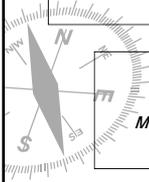


## Laparoscopic treatment of deeply infiltrating endometriosis

ESRHE 27/11/2009  
Leuven

*M Nisolle, J Dequesne, C Innocenti, JM Foidart  
University of Liège, Belgium*



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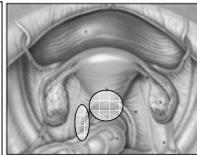
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## Deep infiltrating endometriosis

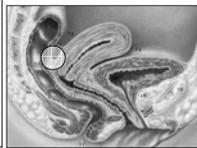
### ▶ Rectovaginal endometriosis

- Upper vagina
- Rectum
- Uterosacral ligaments, cervix corpus uteri



### ▶ Aim of management of DIE

- Improve quality of life
- Preserve fertility
- Low recurrence rate
- Low complication rate



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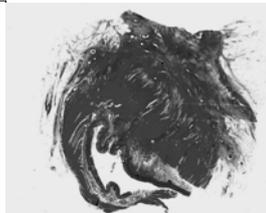
## Role of medical treatment

### ▶ Hormonal therapy has been designed to

- suppress oestrogen synthesis
- atrophy of ectopic endometrial implant

### ▶ Recurrence after cessation is high : 50%

### ▶ Relative ineffectiveness of medical therapy : fibrotic reaction



Surgery of symptomatic DIE is required

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## Role of conservative surgery

### ► Surgery is efficacious

- 2RCT : pain is reduced by surgical removal of endometriotic lesions (Sutton et al 1994; Abbott et al 2004)
- Pain reduction in > 70% of patients after surgical removal of DIE (Angioni et al 2006; Chapron et al 2001; Possover et al 2000; Donnez et al 2004)

### ► Hysterectomy is not needed for treatment of DIE

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## Role of conservative surgery

### ► Surgery is efficacious

- 2RCT : pain is reduced by surgical removal of endometriotic lesions (Sutton et al 1994; Abbott et al 2004)
- Pain reduction in > 70% of patients after surgical removal of DIE (Angioni et al 2006; Chapron et al 2001; Possover et al 2000; Donnez et al 2004)

### ► Hysterectomy is not needed for treatment of DIE

Complete excision is needed

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## Conservative surgery for DIE

### ► How to be sure that the resection is complete ?

### ► How to avoid complications associated with complex surgery?

Preoperative assesment  
Multidisciplinary approach  
in specialised centres

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### DIE: Clinical Examination



Is bowel infiltrated?

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### Preoperative assessment of DIE

Is the bowel infiltrated ?

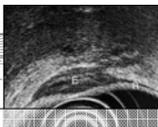
Rectal endoscopic

MRI

Sonography

- Cartography

- Distinction between muscularis propria
- submucosa-mucosa



Bazot et al Hum Reprod 2007  
Similar accuracy for diagnosis of rectal involvement when compared to MRI

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### Deep infiltrating endometriosis



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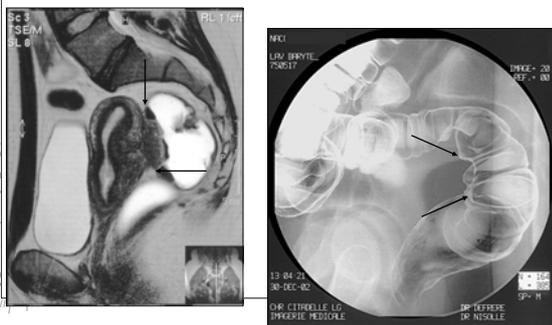
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## Deep infiltrating endometriosis




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### Surgical Techniques

- Redwine (1991) : Laparoscopic resection
- Bailey (1994) : Laparotomy
- Donnez (1994) : Laparoscopy without bowel resection
- Possover (2000) : Vaginal dissection followed by laparoscopy and minilaparotomy
- Chapron (2003) : Laparotomy if positive EER
- Koninckx : Laparoscopy – discoid resection
- Keckstein, Wattiez, Canis, Darai, Anaf : Laparoscopy and minilaparotomy
- Possover (2005) : LANN technique
- Landi (2006) : Laparoscopic nerve-sparing complete excision of DIE

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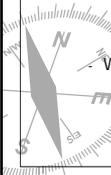
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## Deep infiltrating endometriosis

- Preoperative assesment
- Type of surgical treatment ?
  - Exision of the nodular lesion
    - Without bowel resection : shaving technique
    - Uterosacral ligaments infiltration
    - Vaginal infiltration
  - With bowel resection:
    - discoid or segmental bowel resection
    - laparoscopy ; laparotomy ; laparoscopically assisted technique




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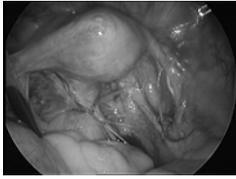
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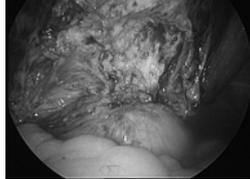
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## Deep Infiltrating Endometriosis

- Without bowel resection



Section of both US ligaments



Rectal dissection

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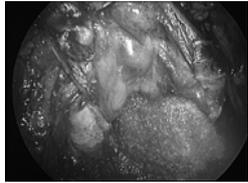
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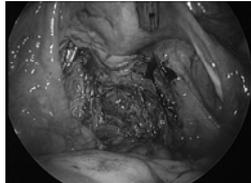
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## RECTOVAGINAL ENDOMETRIOSIS

- Without bowel resection



Vaginal opening



Vaginal closure

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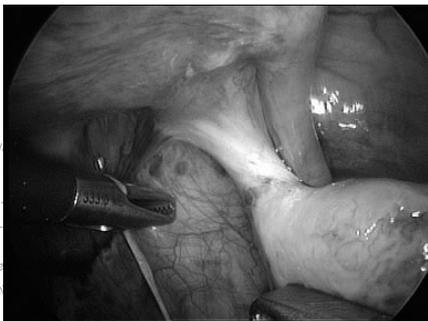
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## Adhesiolysis



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### Inspection



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### Rectal dissection



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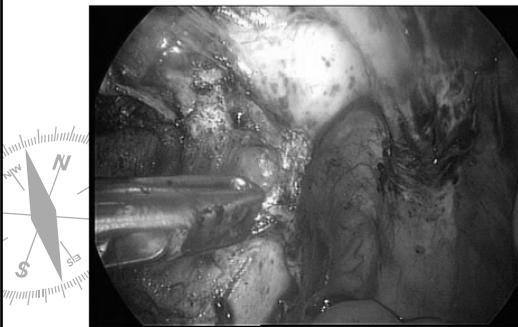
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### Rectal dissection



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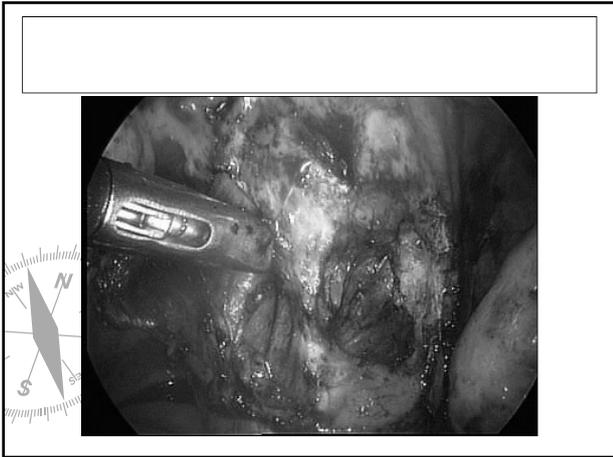
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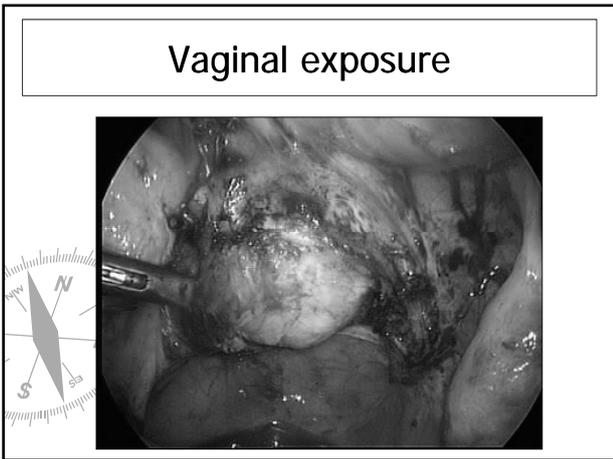
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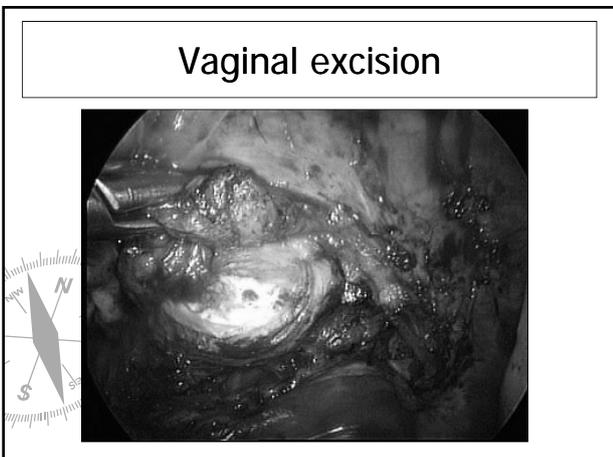
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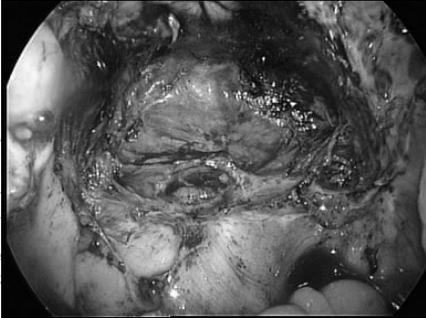
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## Final view



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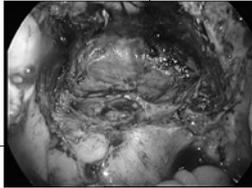
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## Deep infiltrating endometriosis

### ► « Check list » at the end of the surgery

- Treatment is complete
- Haemostasis is achieved
- Absence of rectal perforation  
(Methylene blue rectal injection)
- Ureteral peristalsis  
is satisfactory



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## Posterior vaginal fornix excision?

### ► Systematic vaginal excision in cases of DIE

- Macroscopic lesion preoperatively detected
- Apparently normal vagina? (*Angioni et al 2006*)

Microscopic infiltration of the vaginal wall is diagnosed  
in 10% of cases  
even in absence of macroscopic lesions

Quality of life is improved

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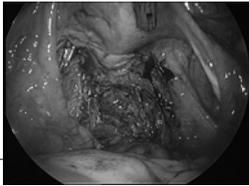
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## Deep infiltrating endometriosis

- Without bowel resection
  - Advantages:
    - Rate of intraoperative complications is minimal
    - Improved quality of life



*Angioni et al 2006*  
*Dubernard et al 2006*

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## Deep infiltrating endometriosis

- Preoperative assesment
- Type of surgical treatment ?
  - Exision of the nodular lesion
    - Without bowel resection : shaving technique
    - Uterosacral ligaments infiltration
    - Vaginal infiltration
  - With bowel resection:
    - discoid or segmental bowel resection
    - laparoscopy ; laparotomy ; laparoscopically assisted technique




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## Bowel Endometriosis

### Type of laparoscopic colorectal surgery for endometriosis

Authors	Segmental resection	Full-thickness disc excision	Superficial-thickness excision
Nezhat et al. [38]	10	5	0
Redwine and Wright [16]	6	21	23
Jerby et al. [14]	7	5	18
Possover et al. [35]	34	0	0
Duepre et al. [36]	18	5	26
Darai et al. [37]	40	0	0
Campagnacci et al. [39]	3	4	0
Ribeiro et al. [40]	115	2	8
Panel et al. [41]	18	3	0
Jatan et al. [42]	14	20	61
Lyons et al. [43]	7	0	0
<b>Total</b>	<b>272</b>	<b>65</b>	<b>136</b>

*Darai et al Curr Opin Obstst Gynecol 2007; 19: 308-13*

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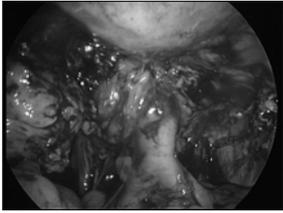
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## BOWEL ENDOMETRIOSIS

- With bowel resection



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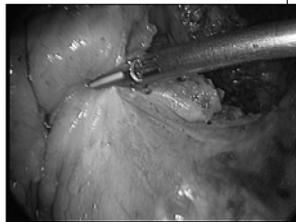
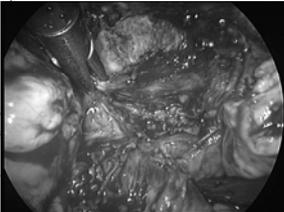
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## BOWEL ENDOMETRIOSIS

- With bowel resection



Resection of the rectovaginal septum and the utero-sacral ligaments

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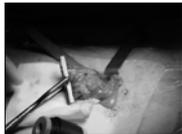
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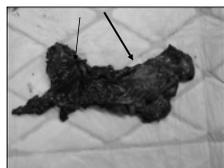
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## BOWEL ENDOMETRIOSIS



Section of the distal part of the rectum (Endo GIA)  
Minilaparotomy for exteriorisation of the bowel



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## BOWEL ENDOMETRIOSIS



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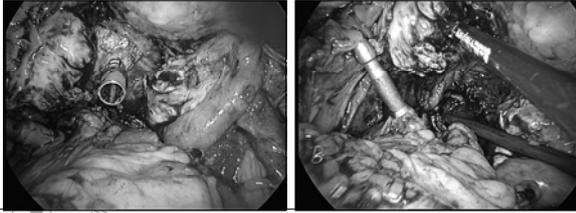
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## BOWEL ENDOMETRIOSIS

- With bowel resection: II Step



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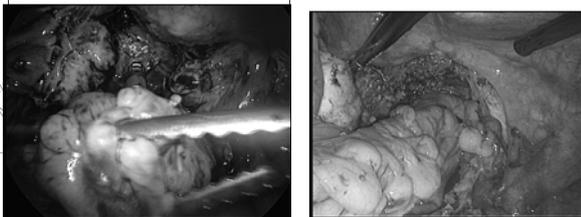
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## BOWEL ENDOMETRIOSIS

- With bowel resection



End-to-end colorectal anastomosis (CCEA)

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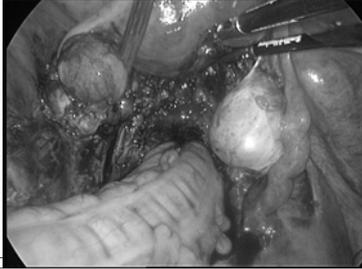
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## BOWEL ENDOMETRIOSIS

- With bowel resection



Final view

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## Bowel Endometriosis

Conversion rate to laparotomy during laparoscopic colorectal resection for endometriosis

Authors	Number of patients	Conversion to laparotomy
Nezhat <i>et al.</i> [38]	15	0
Jerby <i>et al.</i> [14]	30	4 (13.3%)
Possover <i>et al.</i> [35]	34	0
Duepree <i>et al.</i> [36]	46	4 (8.7%)
Darai <i>et al.</i> [37]	40	4 (10%)
Campagnacci <i>et al.</i> [39]	7	0
Ribeiro <i>et al.</i> [40]	125	0
Panel <i>et al.</i> [41]	21	2 (9.5%)
Jatan <i>et al.</i> [42]	95	19 (20%)
Lyons <i>et al.</i> [43]	7	0
Total	420	7.8%

*Darai et al Curr Opin Obstst Gynecol 2007; 19: 308-13*

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## Bowel Endometriosis

Digestive complications after laparoscopic colorectal resection for endometriosis

Review of the literature: 275 patients

- ▶ Rectovaginal fistula : 9 patients (3.3%)
- ▶ Linkage of anastomosis : 2 patients (0.7%)
- ▶ Secondary colostomy : 7 patients (2.5%)

*Darai et al Curr Opin Obstst Gynecol 2007; 19: 308-13*

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## Symptoms after colorectal resection

Symptom	Median preoperative intensity score (range)	Median post-operative intensity score (range)	P value
Dysmenorrhoea	8 (0-10)	0 (0-10)	<0.0001 <sup>‡</sup>
Dyspareunia	6 (0-10)	0 (0-10)	<0.0001 <sup>‡</sup>
Bowel movement pain or cramping	6 (0-10)	0 (0-8)	<0.0001 <sup>‡</sup>
Diarrhoea	0 (0-10)	0 (0-8)	0.016
Constipation	5 (0-10)	4 (0-10)	0.64
Pain on defecation	1.5 (0-10)	0 (0-8)	<0.0001 <sup>‡</sup>
Rectorrhagia	0 (0-6)	0 (0-10)	0.55
Lower back pain	3.5 (0-10)	0 (0-9)	<0.0001 <sup>‡</sup>
Tenesmus	0 (0-10)	0 (0-10)	0.55
Asthaenia	5 (0-10)	0 (0-10)	<0.0002 <sup>‡</sup>

<sup>‡</sup>Significant with Bonferroni correction.

Dubernard & Daraï, Hum Reprod 2006

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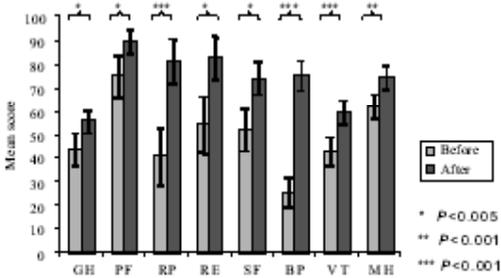
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## Evaluation of quality of life after colorectal resection



Dubernard & Daraï, Hum Reprod 2006

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## DIE Excision and Recurrence

Recurrence	Pain	Reoperation
▪ Fedele et al (2004)	28%	27%
▪ Jatan et al (2006)	5.3%	
▪ Panel et al (2006)	4.8%	
▪ Daraï et al (2007)	16.4%	
▪ Vignali et al (2005)	24%	10%
▪ Bröuwers- Woods (2007)	4.6%	
▶ Rectal dissection	22%	
▶ Anterior excision	5.17%	
▶ Segmental rectal	2.19%	

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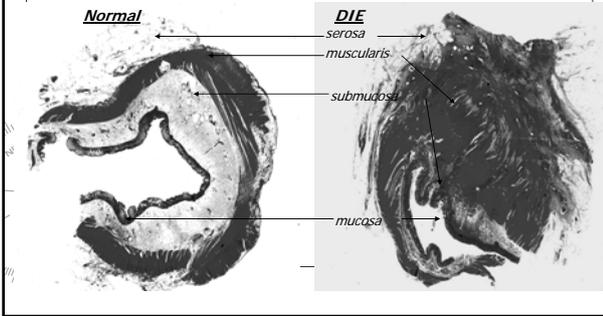
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### Depth of microscopic infiltration of the bowel wall




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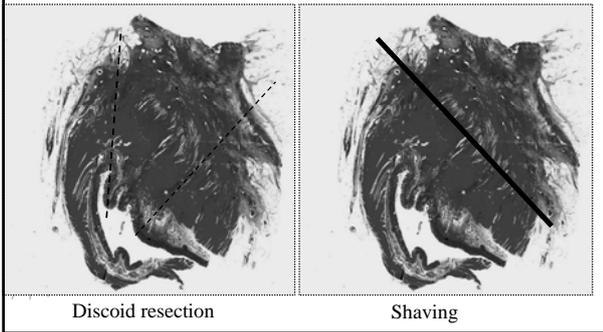
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### Deep infiltrating endometriosis




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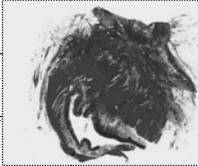
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### Bowel Resection and Depth of Microscopic Infiltration

	Kavallaris 2003	Anaf 2004	Personal data
Serosa	100%	100%	100%
Muscularis	100%	100%	100%
Submu	34%	68%	61%
Mucosa	10%	26%	38.8%




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## DIE : Conclusions

- ▶ Surgery is needed
- ▶ Conservative surgery
- ▶ Preoperative assessment is required
- ▶ Several surgical approaches
  - Absence of bowel infiltration: shaving technique
  - Presence of bowel infiltration: segmental colorectal resection, dicoid resection , stapled resection
- ▶ Postoperative results
  - OOL
  - Fertility
  - Recurrence
  - Complications

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## Deep Endometriosis:Conclusiosns

- ▶ Complete removal of the lesion is needed
  - ↓ Risk of recurrence
- ▶ Appropriate surgical team
  - ↓ Risk of complications
- ▶ Need for a multidisciplinary approach
  - Diagnosis
  - Surgery

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## Deep Endometriosis:Conclusiosns

- ▶ Complete removal of the lesion is needed
  - ↓ Risk of recurrence
- ▶ Appropriate surgical team
  - ↓ Risk of complications
- ▶ Need for a multidisciplinary approach
  - Diagnosis
  - Surgery

Need for Referral centres

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