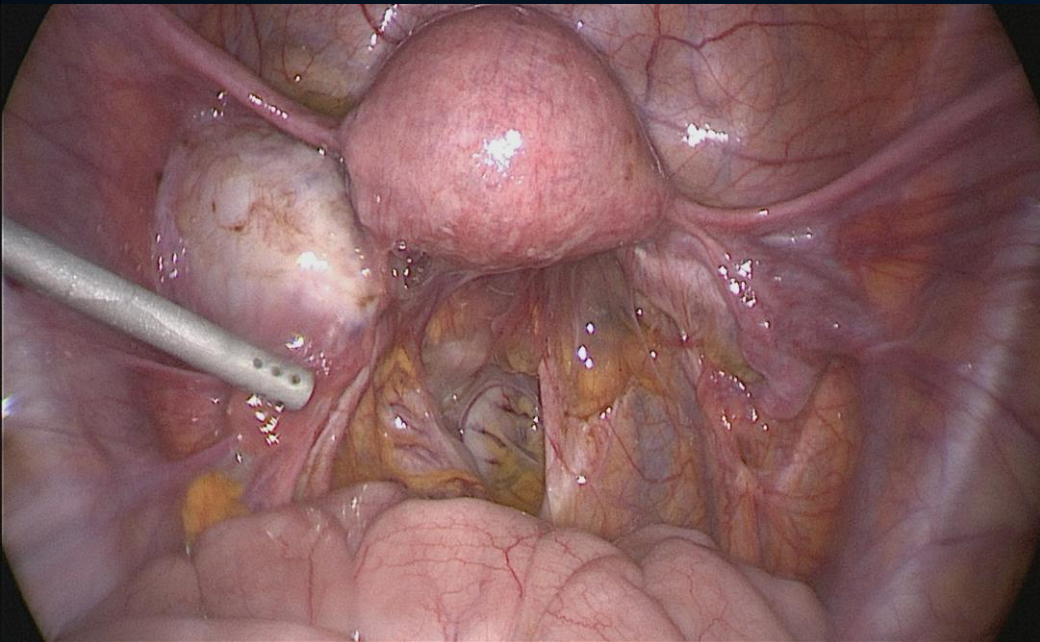
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Ulipristal

Asoprisnil

ate de Leuprolide



Surgical options



Shaving



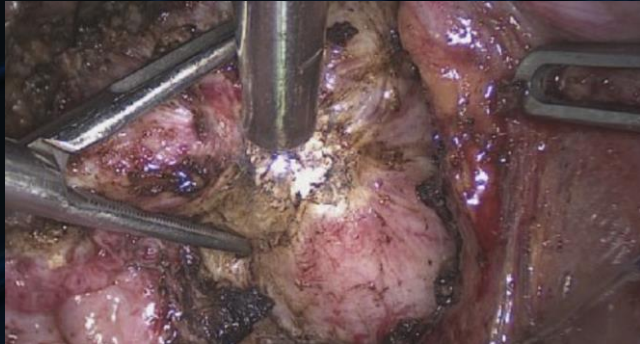
Discoid
resection



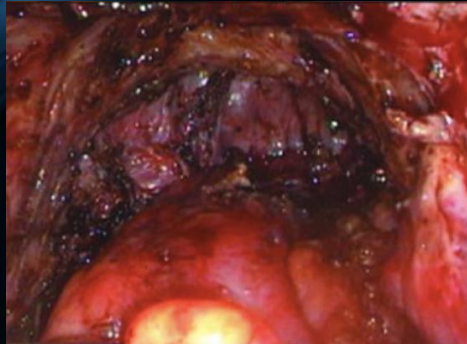
Segmental
resection

Surgical options

Shaving

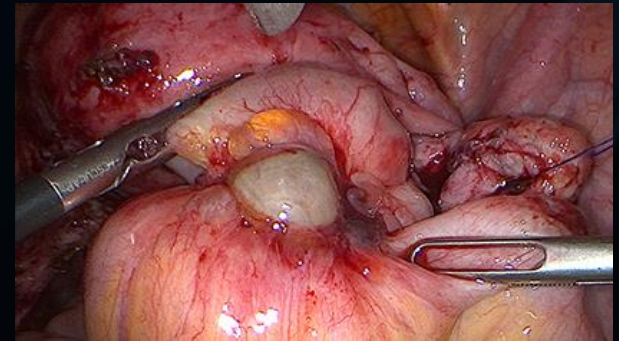


Discoid
resection



Roman et al . 2025 Diseases of the Colon &
Rectum 58(10):957-966

Segmental
resection



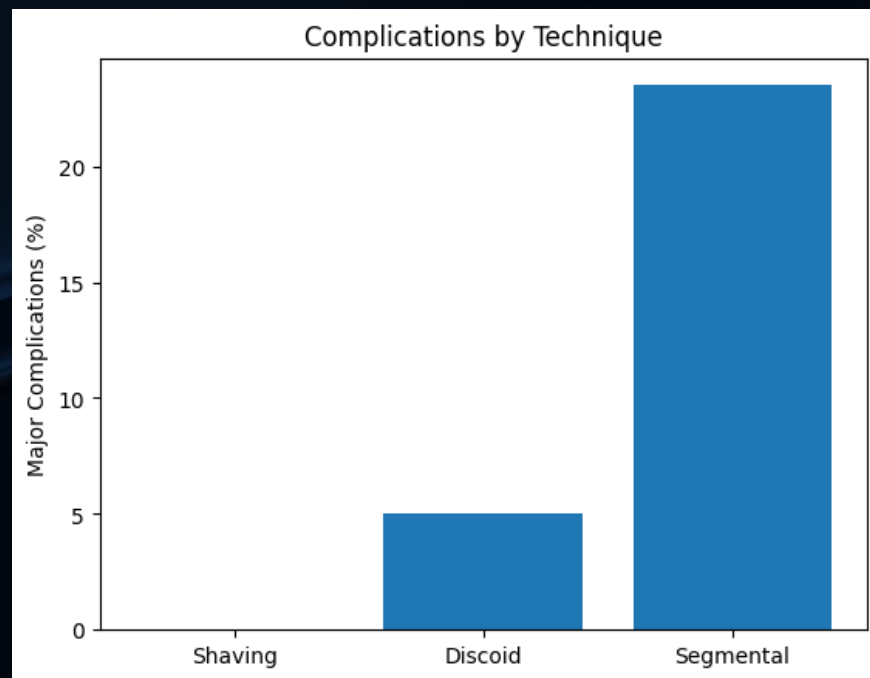
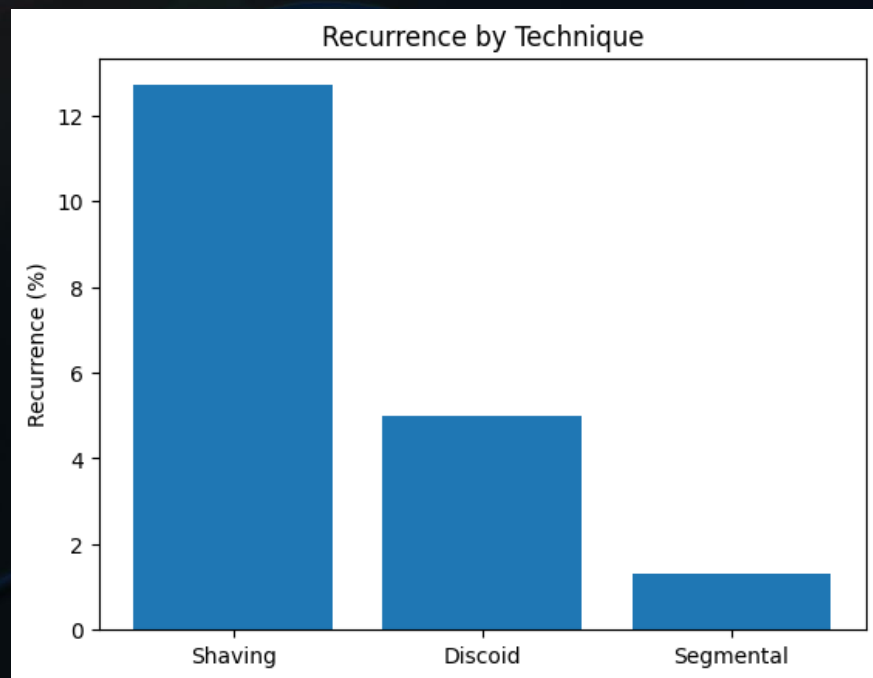
<https://profdrvirabratisla.com/deep-infiltrating-endometriosis-die/>

How to choose?

Shaving has low risk but high recurrence

Discoid resection middle risk, middle recurrence

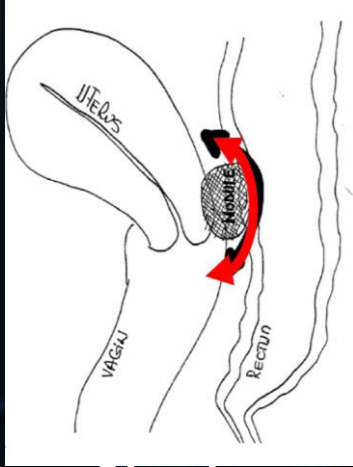
Radical resection high risk, low recurrence



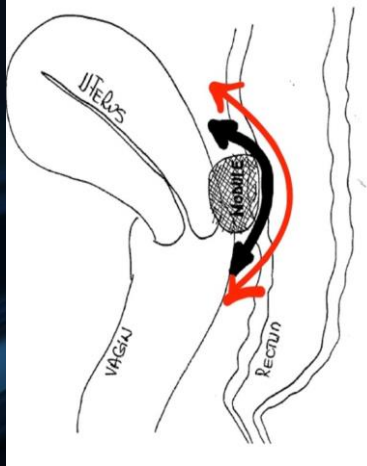
Bendifallah S, J Minim Invasive Gynecol, 2020

Bowel Endo Surgery

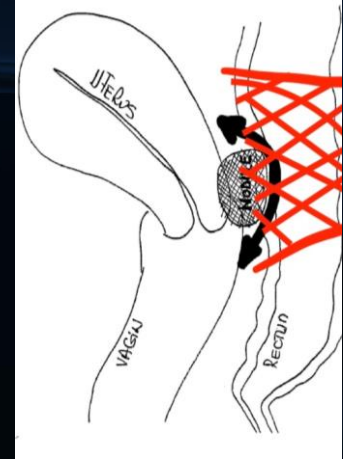
Three more common techniques



Shaving



Disk Excision



Segmental Resection

Persistence/Recurrence

Morbidity

Bowel Shaving

Follow the endometriosis edges

Very low complications rate

- Late perforation in 1-2.2%
- Fistula in 0.5-1%

No negative consequence of bowel function –
LARS syndrome

Recurrence 4% (3y) and 8.7-12% (5y) →
Reoperation rate 15%

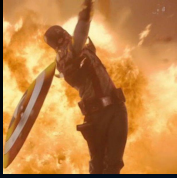
- Lesions <3 cm
- Always for infiltration of superficial muscularis
- To be privileged in elderly women or less symptomatic women.



Bowel Shaving



Disc Excision

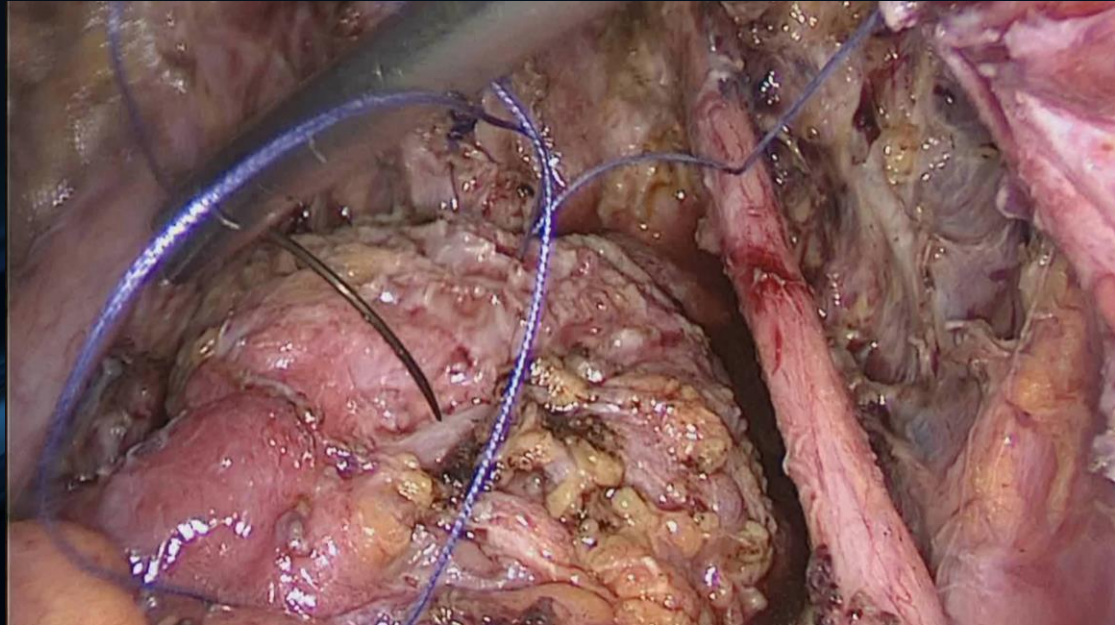


Full thickness excision followed by suture:

- direct, by stitches
- EEA transanal stapler

COMPLETE EXCISION with:

- no bowel denervation
- minimal bowel volume reduction
- up to 4 cm



Full thickness disc excision



Disc Excision

Full thickness excision followed by suture:

- direct, by stitches
- EEA transanal stapler

COMPLETE EXCISION with:

- no bowel denervation
- minimal bowel volume reduction
- up to 4 cm

Full thickness disc excision



Nezhat et al 1994,
Gordot et al, 2001, Donnez and Roman, 2018
Roman and Ceccaroni 2022



Circular stapler specimen

Colorectal Segmental Resection

Most commonly performed procedure in colorectal surgery
Highly standardized technique, en bloc resection with the nodule

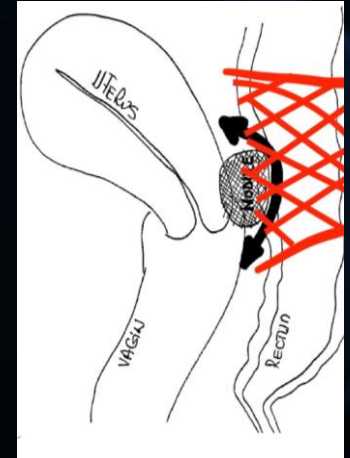
Indications:

1. Large subocclusive nodule
2. Nodules with extended bowel infiltration
3. Circumferential lesions
4. Multifocal rectal lesions (< 5–7 cm apart)

Outcomes & Risks:

- Residual microscopic disease: up to 30% at 3 cm margin
- Recurrence rate: **1–2%**
- Risk of LARS (especially in low rectal resection)
- Anastomotic stenosis: 8–18% (ENDORE)

Braund et al. 2020; Bertocchi et al. 2019; Meuleman et al. 2010



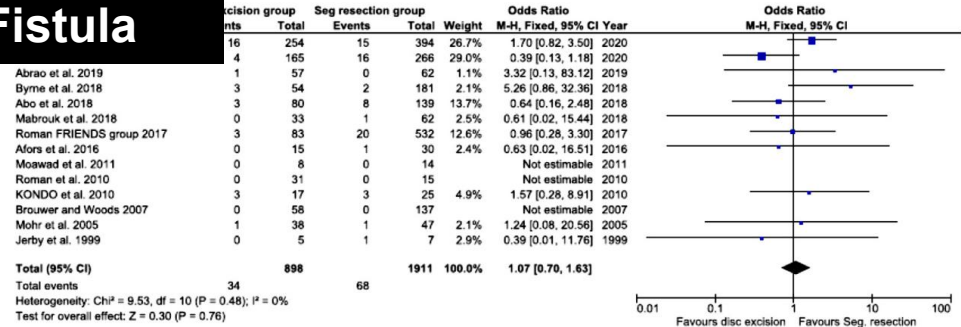
Segmental Resection

Disc excision vs Segmental resection

Less operating time
Less hospital stay
Less voiding dysfunction
>30 days and >30 days
Less anastomotic stenosis

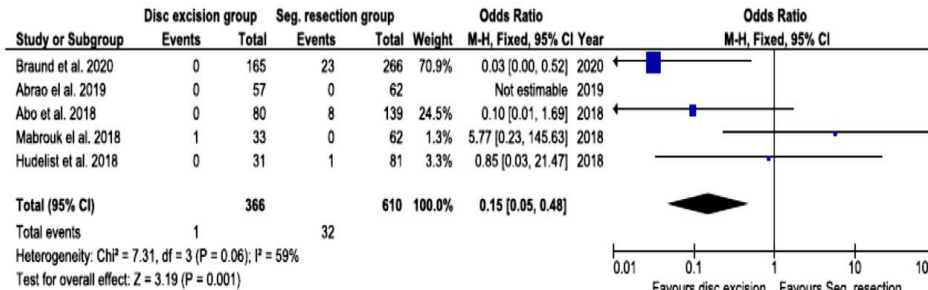
RV Fistula

perianal fistula comparing rectal discoid and segmental colorectal resections. CI = confidence interval.



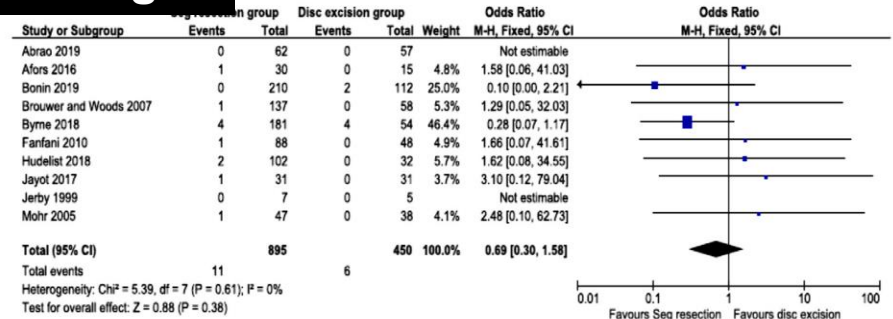
Stenosis

anastomotic stenosis comparing rectal discoid and segmental colorectal resections. CI = confidence interval.



Leakage

anastomotic leakage comparing rectal discoid and segmental colorectal resections. CI = confidence interval.



Disc excision vs Segmental resection

Better function using discoid (n=108) vs resection (n=64)

172 women with rectal lesions
≤8cm from the anal verge

Function:
LARS score better discoid

Complications
RV fistula 7.4 vs 7.8 p=NS
Leakage 8.3 vs 9.3%

Symptoms	Rectal disc excision N= 108(62.8%)	Rectal segmental resection N= 64(37.2%)	*p-value
Frequency of defecation			
>7 times per day	1(0.9)	5(7.9)	<.001
4-7 times per day	7(6.4)	10(15.8)	
1-3 times per day	51(47.2)	37(58.7)	
≤once per day	49(45.3)	11(17.4)	
Clustering of stools			
Never	50(46.3)	16(25.4)	.02
<once per week	28(25.9)	23(36.5)	
≥once per week	30(27.7)	24(38.1)	
Urgency			
Never	52(48.1)	22(34.9)	.05
<once per week	37(34.2)	20(31.7)	
≥once per week	19(17.6)	21(33.3)	
LARS score (0-42)			
No LARS 0-20	66(61.1)	27(42.9)	.04
Minor LARS 21-29	20(18.5)	21(33.3)	
Major LARS 30-42	22(20.3)	15(23.8)	

Endometriosis surgery

1. Be radical

On endometriosis-associated symptoms

On the disease (reduce recurrence of disease)

2. Be conservative

On organ function (ovary, bladder, bowel)

On anatomy (fertility issue)

3. Be honest

With yourself

With the patient (inform, share goals, respect her wishes)

Functional outcomes are the real endpoint

What often improves

- dyschezia and cyclical pain
- pelvic pain burden
- quality of life when surgery is well selected
- symptom control in stenotic disease

Functional outcomes are the real endpoint

What can worsen

- LARS-like bowel dysfunction
- constipation, urgency, or clustering
- urinary and sexual dysfunction
- residual symptoms despite technically complete surgery

Is the robot useful?

✓ Precision

✗ No Tremor

✓ Consistency

✓ Endurance

✓ Data Processing



Robotic evidence

Study / design	Main comparison	Signal for robotics	Main caution
Ong 2024 Systematic review	RALS for bowel DIE	Feasible and safe in expert hands	Evidence mostly IDEAL 2b / retrospective
Piozzi 2024 Single-centre series	68 robotic bowel endometriosis cases	Low conversion and acceptable short-term morbidity	No direct matched laparoscopy arm
Choi 2025 Multidisciplinary series	Advanced multivisceral disease	Short LOS and low major morbidity in expert MDT	Highly selected cases
Pavone 2024 + Csirzó 2024 Meta-analyses	Robotic vs conventional laparoscopy	No clear perioperative superiority	Longer operative time; benefit may be contextual
Osaki 2025 Observational	Operative time drivers	Complex intestinal disease may be where robotics earns its keep	Platform itself still adds time on average

Comparative pregnancy rate after colorectal resection versus other surgical procedures for deep infiltrating rectal endometriosis: a systematic review and meta-analysis

Alexandre Vallée^{1✉}, Pierre-François Ceccaldi^{2,3}, Marie Carbonnel^{3,4}, Silvia Horsman³, Rouba Murtada³, Gaby Moawad⁵, Anis Feki⁶ & Jean-Marc Ayoubi^{3,4}



Adobe Stock | #28140200

Colorectal vs other

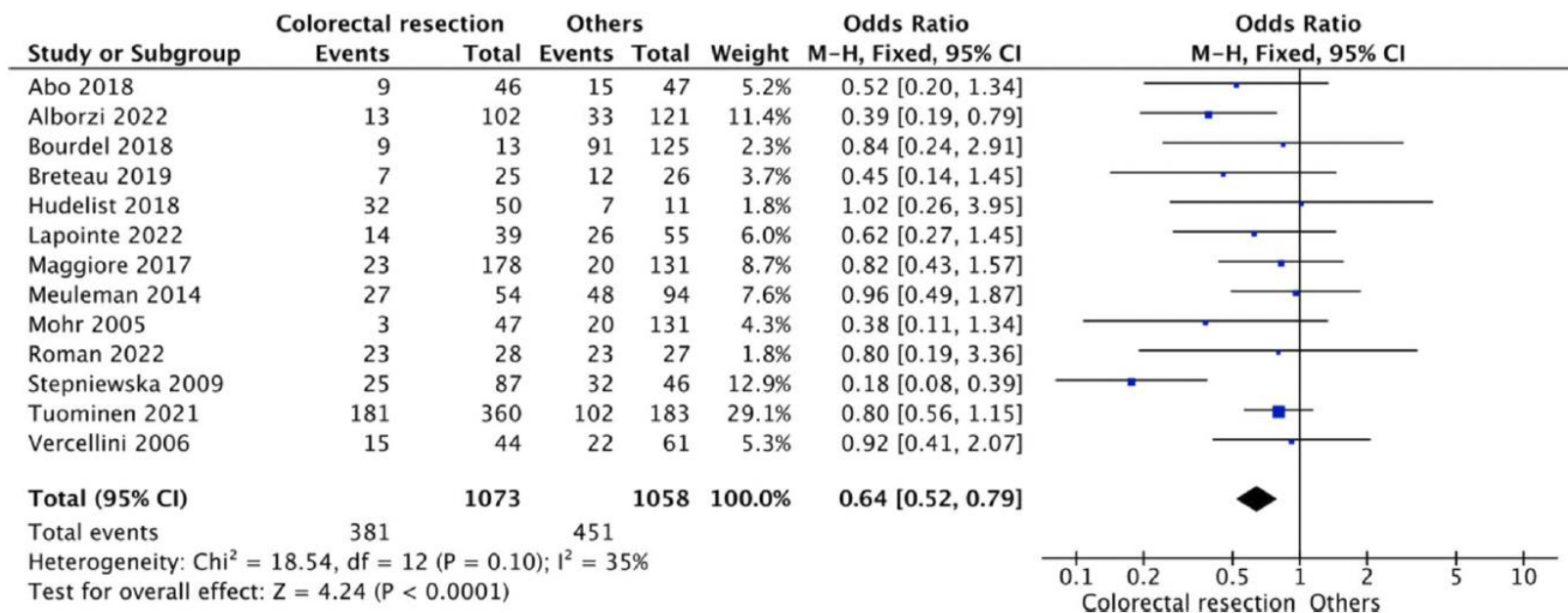


Fig. 2. Forest plot of the pregnancy rate comparing colorectal resection with other techniques.

Colorectal vs shaving

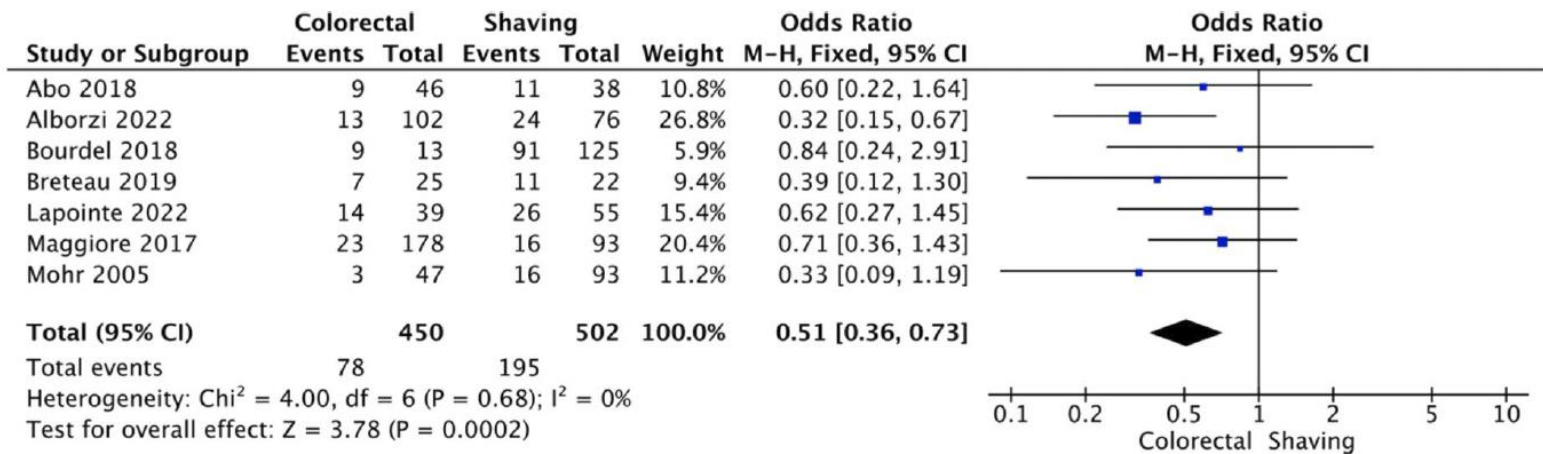


Fig. 3. Forest plot of the pregnancy rate comparing colorectal resection with shaving.

Colorectal vs disc excision

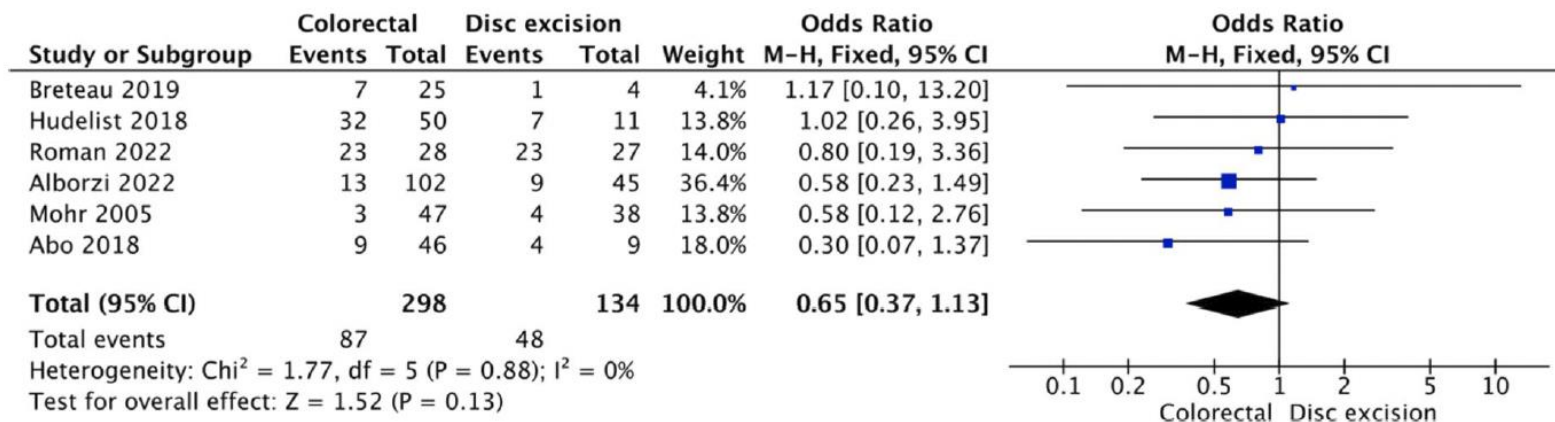
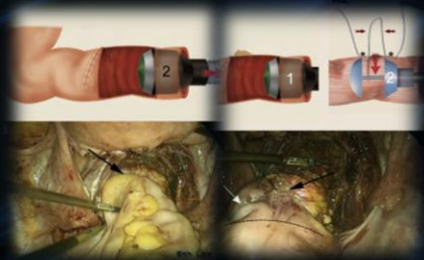
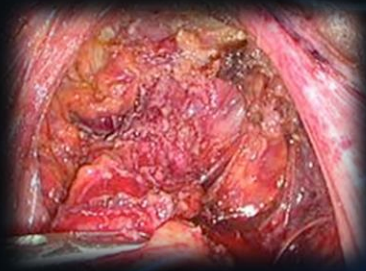
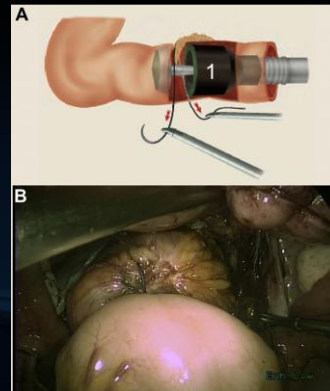
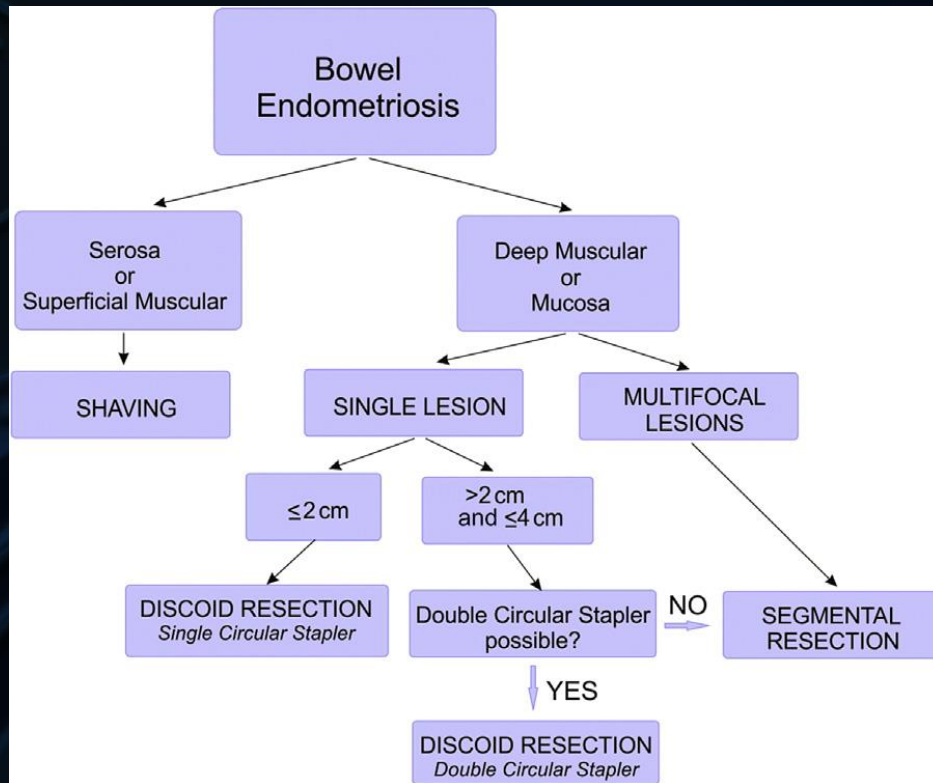


Fig. 4. Forest plot of the pregnancy rate comparing colorectal resection with disc excision.

Which STRATEGY



Conclusion:

Symptoms

- Suspect it if cyclical changes
- Beware of IBS
- Not always related to the localisation

Define anatomical damage and localisation

Clinical examination

MRI or endoanal US

Conclusion:

20% of multidisciplinary surgery

Be as aggressive as needed

Be as conservative as necessary

Explain well the risks and benefit

Surgery helps patients in term of fertility, pain or digestive symptoms, but has functional consequences that need to be followed



Coloproctology Team Geneva 2026

Consultants



E. Liot



F. Ris



G. Meurette



J. Meyer



J. Robert-Yap



C.R. Scarpa
Yverdon



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E. Gialamas
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J. Saadoun
Fellow



B. Roche
Grangettes



N. Buchs
La Tour



B. Schiltz
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Endometriosis Team Geneva 2026



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A. Martino



Certification in 2016, renewed in 2023



Dates:
8-11 February 2027

Inscriptions:
inscription@sfits.ch

The background of the poster is a blue-tinted photograph of a surgeon's hands operating with laparoscopic instruments. Overlaid on the left is a glowing, translucent 3D anatomical model of the human large intestine (colon).

Geneva University Hospitals
Proctology unit
Service of visceral Surgery

A circular logo with a stylized 'G' and 'H' inside.

The top of the bottom.

30th
Advanced
course in
coloproctology
and pelvic floor
disorder

PROCTOLOGY Geneva, Switzerland, 8-11 February 2027

Endorsed by: ESCP
SUPPORTED

Course director
Prof. Frédéric Ris

Hôpitaux
universitaires
Genève

A logo with the letters 'HUG' in a stylized, blocky font, with 'Hôpitaux universitaires Genève' written below it.

Thank you for your attention

Geneva University Hospitals
Proctology Unit
Service of Visceral Surgery



The top of the bottom



ABOVE AND BEYOND

Colo-proctology's JOURNEY TO TOMORROW