SURGICAL TREATMENT of ENDOMETRIOSIS related PAIN

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LAPAROSCOPIC SURGERY of DEEP INFILTRATING ENDOMETRIOSIS

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TÜRKİYE ENDOMETRİOZİS

TANI VE YÖNETİM KILAVUZU

EKİM 2014

ENDOMETRİOZİS &
ADENOMYOZİS
DERNEĞİ
2009

Endometriozis ile ilişkili dismenorenin azaltılmasında kombine oral kontraseptiflerin etkinliğini destekleyen orta kalite kanıt vardır.

Endometriozis ile ilişkili disparoni ve non-menstrual pelvik ağrının azaltılmasında kombine oral kontraseptiflerin etkinliğini destekleyen düşük kalite kanıt vardır.

Endometriozis ile ilişkili dismenore, disparoni ve kronik pelvik ağrıyı azaltmak için vajinal kontraseptif halka veya transdermal bant (östrojen/progesteron) kullanımına dair düşük kalite kanıt vardır.Kılavuz hazırlama kurulu endometriozis ile ilişkili ağrının tedavisinde hormonal kontraseptiflerin kullanılması yönünde kuvvetli tavsiyede bulunmaktadır.

Endometriozis ile ilişkili ağrı tedavisinde, cerrahi öncesi hormonal tedavinin yararlı olmadığına dair orta kalite kanıt vardır ve kılavuz hazırlama kurulu preoperatif hormonal tedavi verilmemesi yönünde kuvvetli tavsiyede bulunmaktadır.

Rektovajinal ve intestinal endometriozisli hastalarda yapılacak cerrahi radikalleştikçe ağrı şikayetleri azalmakta iken komplikasyon oranı artmaktadır. Bu yüzden her hastanın bireysel olarak değerlendirilmesi ve fayda-zarar dengesi gözetilerek cerrahinin boyutunun belirlenmesi kuvvetle önerilir.

Mesane tutulumunda etkilenen yüzeyin tam kat çıkarılması kuvvetle tavsiye edilir.
Üreter tutulumunda lezyonun lokalizasyonu ve büyüklüğüne göre üreterolizis, üreter rezeksiyonu ve üreteroneosistostomi arasında tercih yapılması kuvvetle tavsiye edilir.

Endometrioma cerrahisinde kistektomi sonrası drenaj ve koagulasyona kıyasla rekürrens oranlarının daha düşük olduğu ve ağrının daha iyi kontrol edildiğine dair yüksek kalite kanıt vardır ve kılavuz hazırlama kurulu endometrioma cerrahisi yapılacak ise kistektomi tercih edilmesini kuvvetle tavsiye eder.

Derin infiltratif endometriozis ile ilişkili ağrının yönetiminde cerrahi yaklaşım nasıl olmalıdır?

Derin Endometriozis olgularında cerrahi tedavinin hem ağrıyı azalttığı hem de yaşam kalitesini arttırdığına dair orta kalitede kanıt mevcuttur.
Kılavuz hazırlama kurulu, tanı almış veya şüpheli derin endometriozis olgularının multidisipliner yaklaşım içinde hizmet veren, ürolog ve kolorektal cerrahın da bulunduğu merkezlere yönlendirilmesini kuvvetle tavsiye etmektedir.

Kılavuz hazırlama kurulu, çocuk isteği olmayan ve diğer konservatif tedavilere cevap vermeyen kadınlarda histerektomi ve bilateral salpingo-ooferektomi yapılmasını ve görünen tüm endometriotik odakların çıkarılması yönünde zayıf tavsiyede bulunmaktadır.

Endometriozis ile ilişkili ağrının azaltılmasında progestinlerin etkin olduğunu gösteren orta kalite kanıt mevcuttur ve kullanımları kuvvetle tavsiye edilmektedir.Kılavuz hazırlama kurulu, progestin seçiminde yan etki profilinin dikkate alınmasını kuvvetle tavsiye eder.

Endometriozis ile ilişkili ağrının azaltılmasında levonorgestrel salınımlı intrauterin sistemin etkin olduğunu gösteren orta kalitede kanıt mevcuttur ve kullanımı kuvvetle tavsiye edilmektedir.

Endometriozise bağlı ağrı tedavisinde aromataz inhibitörlerinin etkinliğini destekleyen düşük kalitede kanıt vardır.

Kılavuz hazırlama kurulu rektovajinal endometriozis olgularında ve diğer tüm medikal ve cerrahi tedavilere yanıtsız olgularda kullanımı yönünde zayıf tavsiyede bulunmaktadır.

Laparoskopi esnasında endometriozis saptandığında cerrahi olarak tedavi edilmesinin ağrıyı azaltmakta etkin olduğunu destekleyen yüksek kalite kanıt vardır ve kılavuz hazırlama kurulu görülen endometriozis lezyonlarının cerrahi tedavisini kuvvetle tavsiye eder.

Hormonal kontraseptifler, progestinler, selektif progesteron reseptör modülatörleri ve anti-progestinler, GnRH analogları ve aromataz inhibitörlerininin endometriozise bağlı ağrıyı azaltmakta etkin olduğunu gösteren yüksek kalite kanıt vardır.

Kılavuz hazırlama kurulu, endometriozis ile ilişkili ağrının hormonal tedavisinde hasta tercihlerini, yan etkileri, etkinliği, maliyeti, ulaşılabilirliği dikkate alarak en uygun ajanı seçmeyi tavsiye etmektedir.

Why to treat Endometriosis ?

- Endometriosis can disrupt environment in peritoneal cavity
  - anatomical
  - hormonal and
  - immunological

- Then endometriosis may cause

Pelvic Pain, Infertility, and Pelvic Mass

3 Types of Endometriosis

- **Superficial Endometriosis:**
  1. **Peritoneal endometriosis**
  2. **Ovarian superficial endometriosis**
- **Ovarian Endometriomas**
- **Deeply Infiltrating Endometriosis (DIE)**
- (Extragenital Endometriosis)

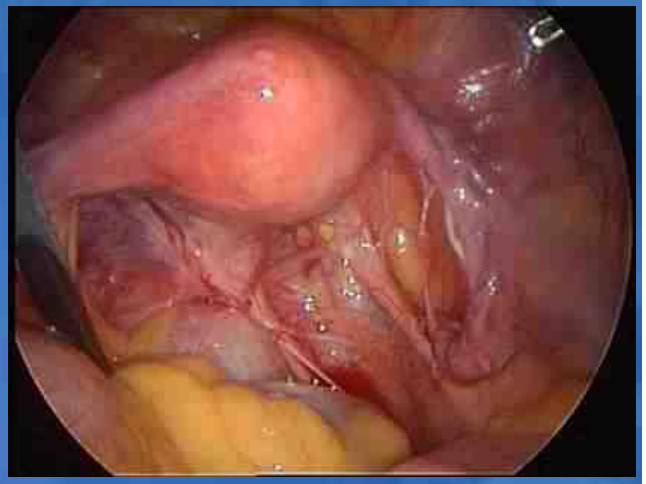
Definition and Prevalence of DIE

- Definition :Presence of endometrial like glands and stroma >5 mm under the peritoneum or invasion of the bowel,ureter or bladder wall. Mostly presents as a single nodule, larger than 1 cm in diameter in the vesicouterine fold or close to lower 20 cm of the bowel.

- Prevalence of DIE in women with endometriosis : 5.3-12%

- Sites

Rectum	≥ 80%
Recto-sigmoid junction	≥ 80%
Appendix	2-18%
Distal ileum	2-16%
Caecum	< 2%
Bladder	3-6 %



DIE has two major specificities

- DIE is a multifocal pathology:

  USL,vagina,bladder,intestine,ureter
- DIE is very often associated with other endometriotic lesions :

Unique lesion	10 %
Superficial lesions	61.3%
Endometriomas	50.5%
Adhesions	74.2%

Somigliana et al Hum Reprod 2004

- Endometriosis is an estrogen-dependent chronic inflammatory disease.
- It can be effectively curred by radical surgery.
- Also prolonged medical therapies,after conservative surgery may be needed,as for most chronic inflammatory disorders in general.

Vercellini et al 2011

Why we do the surgery?

Arguments in favor of surgery

1. Create spontaneous pregnancy (40-60%)
2. Relieve pain,return of normal daily and sexual life
3. Possible association between endometriosis and increase risk of ovarian carcinoma(clear cell ca.,endometrioid ca.)

Arguments in against of surgery

1. Decreased ovarian reserve, especially in repeated surgery
2. Recurrence
3. Complexity of endometriosis is not resolved

Treatment of endometriosis induced pain

- Medical treatment
- Surgical treatment
- Combined treatment

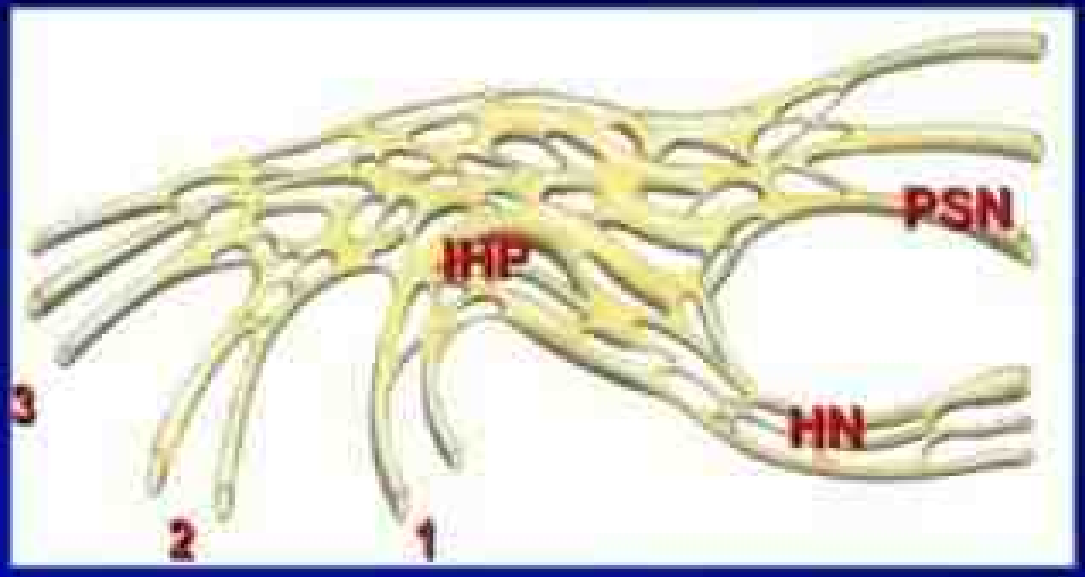
Causes of endometriosis induced pain

- Direct infiltration or compression of nerves
- Compression of the organs
- Stenosis/substenosis of the organs by fibrosis (Urether,intestin)
- Chronical inflamatory reaction
- Peritoneal irritation
- Adhesions and fibrosis

Why endometriosis induces pain?

- Endometriosis is a chronic inflamatory disease and can induced inflamatory reaction
- Can induced the adhesions
- Can infiltrate the organs and the nerves
- Can compresse the organs and nerves
- Can do the occlusion,subocclusion of the intestins and urethers by fibrosis

Efferent branches of Pelvic Plexus (IHP)



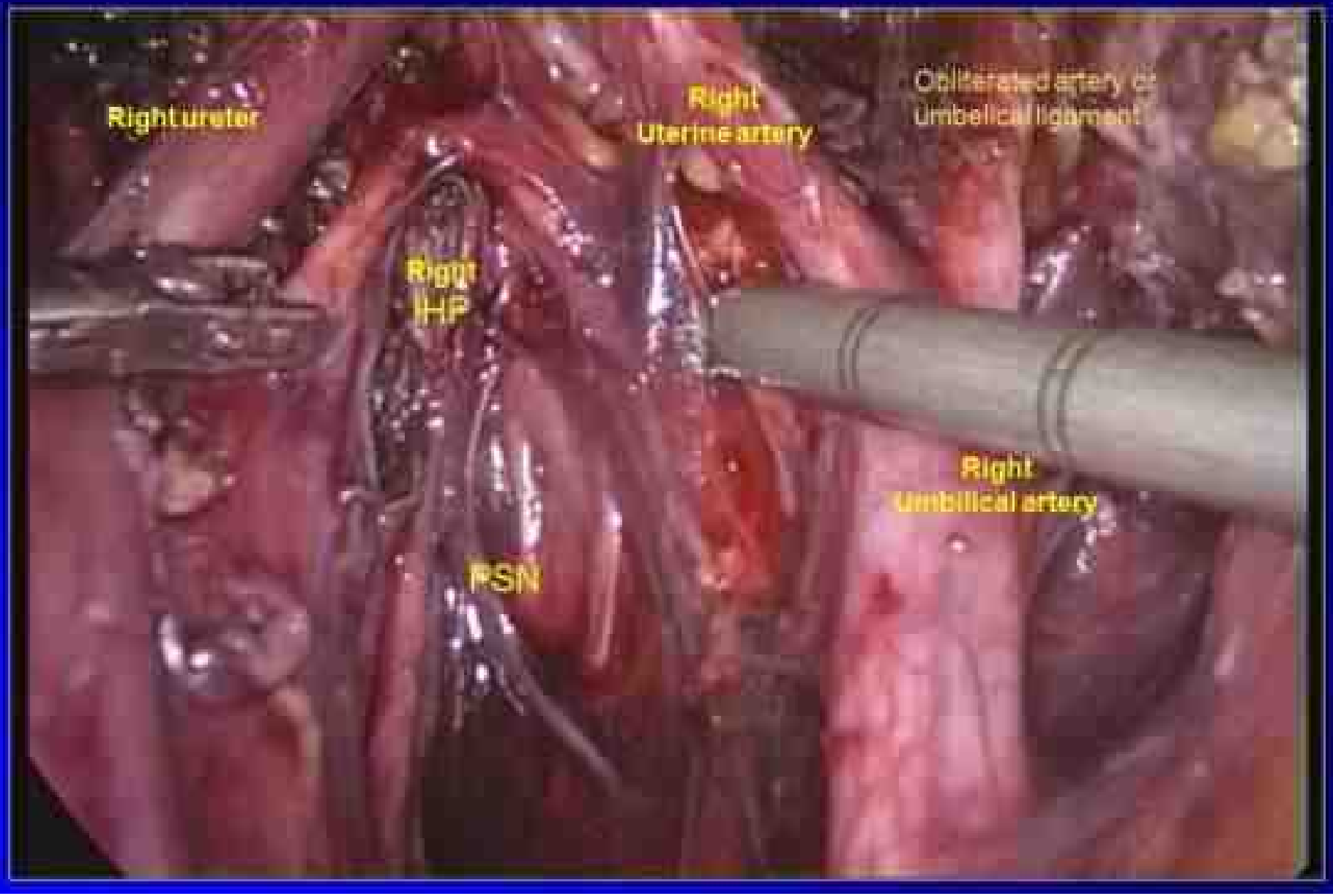
1) A group of thin fibers directed medially toward the rectum running through the mesorectum *(medial efferent bundle)*

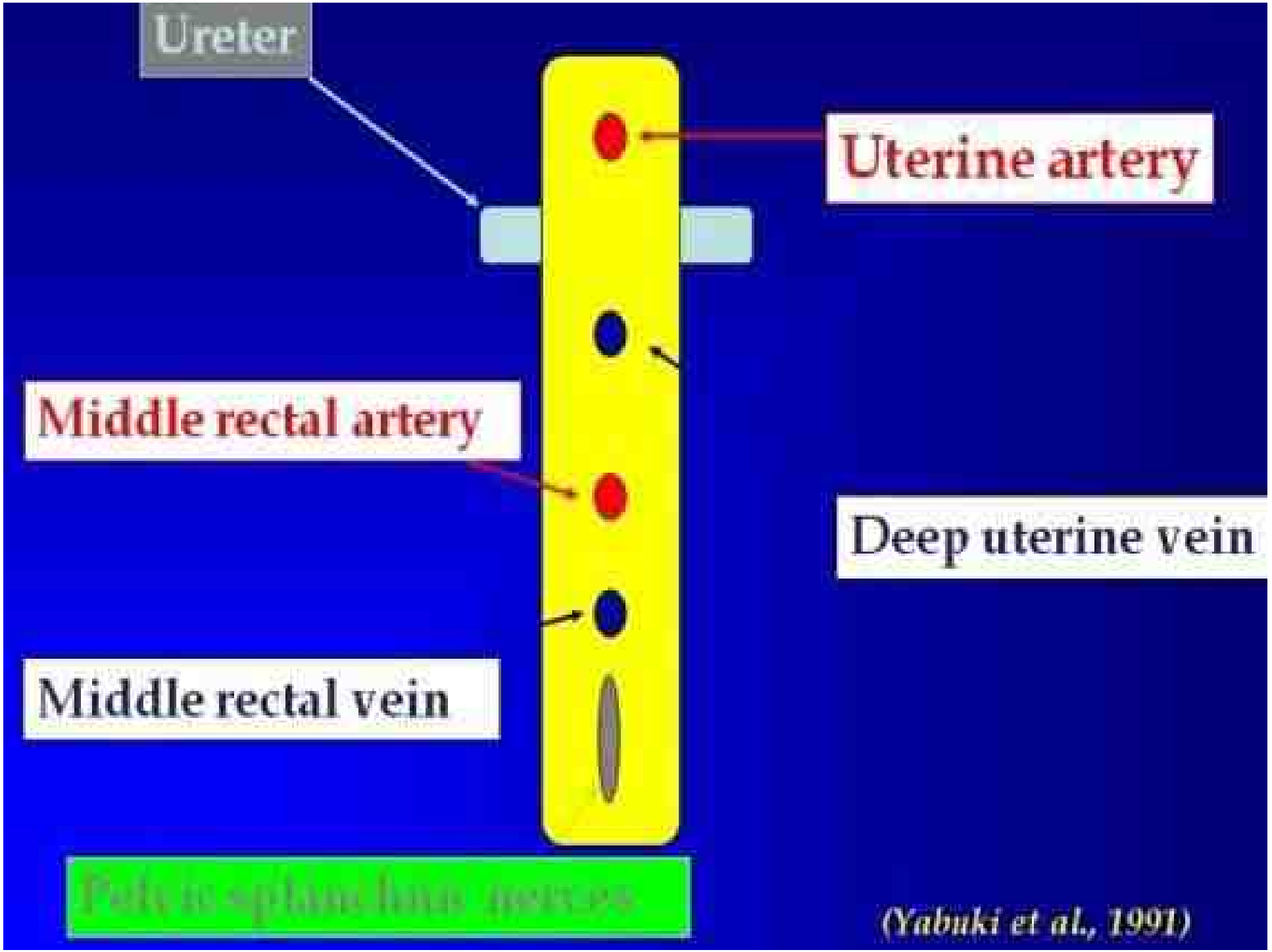
2) A group of thin fibers directed cranially toward the uterus running through the parametrium *(cranial efferent bundle)*

3) A group formed by 3-4 main fibers directed anteriorly toward the bladder and the vagina which ran through the paracervix *(anterior efferent bundle)*

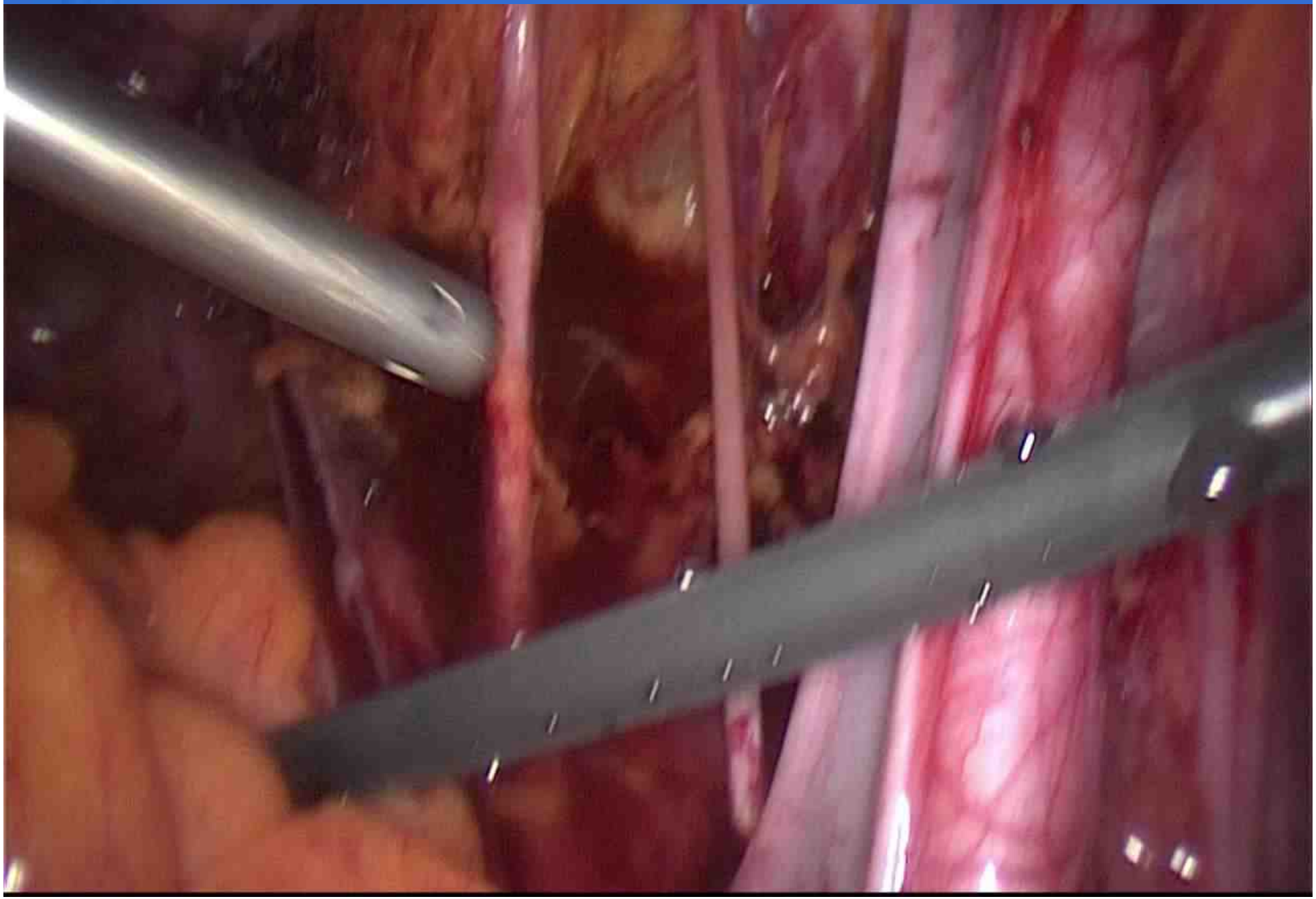
Ceccanni et al. 2007; Ercoli et al., Surg Radiol Anat (2003) 25:200-206

Parametrium (right side)

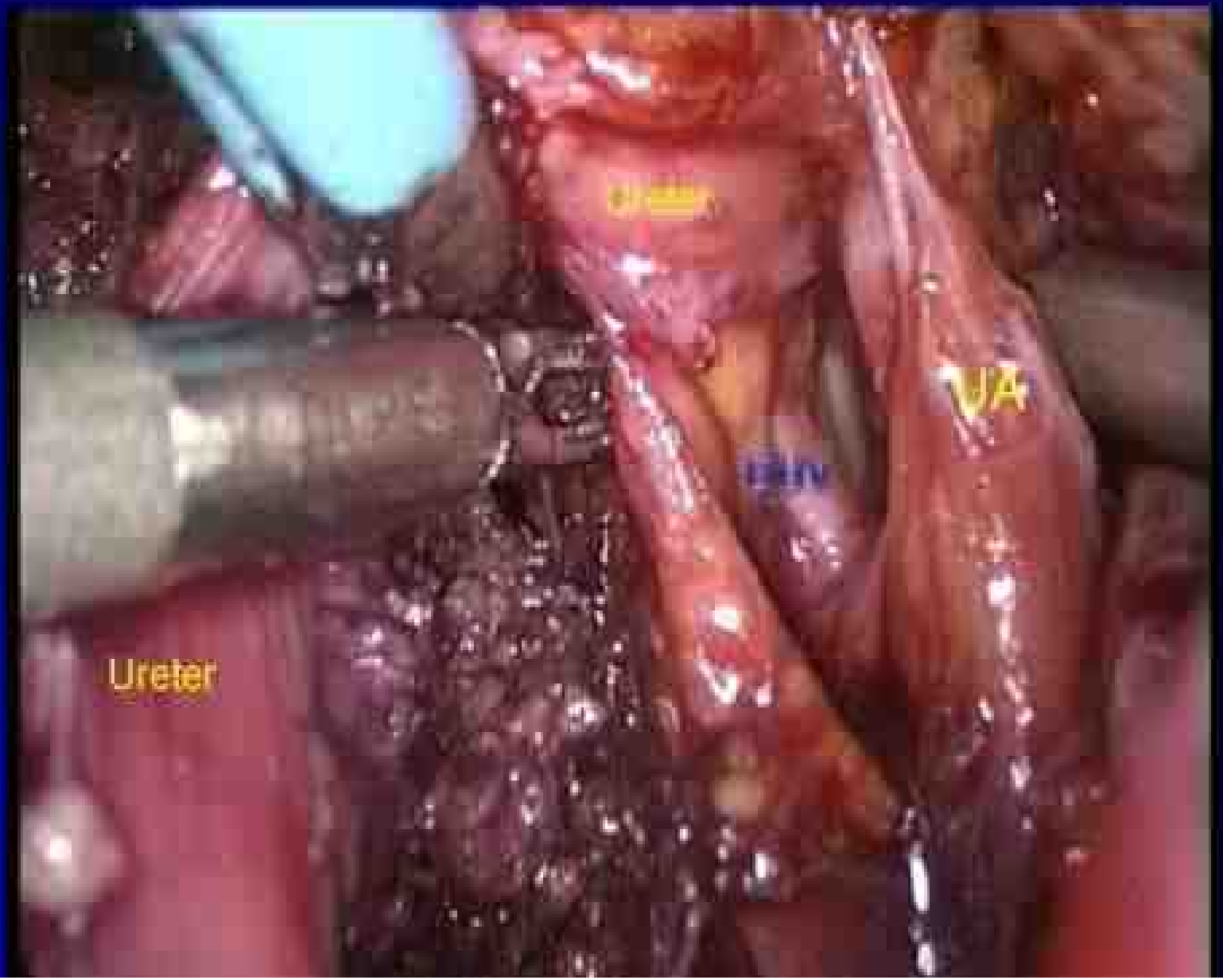


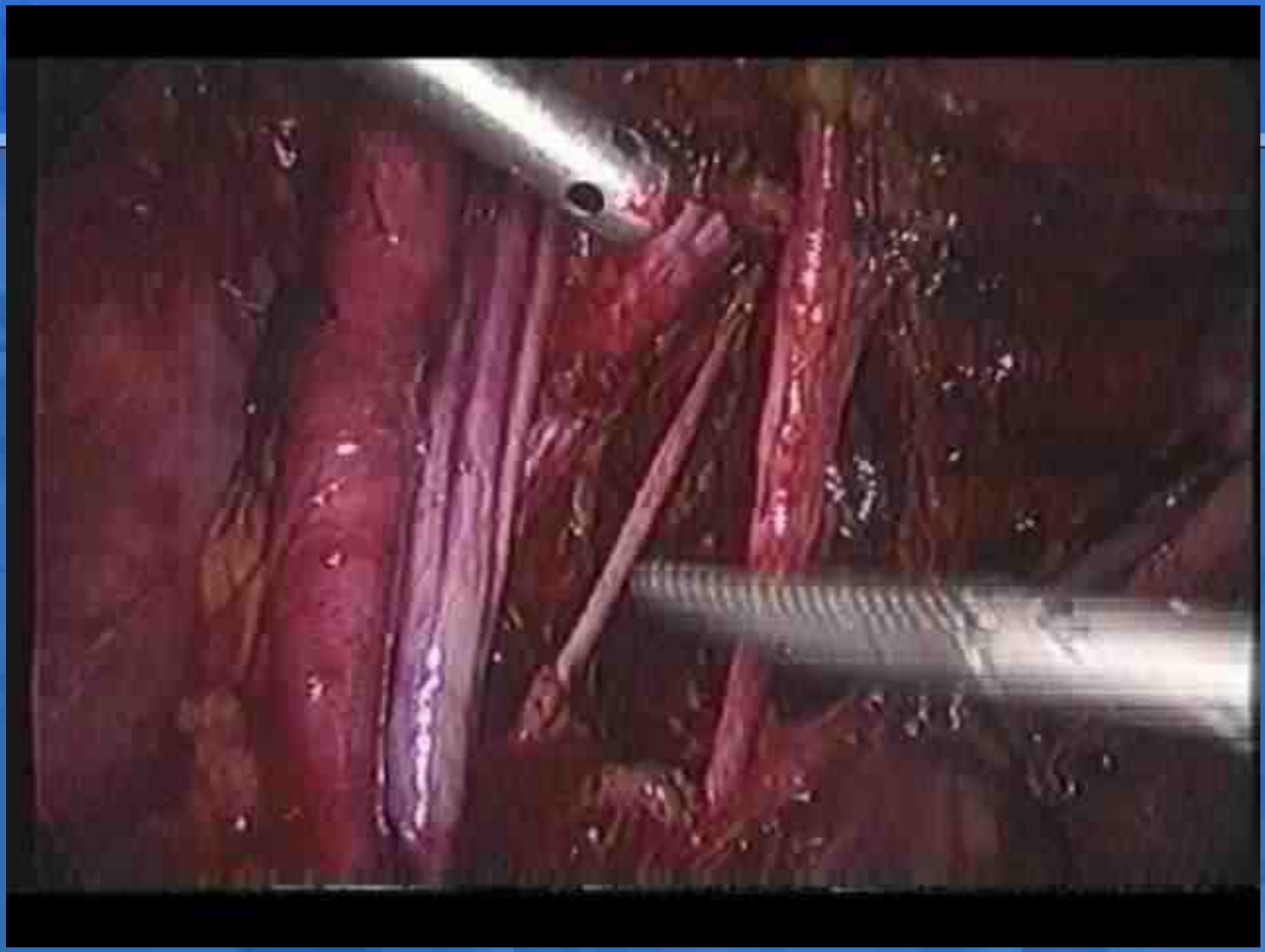

Ureter
Uterine artery
Middle rectal artery
Deep uterine vein
Middle rectal vein
(Yabuki et al., 1991)

Pelvic vessels



the right deep uterine vein

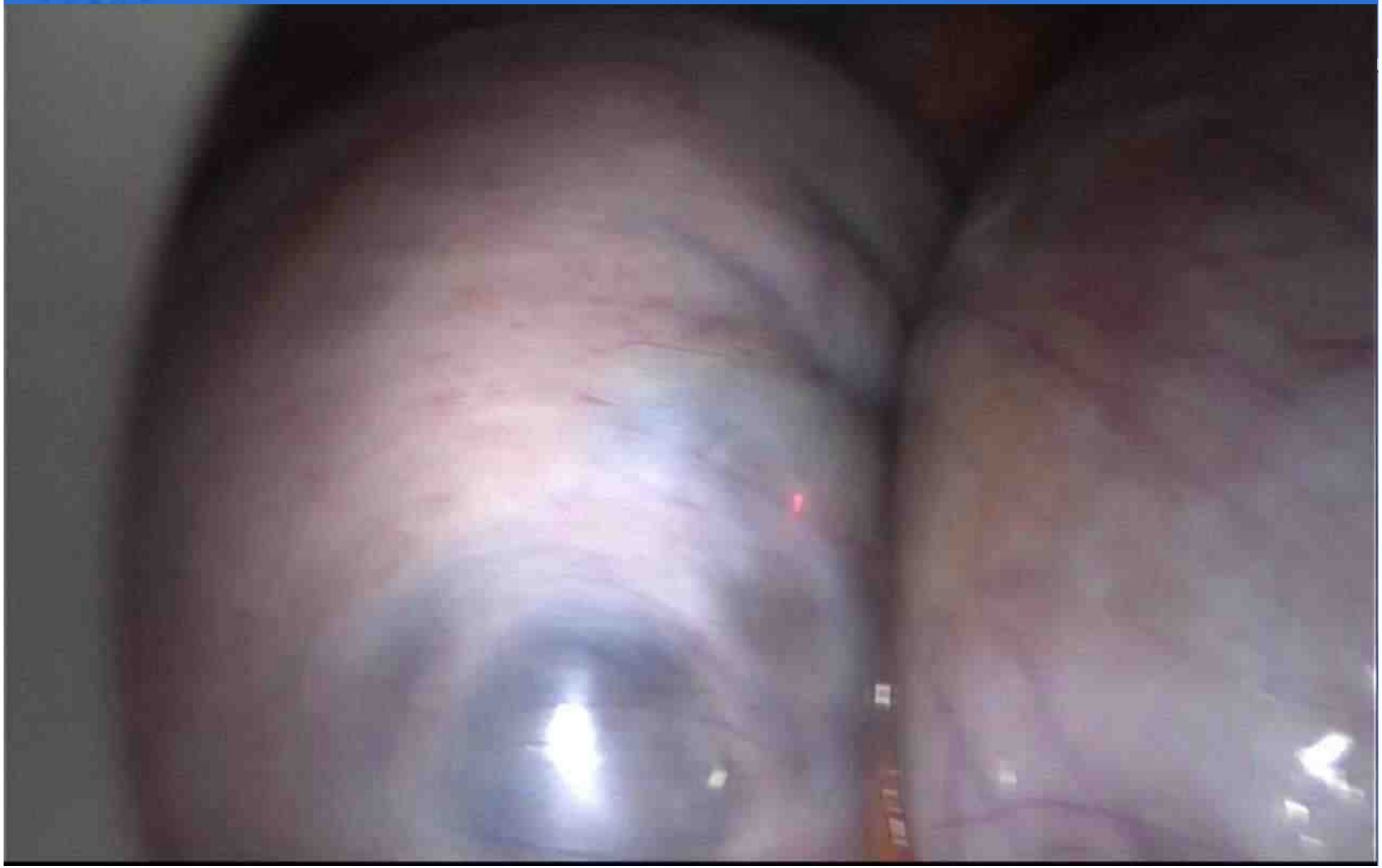




Endometriomas and pain

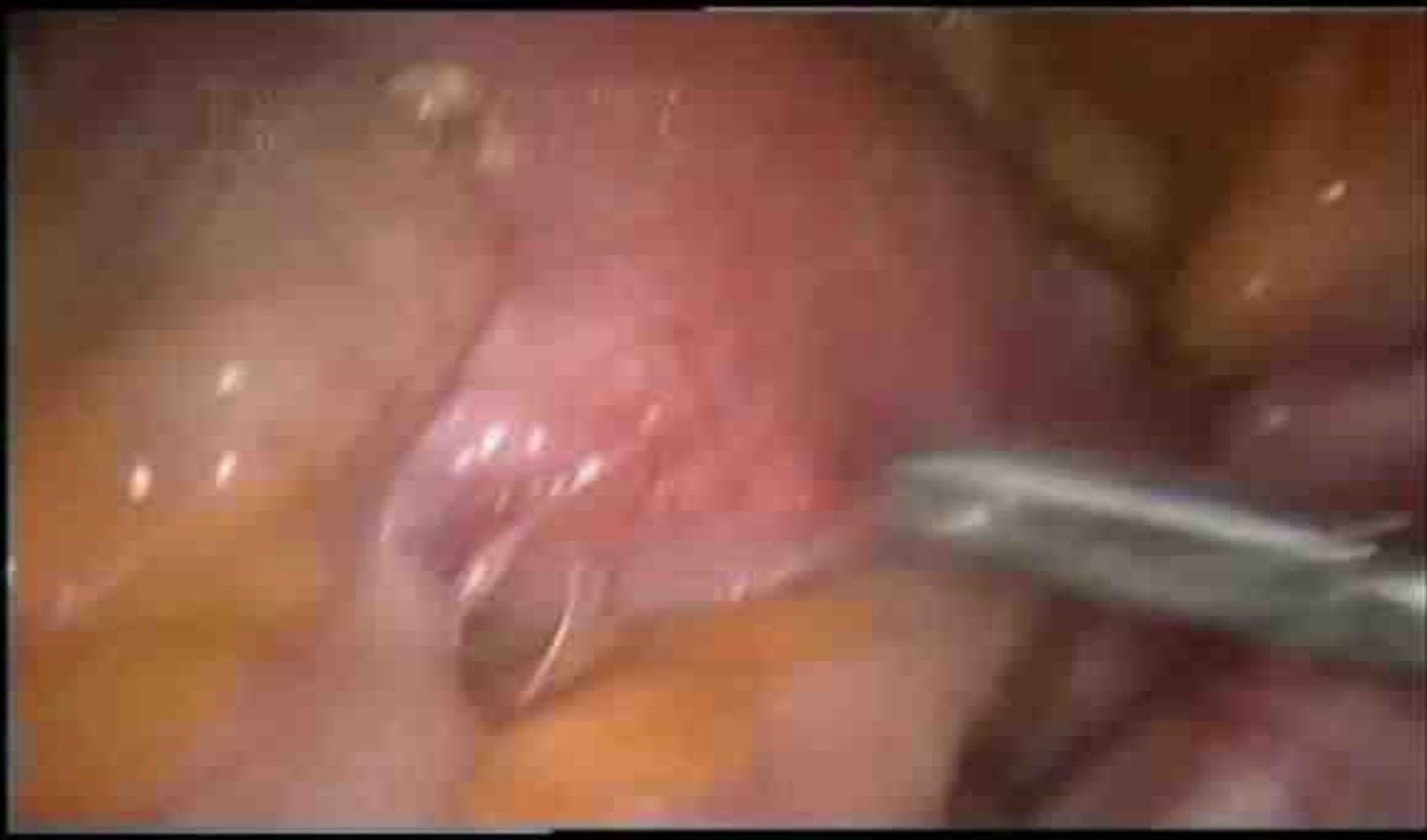
- Generally associated with DIE
- Association of the endometriomas and DIE is between 30 to 50%
- Than if endometrioma+pain, check if there is DIE

Compression by Giant Endometriomas

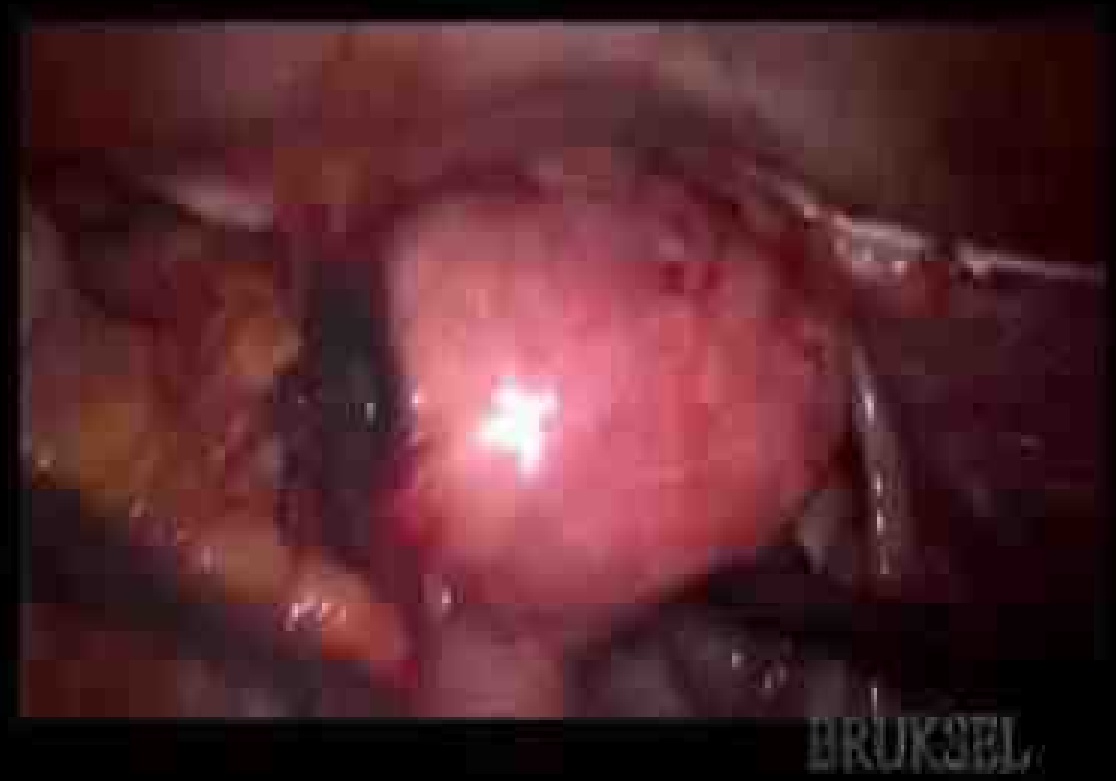


Management of Abnormal Anatomy caused by Endometriosis

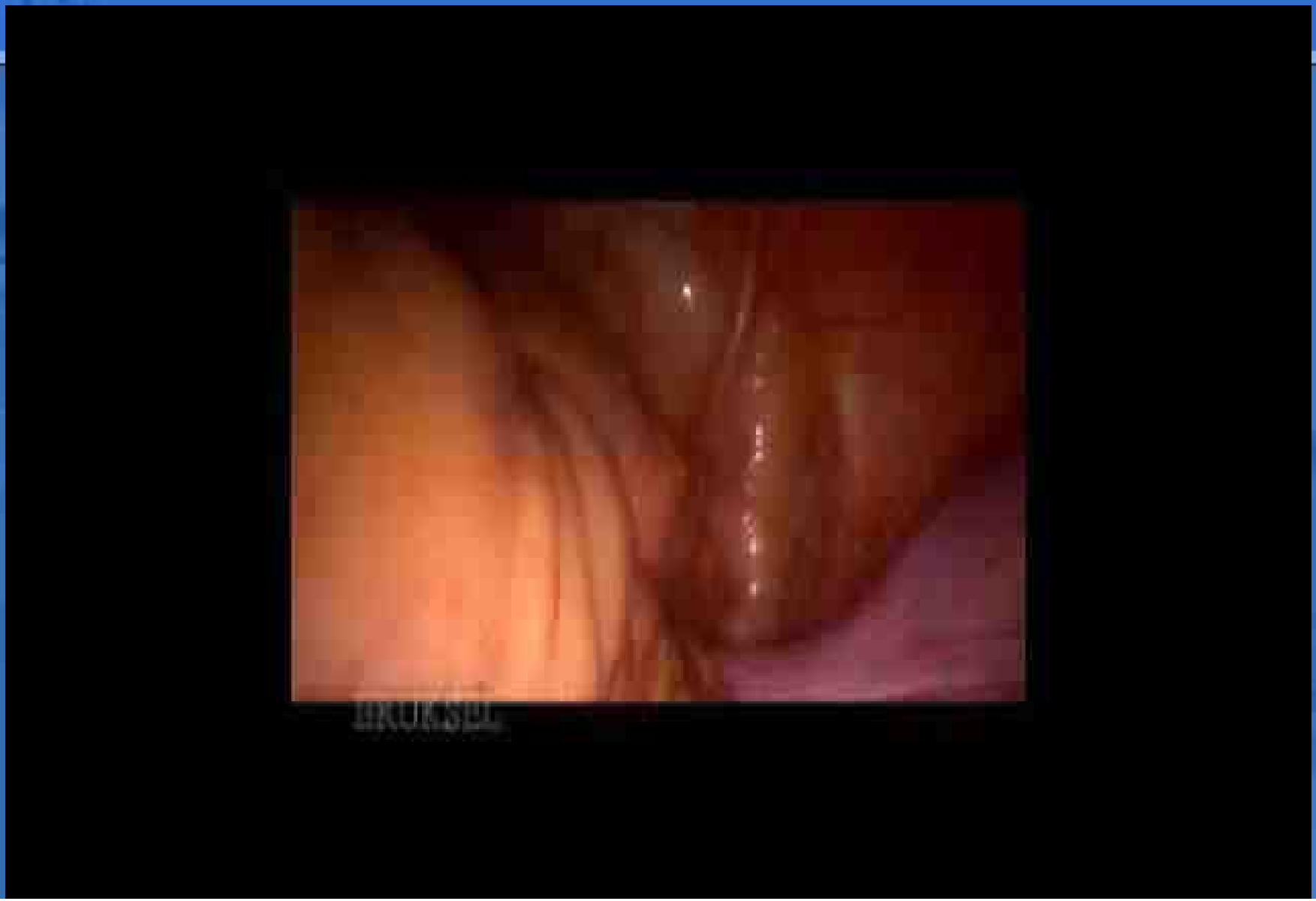
Douglas Obliteration



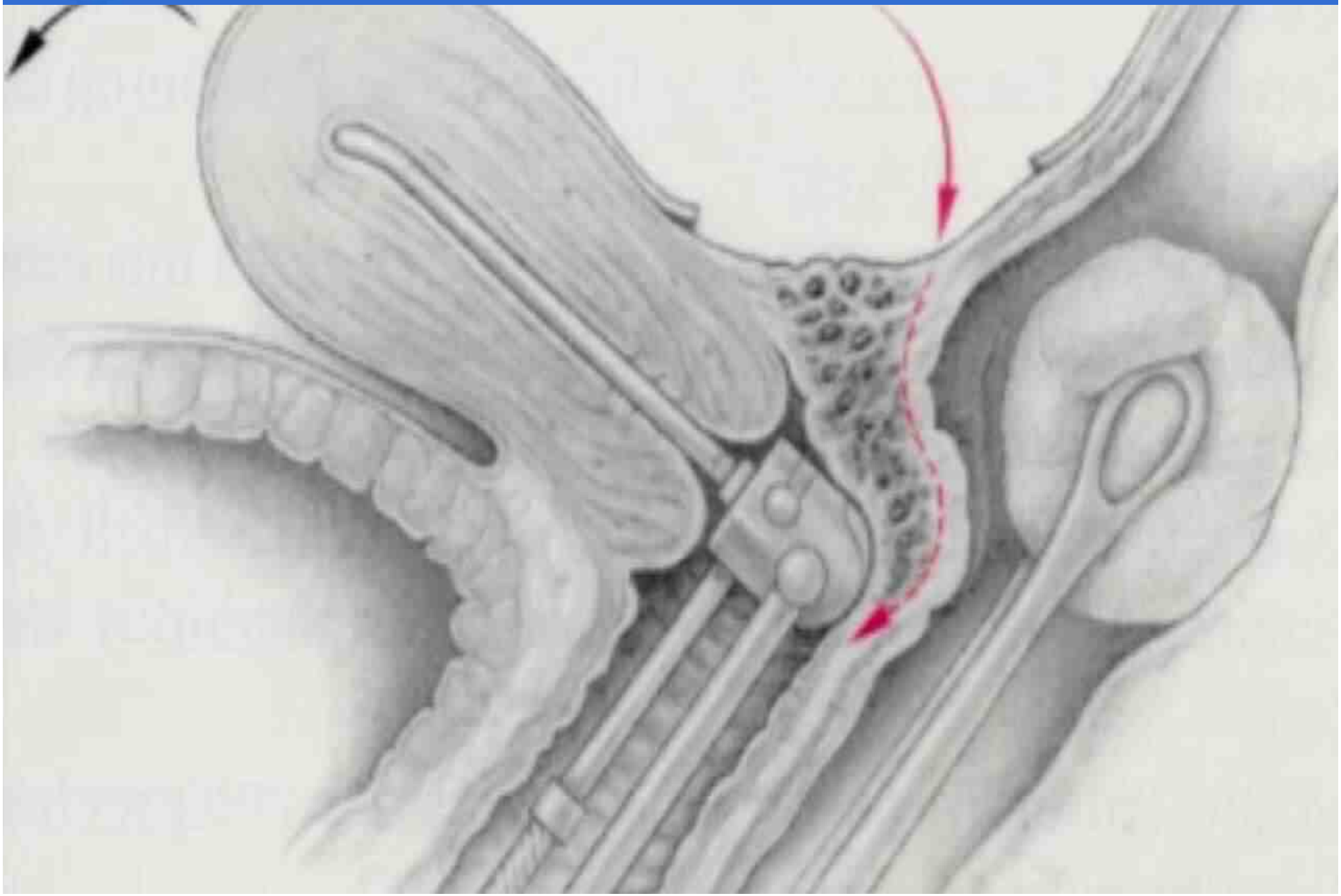
Douglas Obliteration



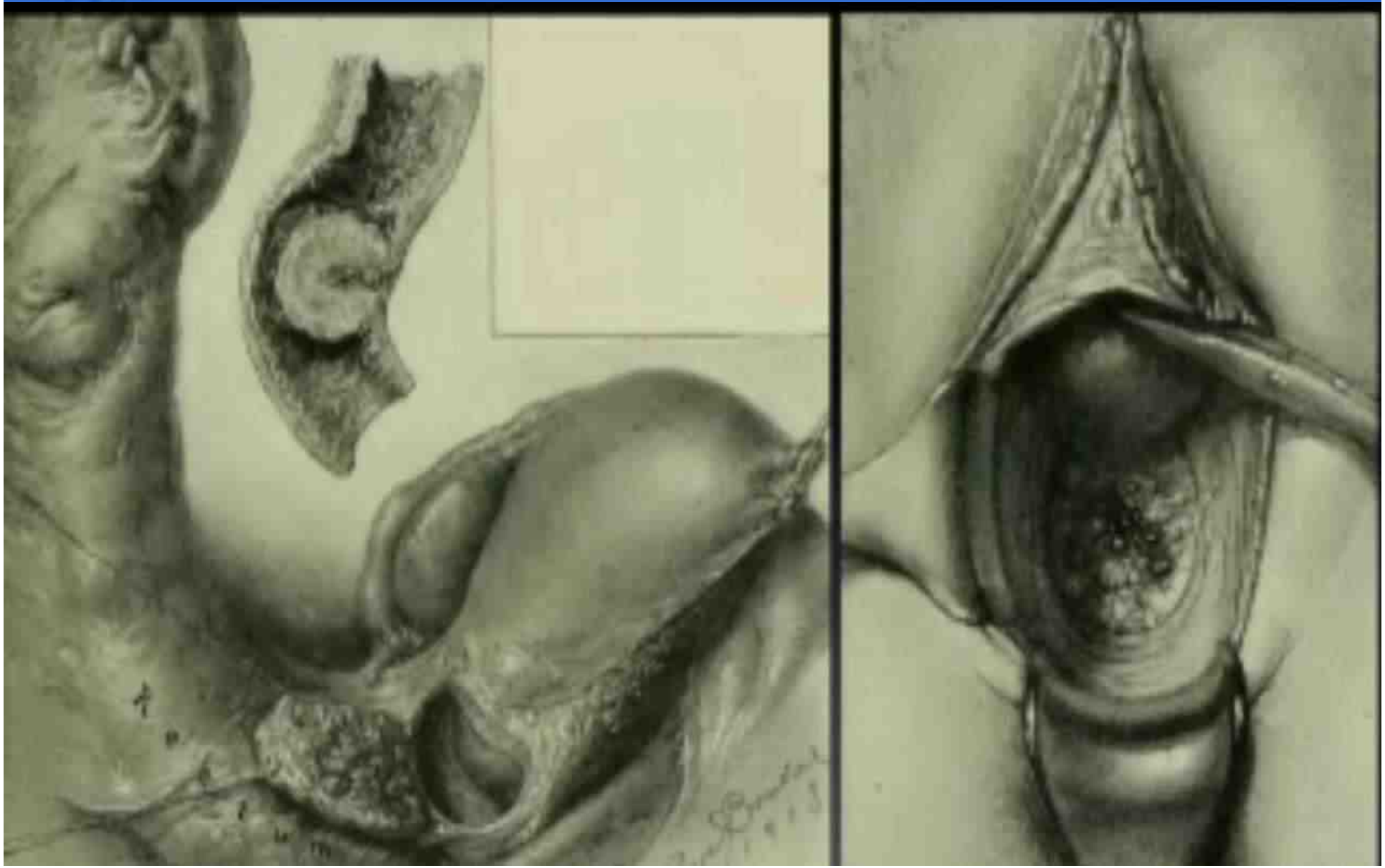
Pelvic Obliteration



DIE and Pain

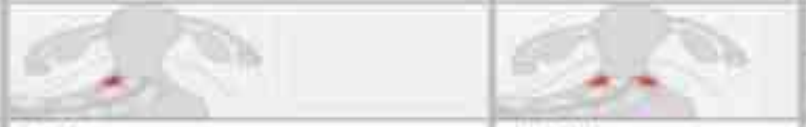
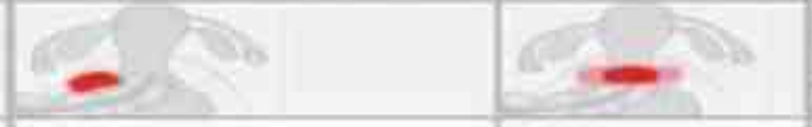
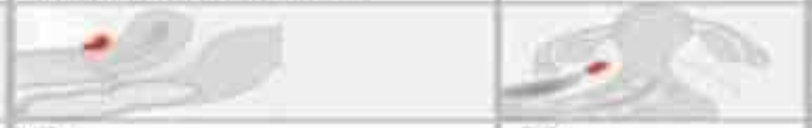


DIE and Pain (Cullen 1920)



ENZIAN SCOR (Kickstein et al 2003)

Enzian score

a • Cul de sac • Vagina	b • Uterosacral ligament (USL) • Cardinal ligament		c • Bowel, rectum • Rectosigmoid
			
E 1a Isolated nodule of the pouch of Douglas	E 1b Isolated nodule < 1 cm from the USL	E 1bb Bilateral infiltration of the USL	E 1c Isolated nodule in the retrovaginal space
			
E 2a Infiltration of the upper third of the vagina	E 2b Infiltration of the USL > 1 cm	E 2bb Bilateral	E 2c Infiltration of the rectum < 1 cm
			
E 3a Infiltration of the middle part of the vagina	E 3b Infiltration of the cardinal ligament (without ureterohydronephrosis)	E 3bb Bilateral	E 3c Infiltration of the rectum < 1 – 3 cm without stenosis
			
E 4a Infiltration of the uterus and/or the lower third of the vagina	E 4b Infiltration of the cardinal ligament to pelvic side wall and/or ureterohydronephrosis	E 4bb Bilateral	E 4c Infiltration of the rectum > 3 cm and/or rectal stenosis
			
FA Adenomyosis uteri FO – Other locations	FB Deep infiltration of the bladder	FU Ureteral infiltration (intrinsic)	FI Intestinal infiltration (other site than rectum or sigmoid)

Anatomic distrubution of Deeply infiltrating endometriosis

- A total of 500 patients with 925 DIE lesions

• Sacro-uterine ligaments	62 %
• Vaginal	14 %
• Bladder	5.9 %
• Intestinal	40 %
• Ureter	7.4 %

Multifocality must be considered during preoperative work-up and surgical treatment of D.I.E.

Chapron et al. Fert.Steril. 2009

DIE has two major specificities

- DIE is a multifocal pathology:

  USL,vagina,bladder,intestine,ureter
- DIE is very often associated with other endometriotic lesions :

Unique lesion	10 %
Superficial lesions	61.3%
Endometriomas	50.5%
Adhesions	74.2%

Somigliana et al Hum Reprod 2004

Symptoms of DIE

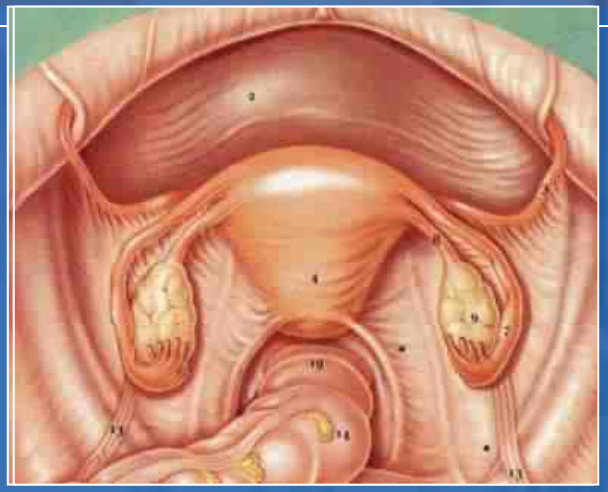
- Progressive pelvic pain
- Dysmenorrhea
- Deep dyspareunia
- Mictalgia
- Dyschezia,tenesmus,constipation,occlusion
- Menstrual diarrhea
- Women with these syptomps who impaire their professional and social lives seeks effective treatment and not just expectative care.

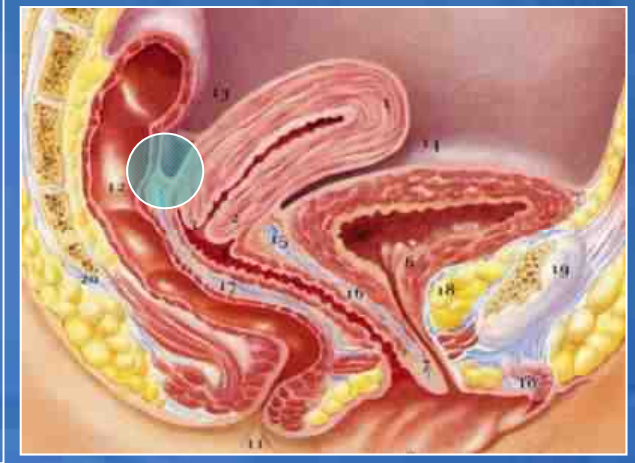
What is the effective treatment?

- Choose between medical and surgical treatment or association of both.
- Continuous hormonal treatment can reduce pelvic pain significantly but does not lead to the complete disapperance of deep endometriotic nodules .(< 20-30% of volume,Fedele 2000-2001)
- Or medical treatment in the prevantion of recurrences after complet surgical excision.

Management of DIE

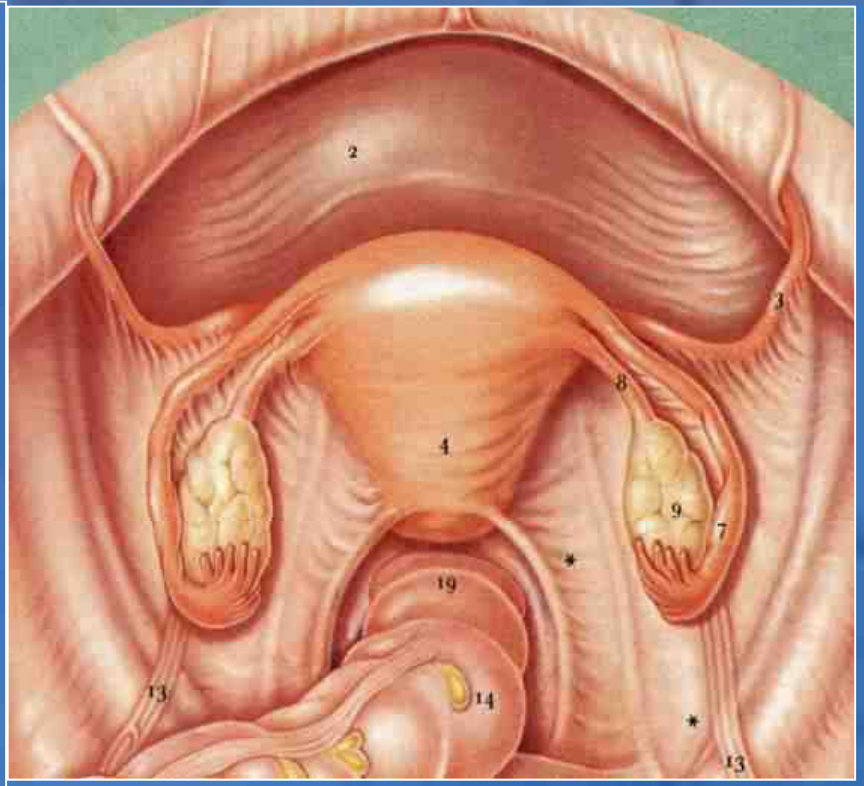
- **Aim of DIE management**
  - Improve quality of life
  - Fertility preservation
  - Low recurrence rate
  - Low complication rate





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

Strategie of the Surgery

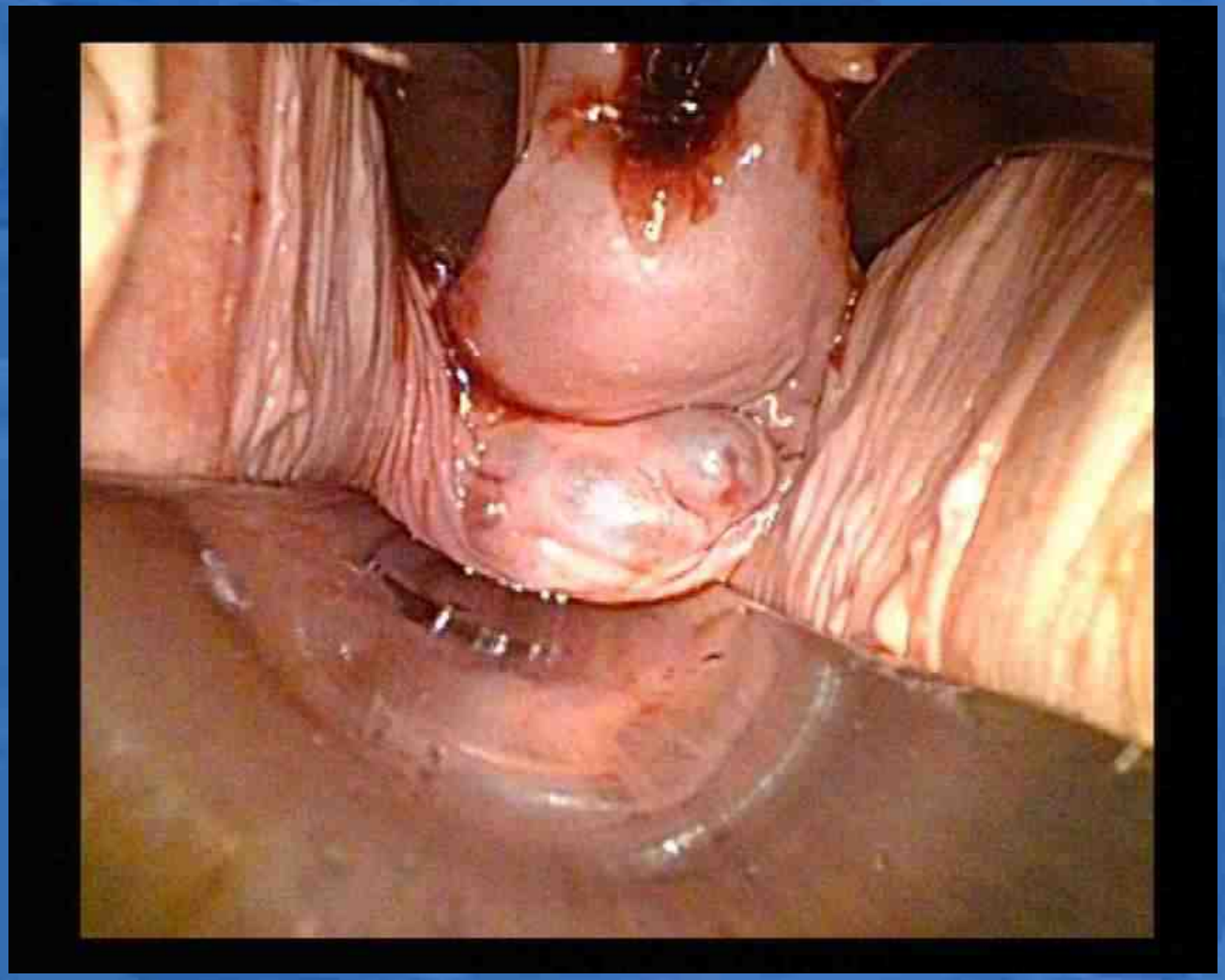
- DIE is a multifocal disease and associated frequently (>50%) with the other type of the endometriosis.
- The resection has to be complet for all of the endometriotic lesions.

For a successful surgery

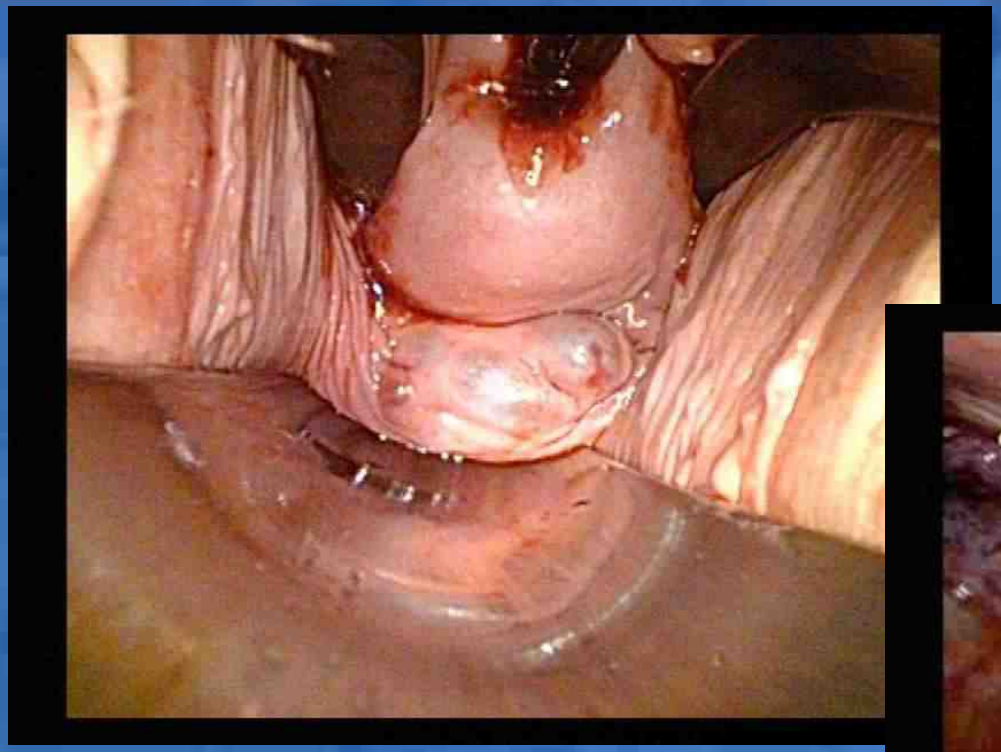
- Identify the origin of the complaints
- Remove all endometriotic lesions
- Remove lesions which cause pain
- Identify all lesions
- In infertility
    - * Preserve organs
    - * Restore organs

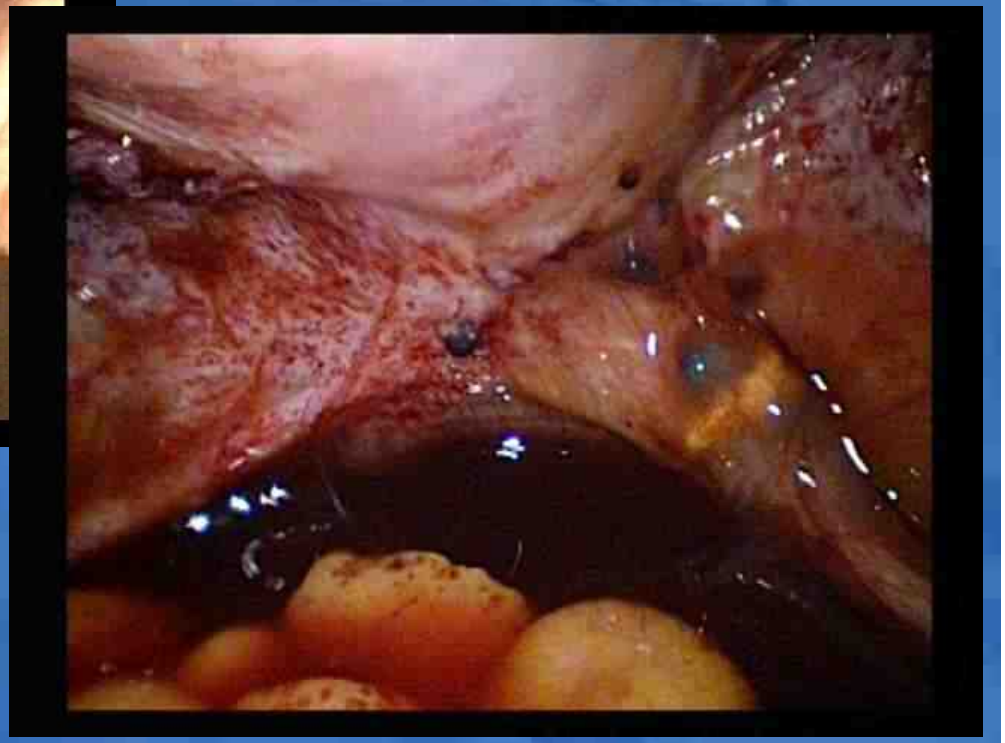
The more you know about the disease prior to surgery the easier surgery you perform

DIE : Clinical examination and laparoscopy

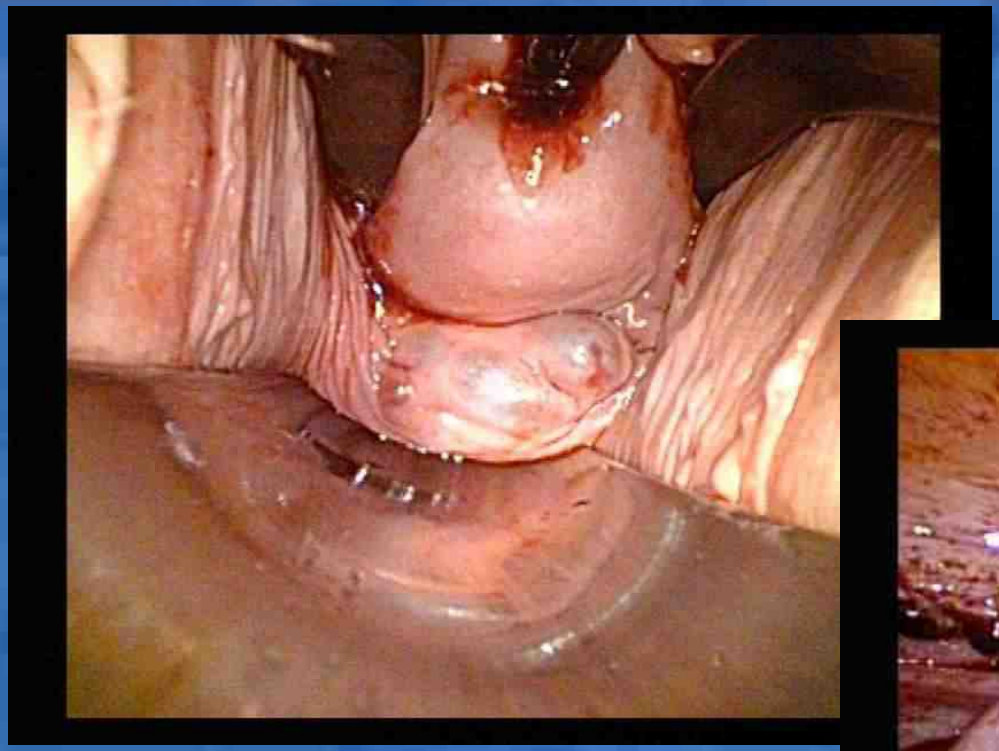


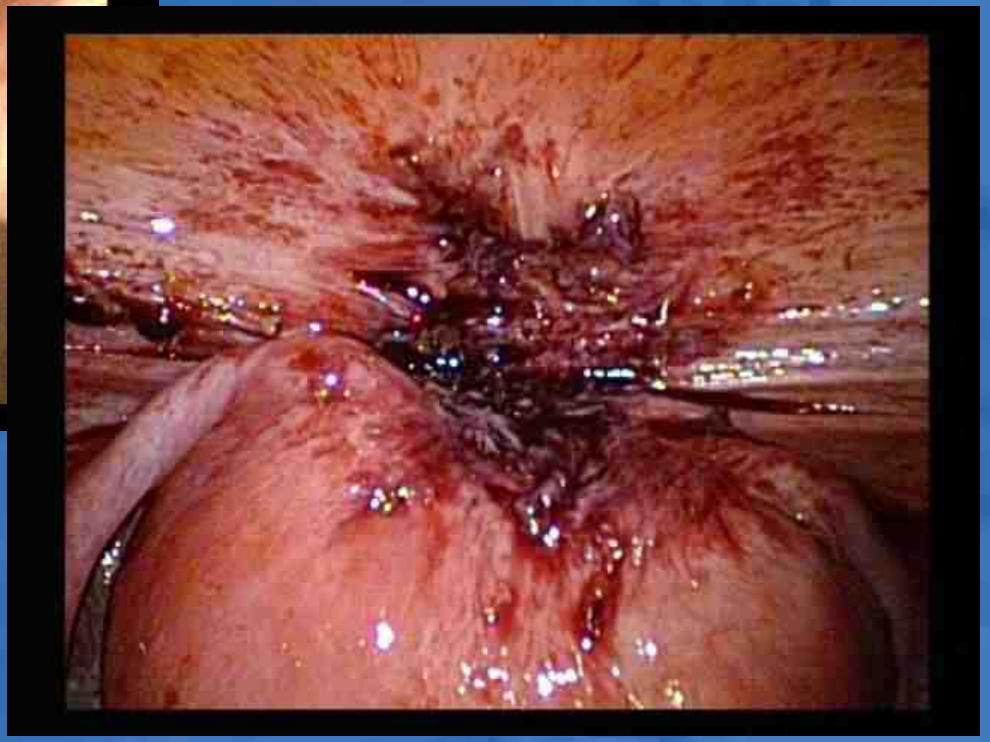
DIE : Clinical examination and laparoscopy



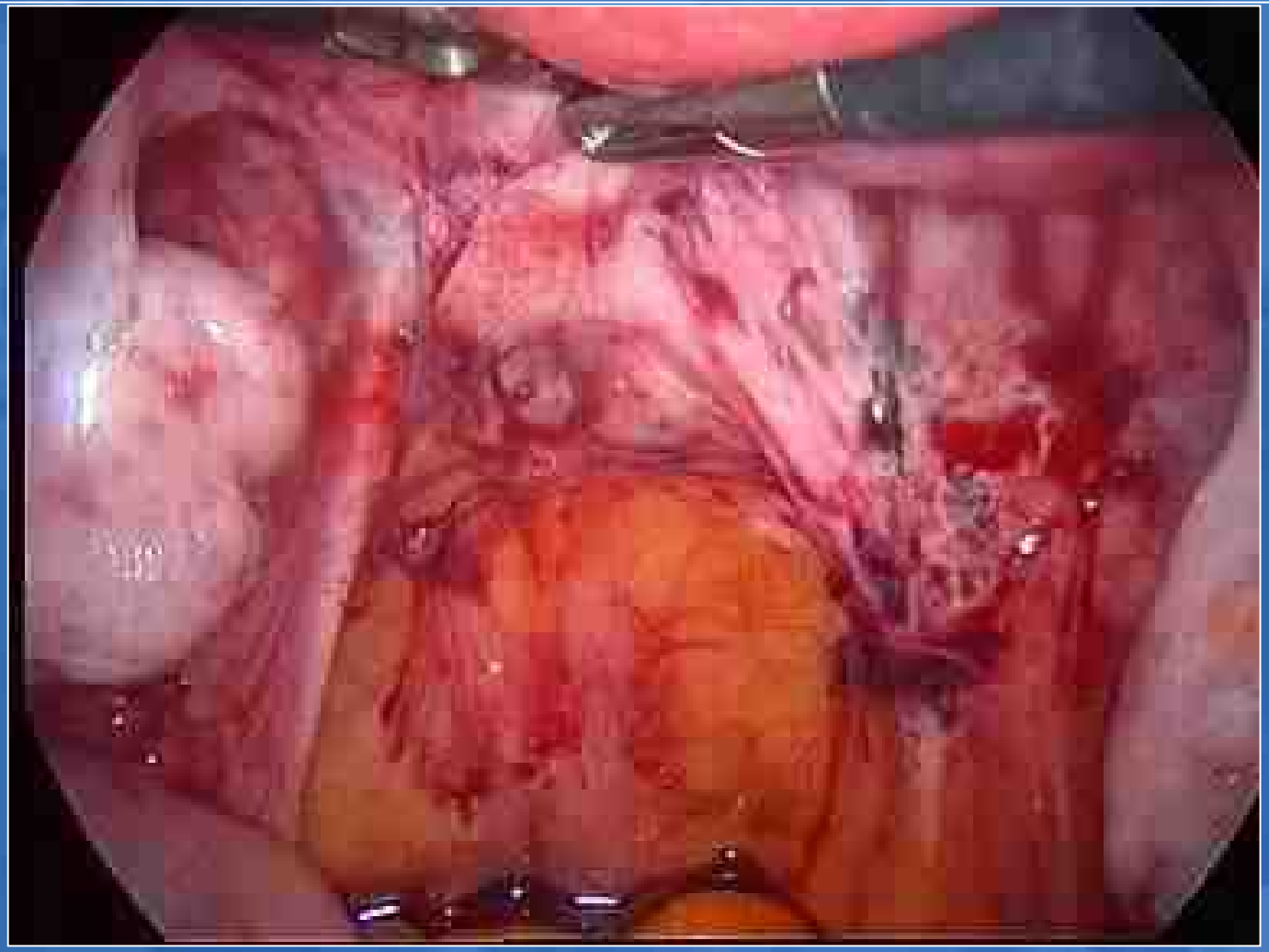


DIE : Clinical examination and laparoscopy



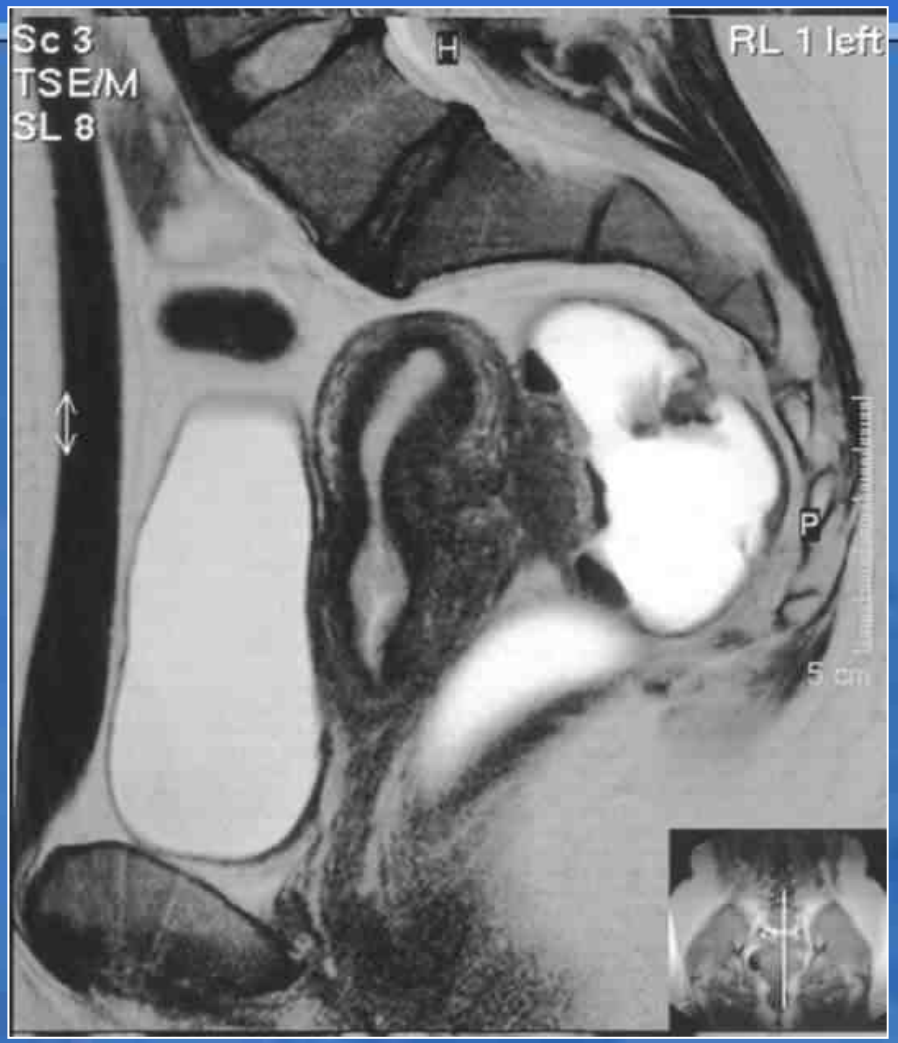


Inspection



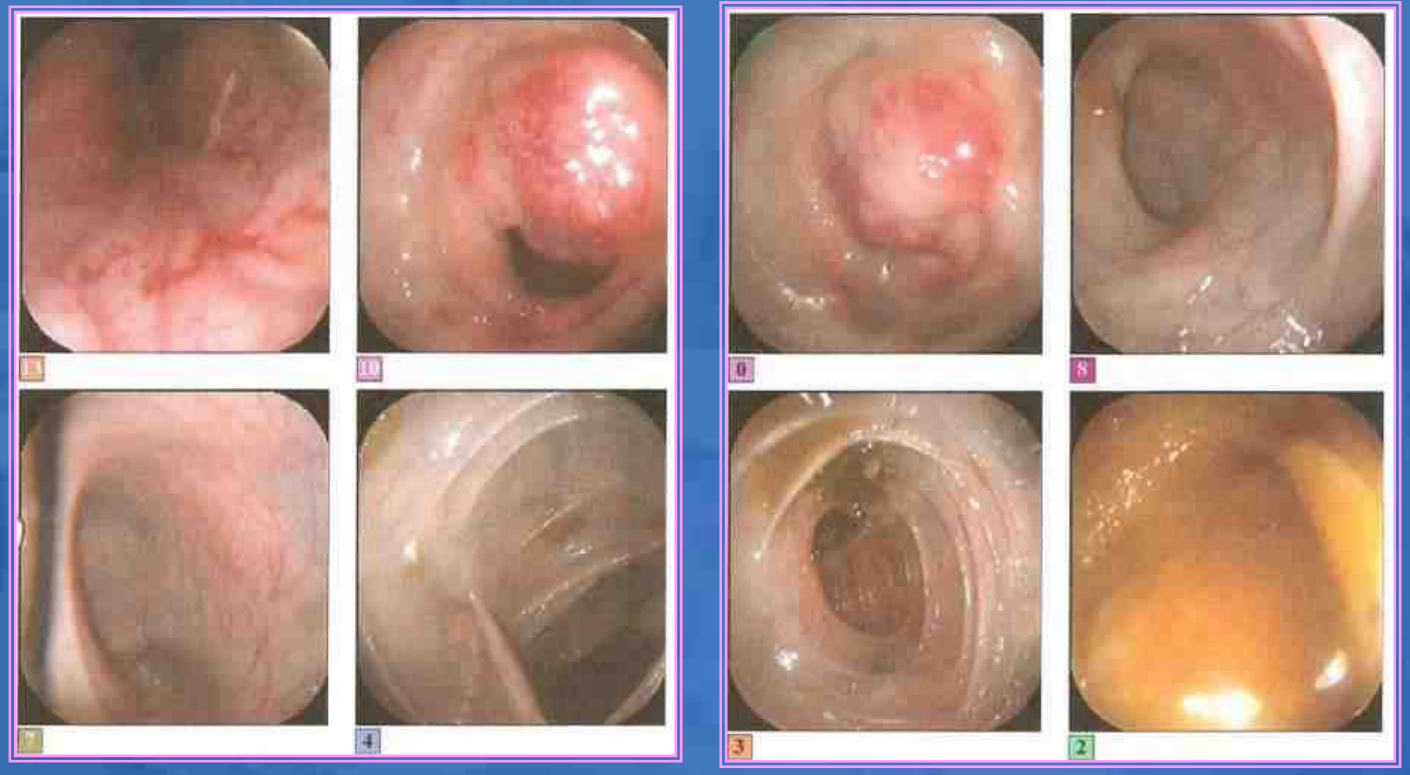
Preoperative management

- Rectovaginal examination
- Pelvic and transrectal US
- Pelvic MRI
- Double contrast enema
- Rectosigmoidoscopy
- IVP (if needed)
- GnRH analogs for 2-3 months before surgery if big nodule (??)
- Bowel preparation



Pelvic MRI

Rectosigmoidoscopy

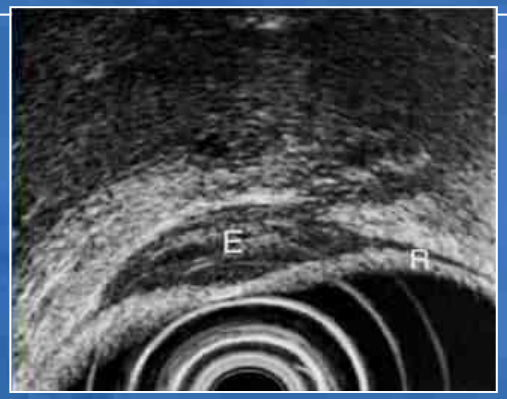


Preoperative assessment of DIE

Is the bowel infiltrated ?

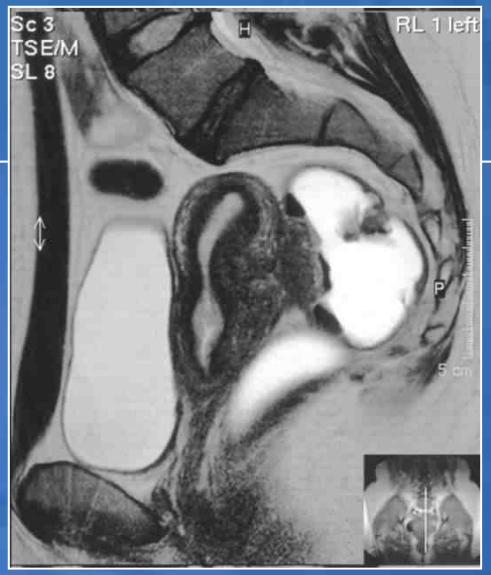
Rectal ultrasonography

- Distinction between
  muscularis propria
  submucosa-mucosa



MRI

- Cartography



Bazot et al Hum Reprod 2007

Similar accuracy for diagnosis of rectal involvement when compared to MRI

Management of DIE

1/ How to diagnose DIE ?

2/ What kind of preoperative work-up ?
Are the bowel,bladder,urether infiltrated?

3/ What kind of surgical techniques ?
-Nodule excision alone
- Shaving
- Segmental bowel resection
- Discoid bowel excision

4/ Risk and benefits of each technique.

Preoperative Planification

- We have to evaluate the depth of infiltration and radial extension of endometritic nodole with MRI or transrectal USG
- If infiltration up to the mucosa , invasion > 50% of the circumference , bowel occlusion of >50% (longer than 2-3 cm) bowel resection has to be programed.
- Preoperative ureteral stending if there is ureterohydronephrosis.

Surgical Techniques (DIE)

- **Nodule excision alone.**
- **If bowel infiltration**:

1. Sheving, if superficial muscular invasion.
2. Discoid excision if muscular invasion but nodule < 3-4 cm.
3. Segmental sigmoid resection if:

-Bifocal intestinal lesions

-Nodule > 3-4 cm

-Sigmoid lumen restriction >50%

-Sigmoid muscularis,mucosal layers infiltration

Type of Surgical Treatment for DIE

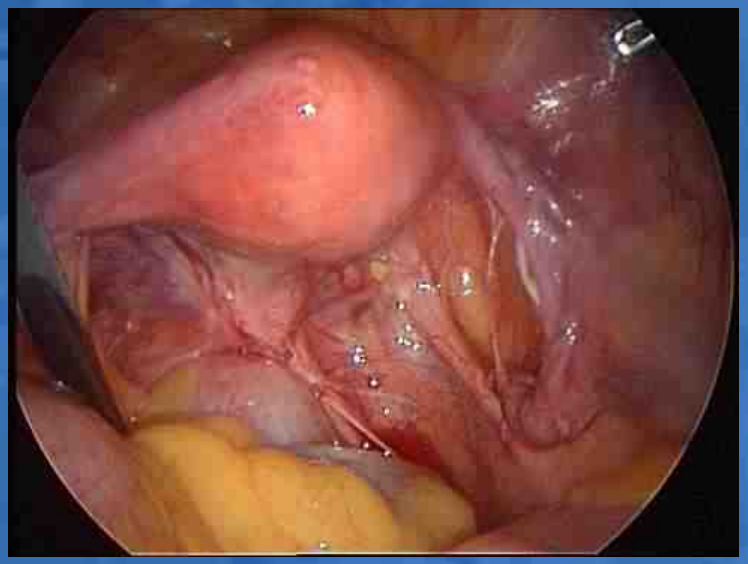
- Exision of the nodular lesion
  - **Without bowel resection** :
    - Shaving technique
    - Uterosacral ligaments infiltration
    - Vaginal infiltration
  - **With bowel resection**:
    - Discoid bowel resection if muscular invasion but nodule < 3 cm
    - Segmental bowel resection if nodule>3-4cm or if sigmoid lumen restriction >50% and if bifocal lesion

DIE and Bowel Resection

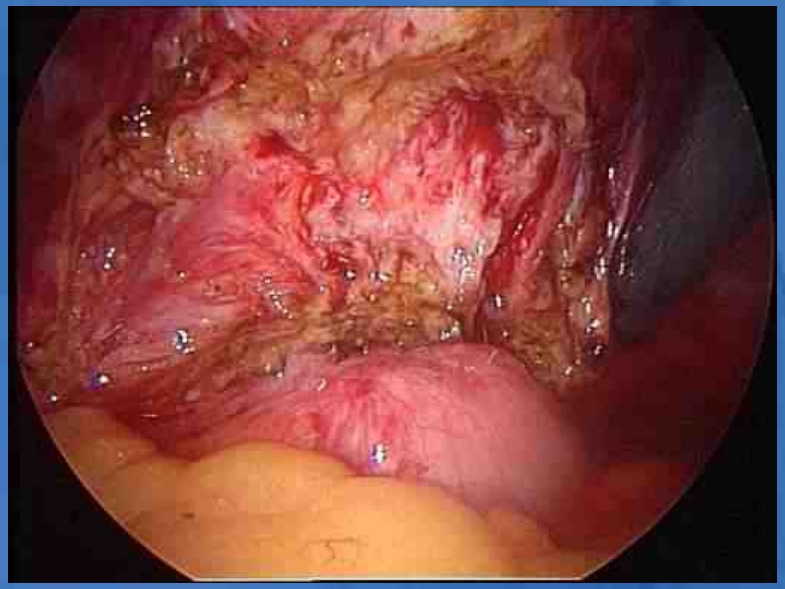
- Discoid bowel resection:Muscular invasion and if RV nodule < 3 cm.
- Segmental bowel resection:İf nodule > 3-4 cm.or/and if sigmoid lumen obliteration >50% and if bifocal sigmoid lesions

Only nodul and vaginal wall excision for DIE

-



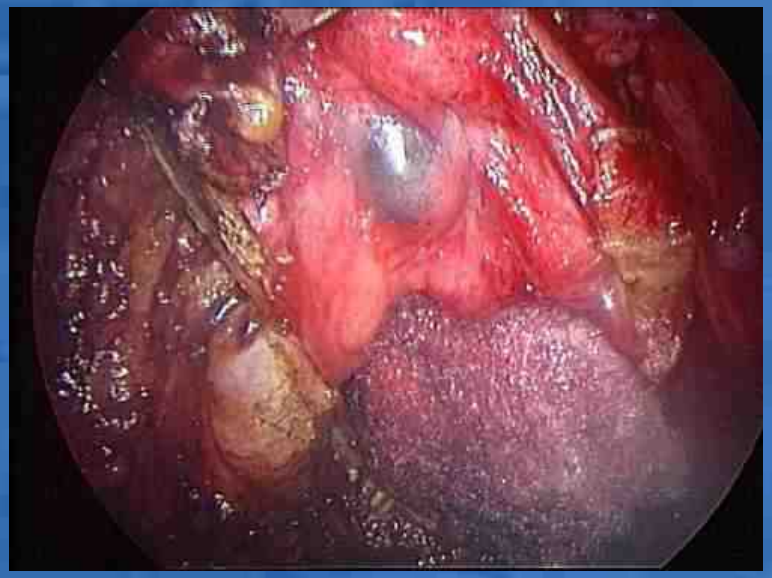
Section of both US ligaments



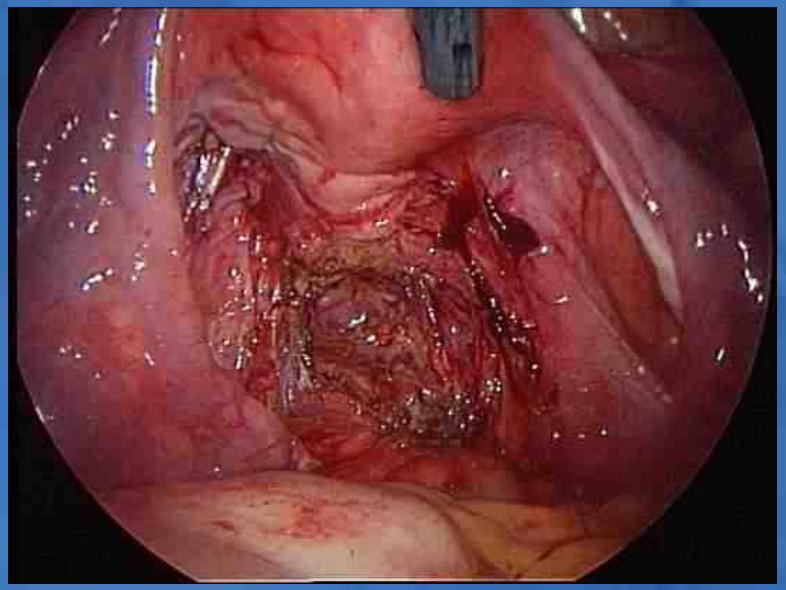
Rectal dissection

Only nodule and vaginal wall excision

- Without bowel resection



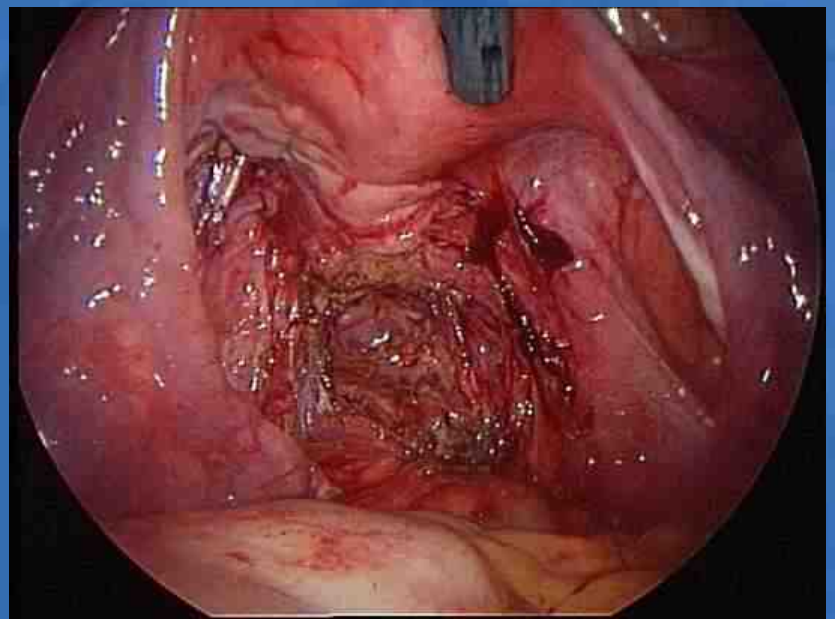
Vaginal opening



Vaginal closure

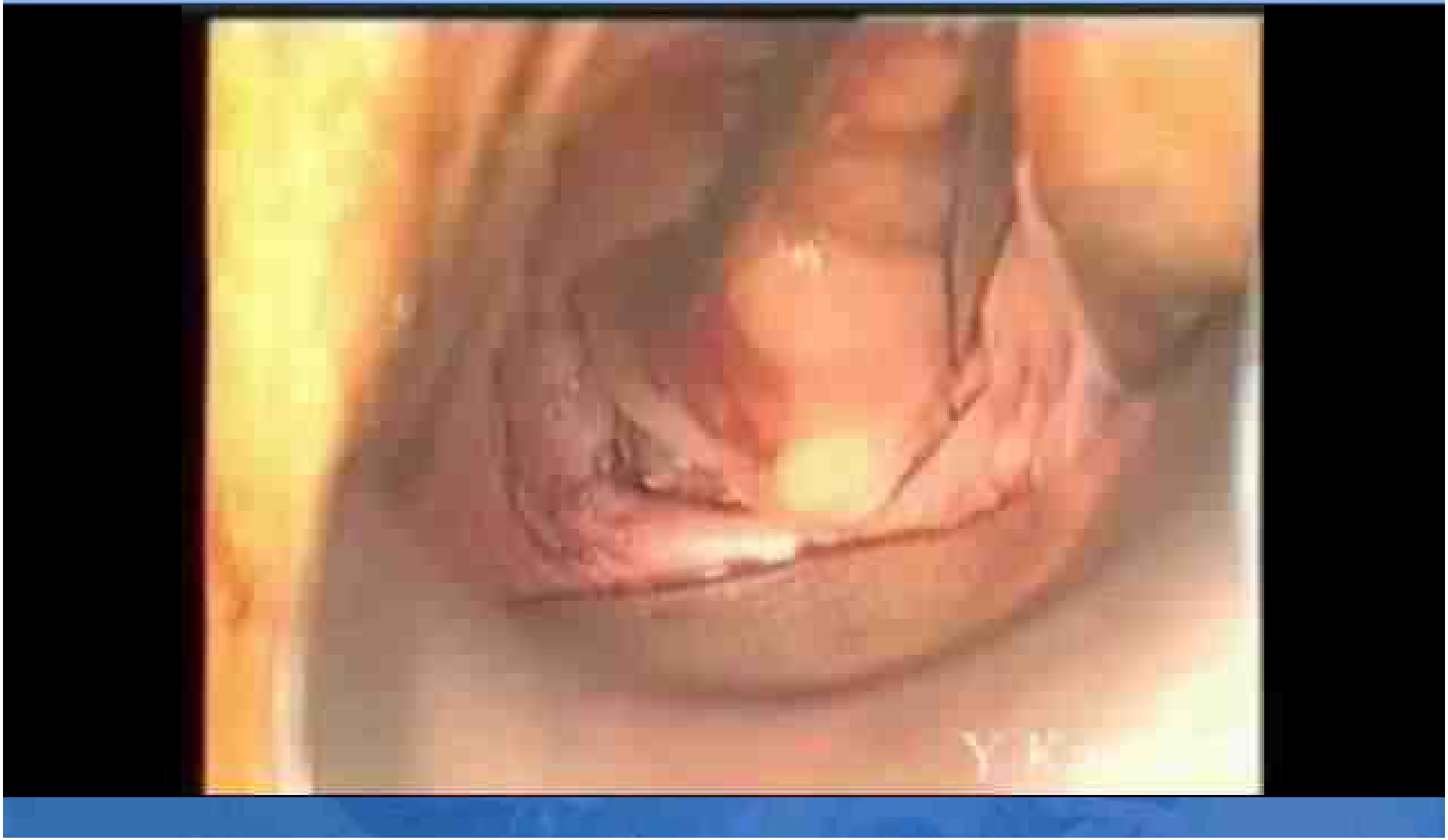
Only nodul and vaginal wall excision

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



Angioni et al 2006
Dubernard et al 2006

RV Nodul excision



Surgical Techniques (DIE)

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-Nodule > 3-4 cm

-Sigmoid lumen restriction >50%

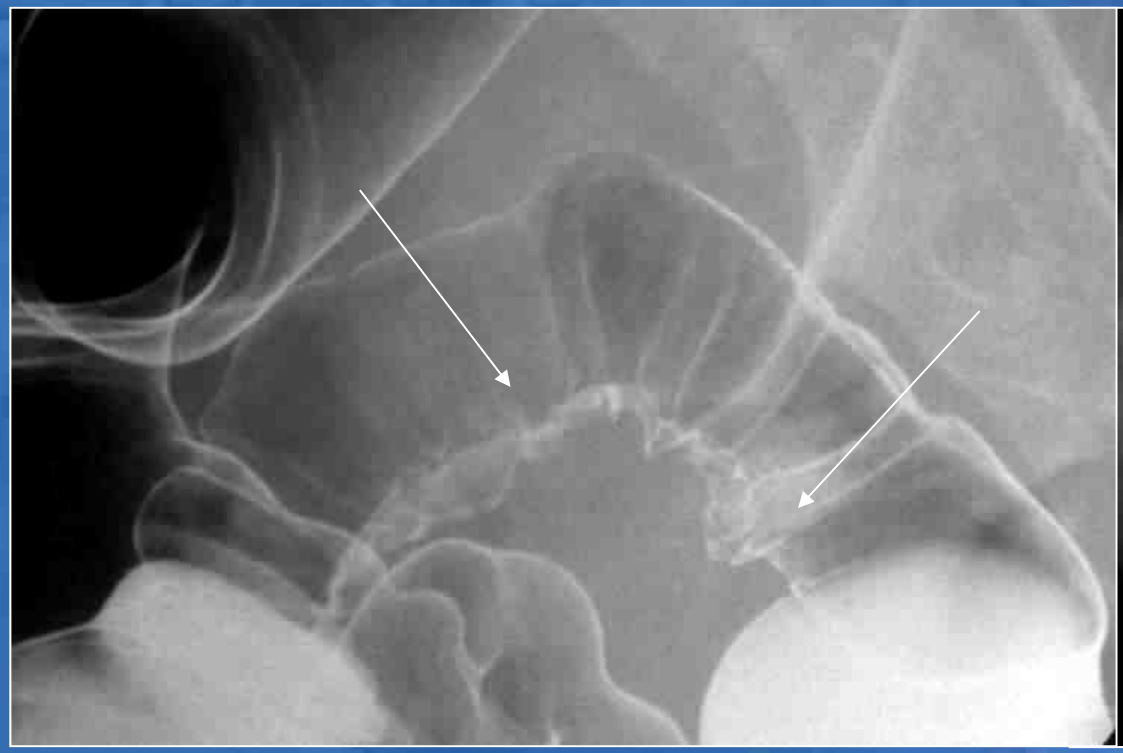
-Sigmoid muscularis,mucosal layers infiltration

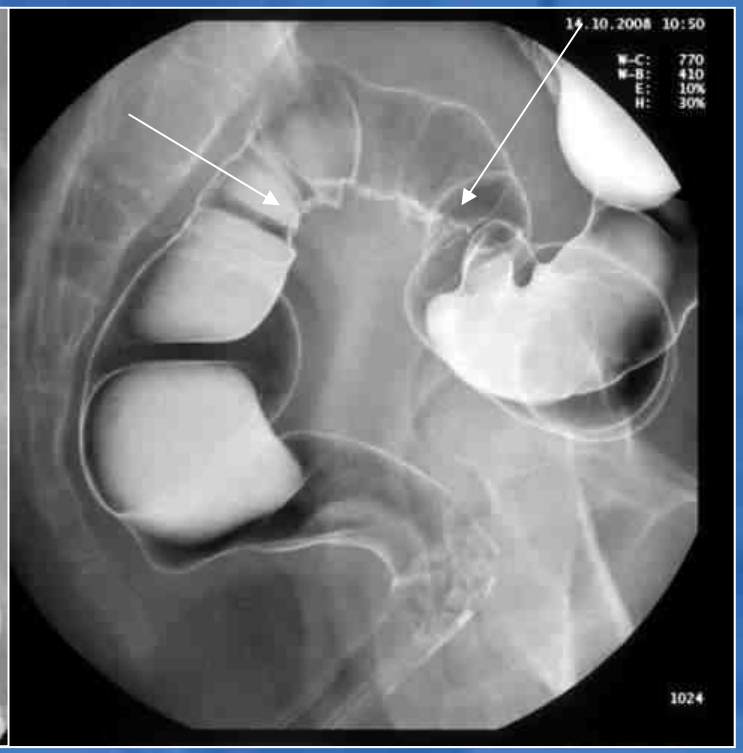
Principles of DIE Surgery

- Complet or nearly complet surgery
- In >10% of cases of deep endometriosis, lymph nodes contain endometrial or endometriotic cells (Gong 2011,Tempfer 2011),don't need to remove them
- Discoid Excision or Sheving have to be first choice
- High leakage rate (15%) of low rectal resection (Ret Davalos 2007) which is <1% for sigmoid resection
- Large majority of bowel resection for endometriosis published were lower resection

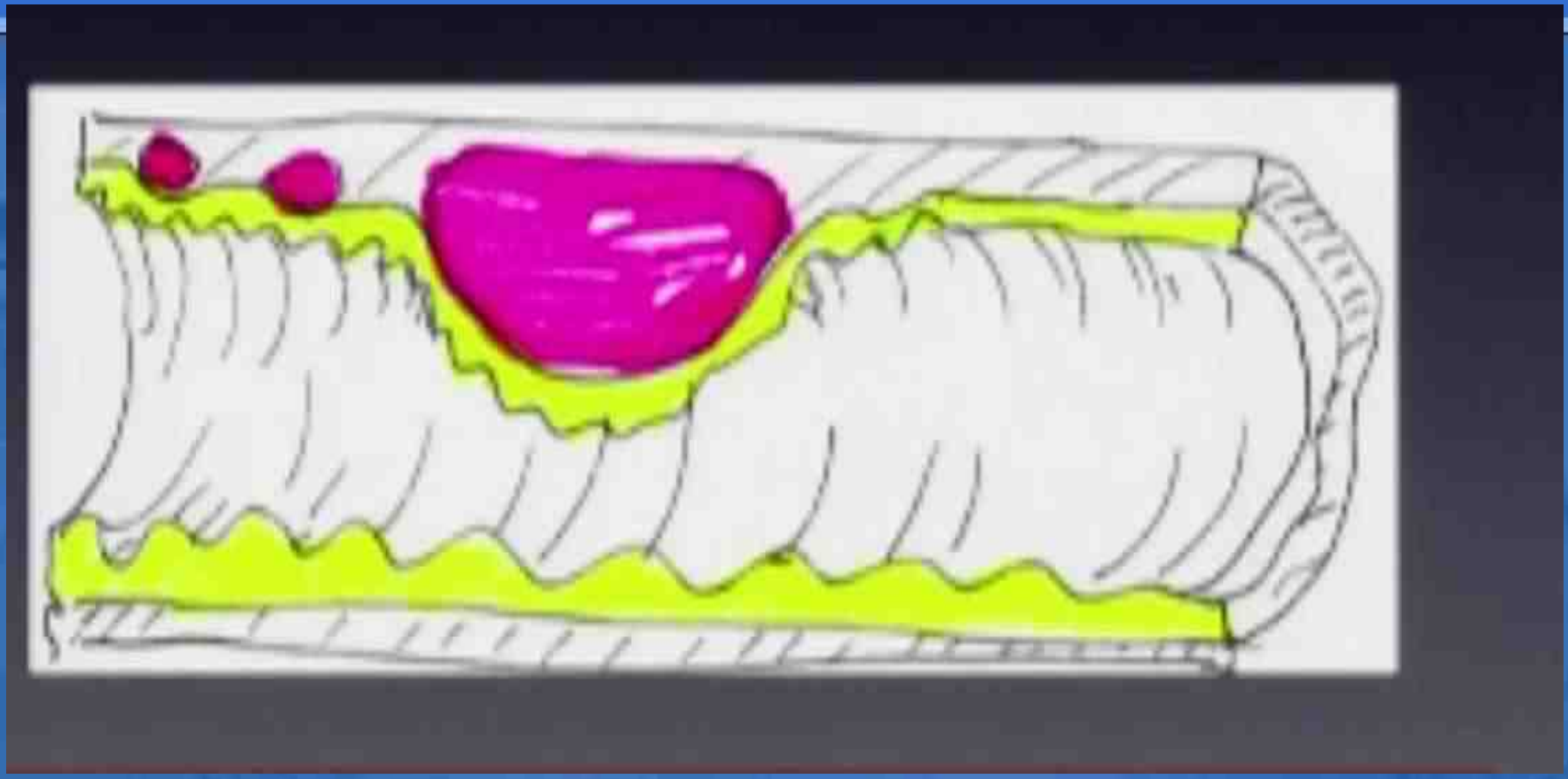
With bowel infiltration

- Baryum enema: irregularities of anterior rectal – sigmoid wall

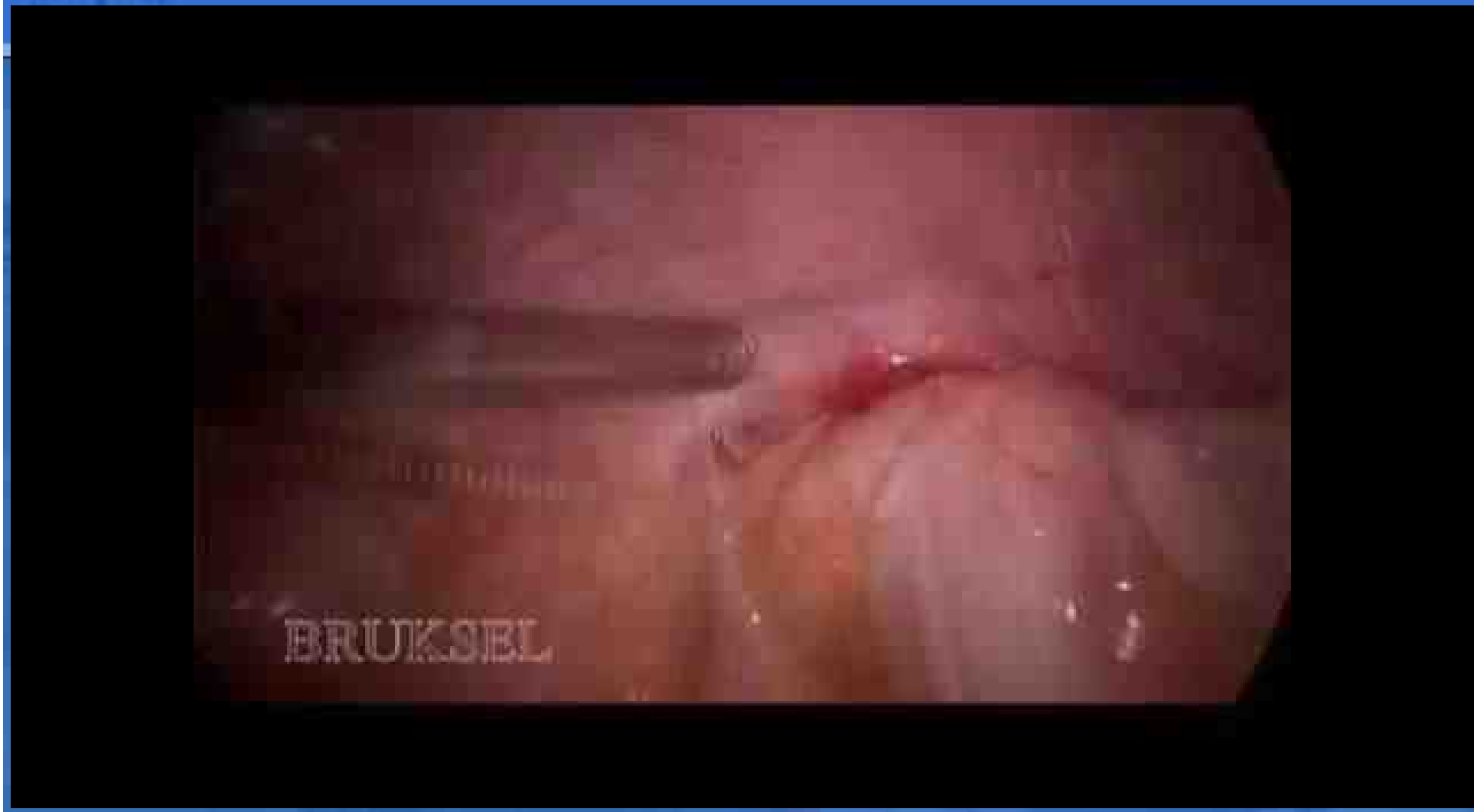




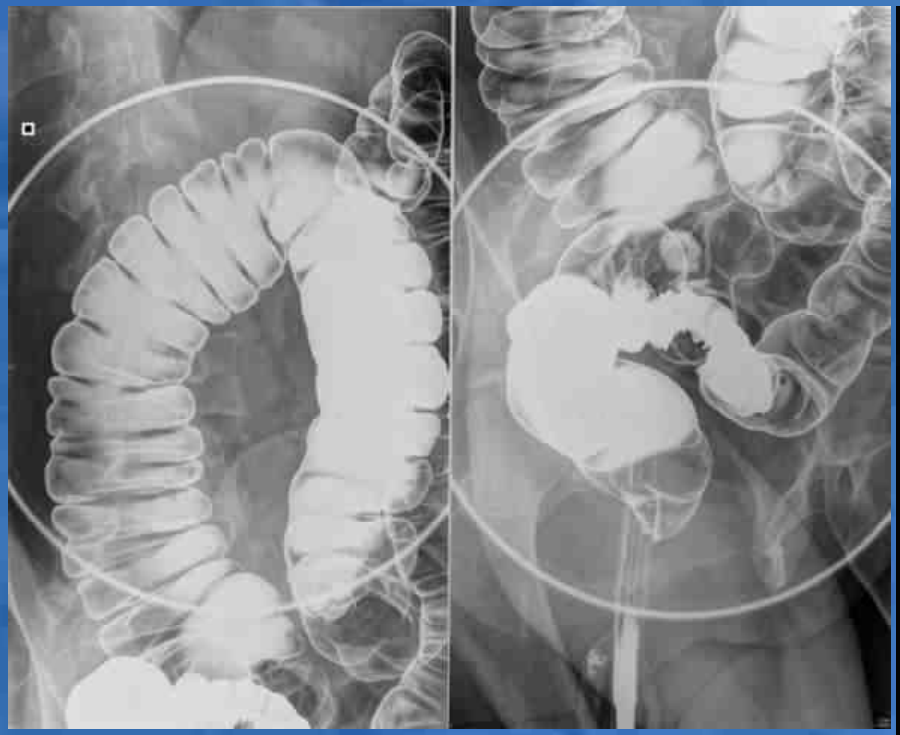
RV nodule shaving

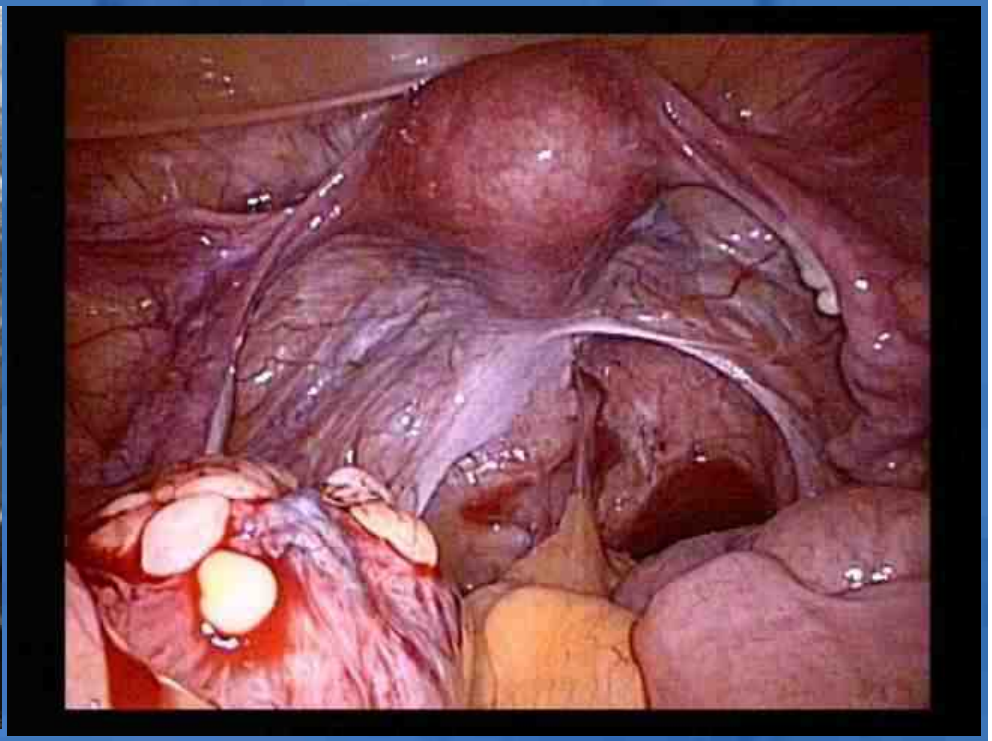


RV nodule shaving



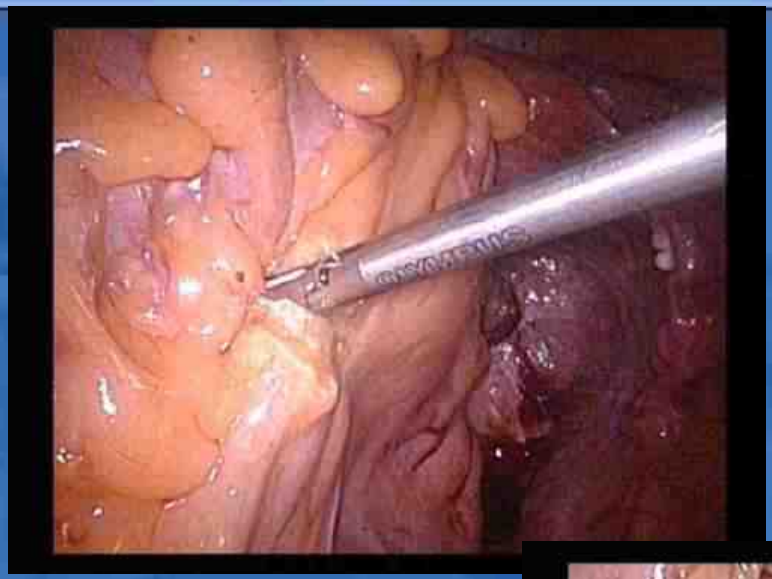
With bowel infiltration

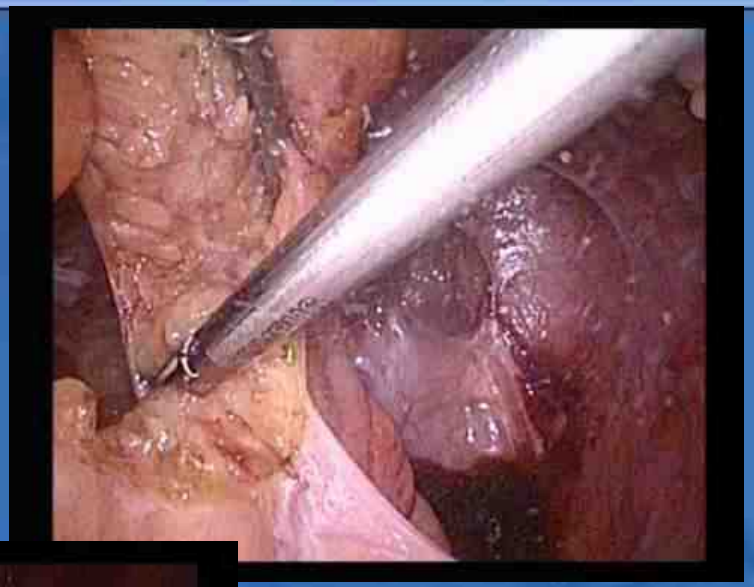


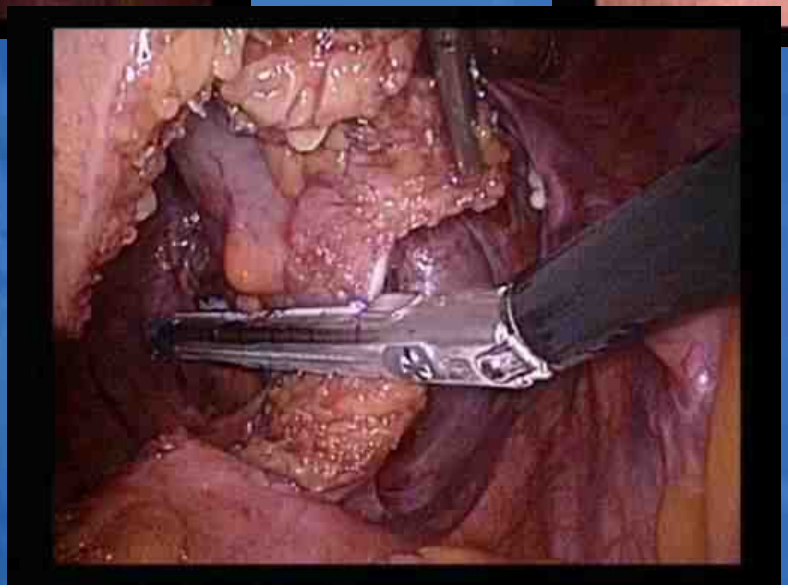


Segmental sigmoid resection

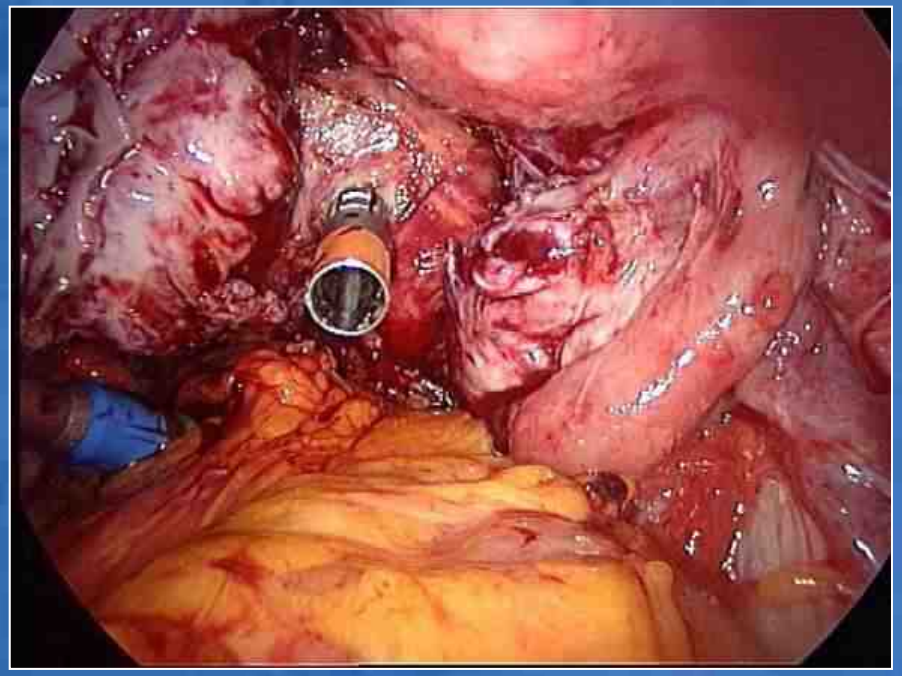
Segmental Sigmoid Resection

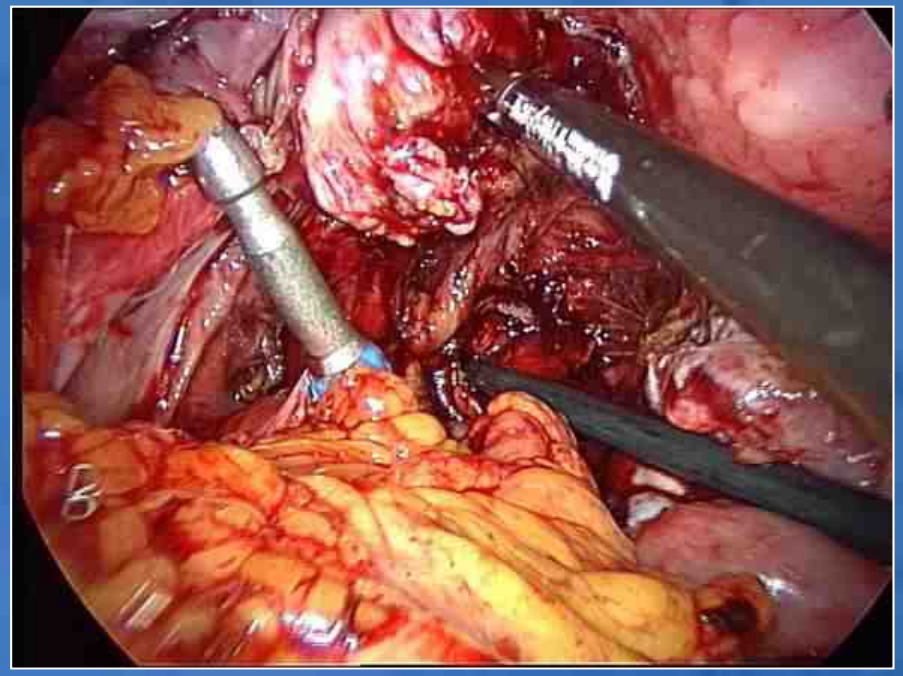




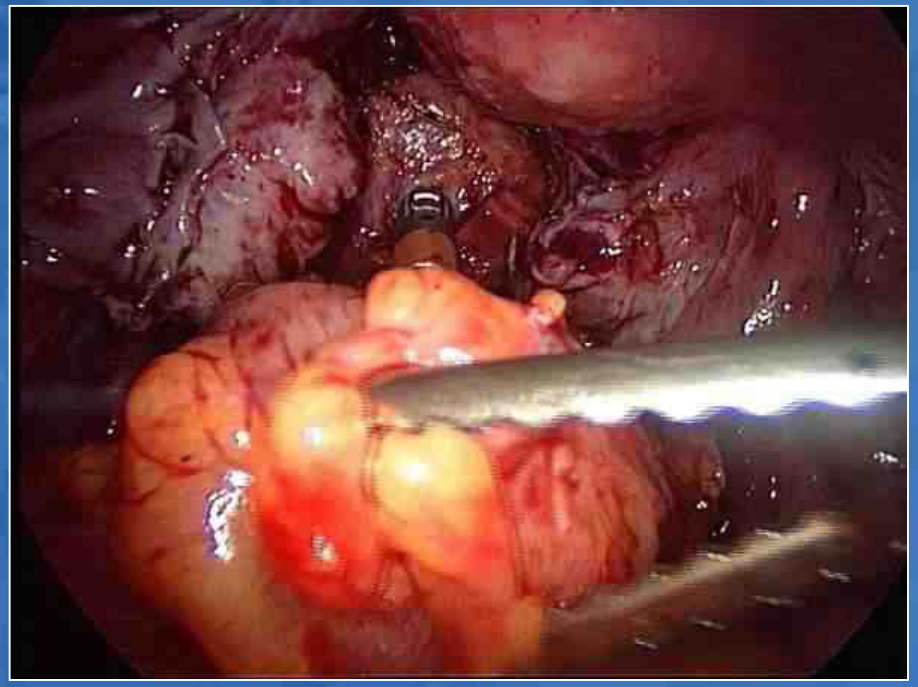


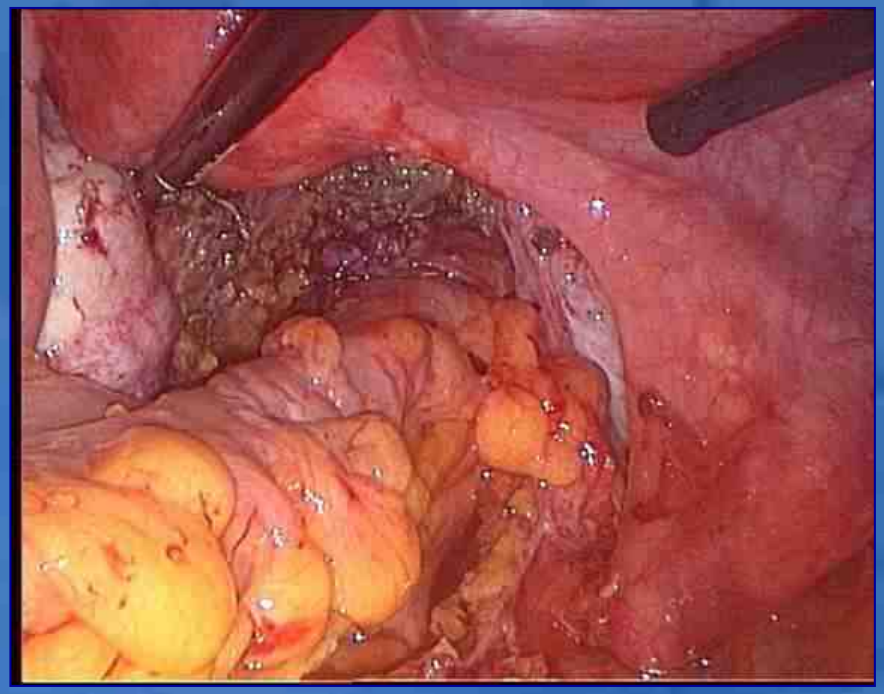
Segmental Sigmoid Resection





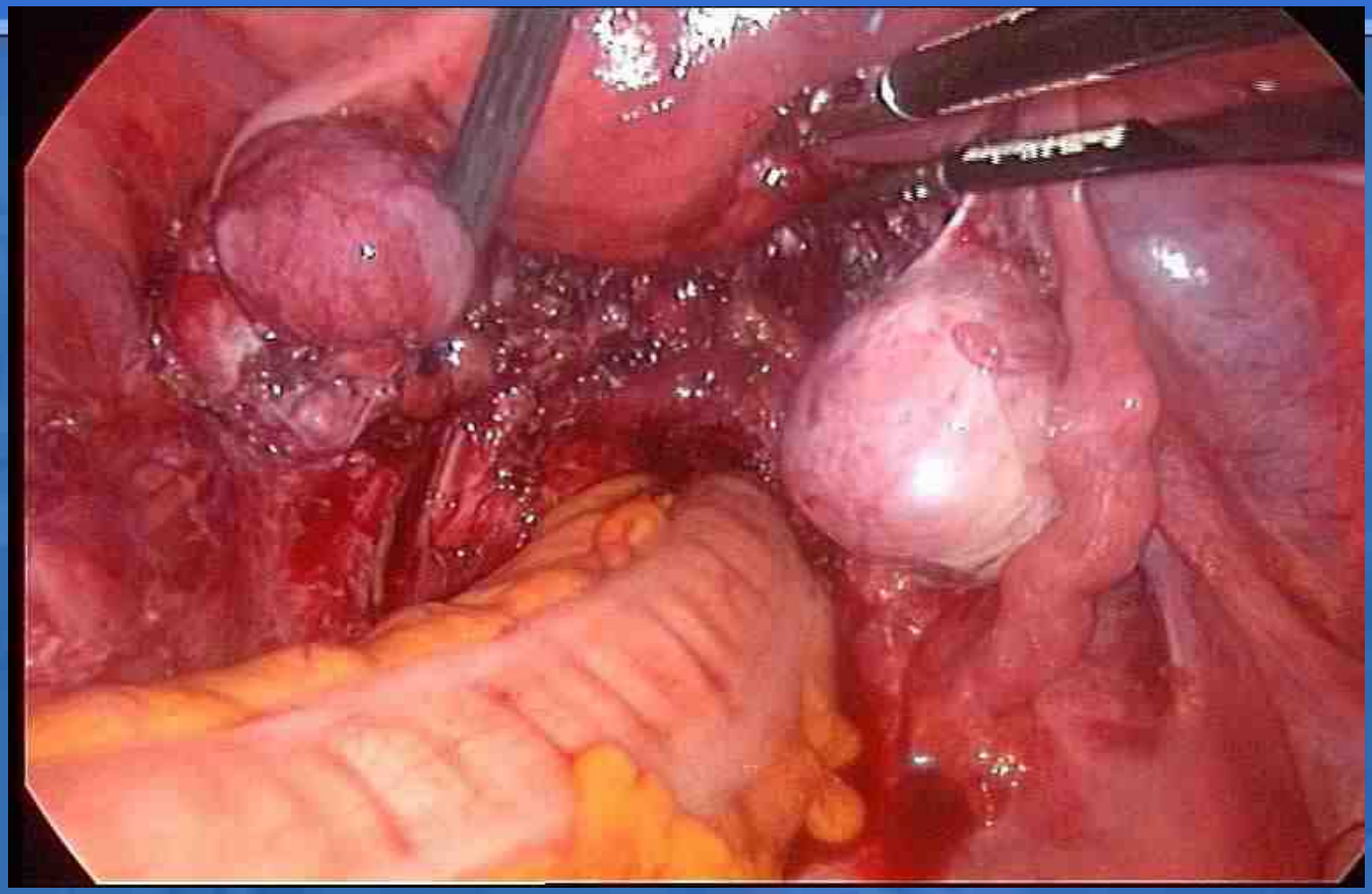
Segmental Sigmoid Resection





End-to-end colorectal anastomosis (CCEA)

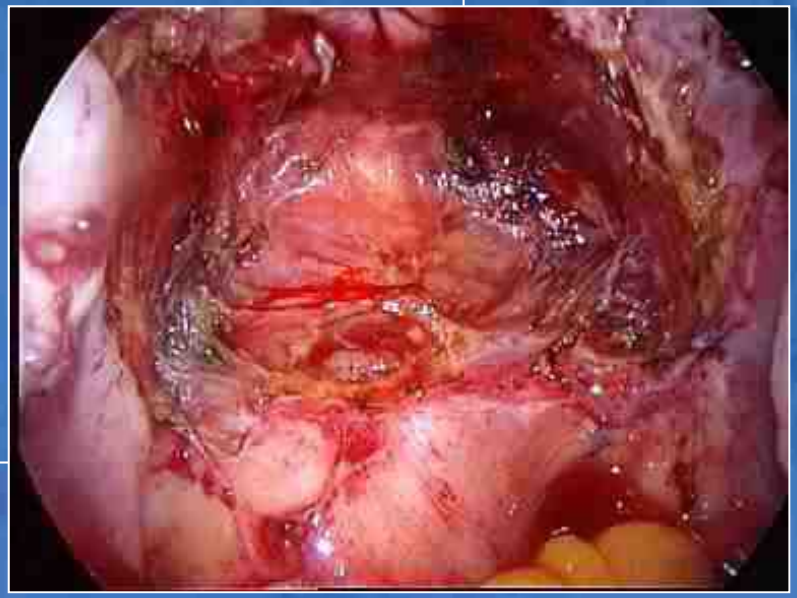
Segmental Sigmoid Resection



Final view

Deep infiltrating endometriosis

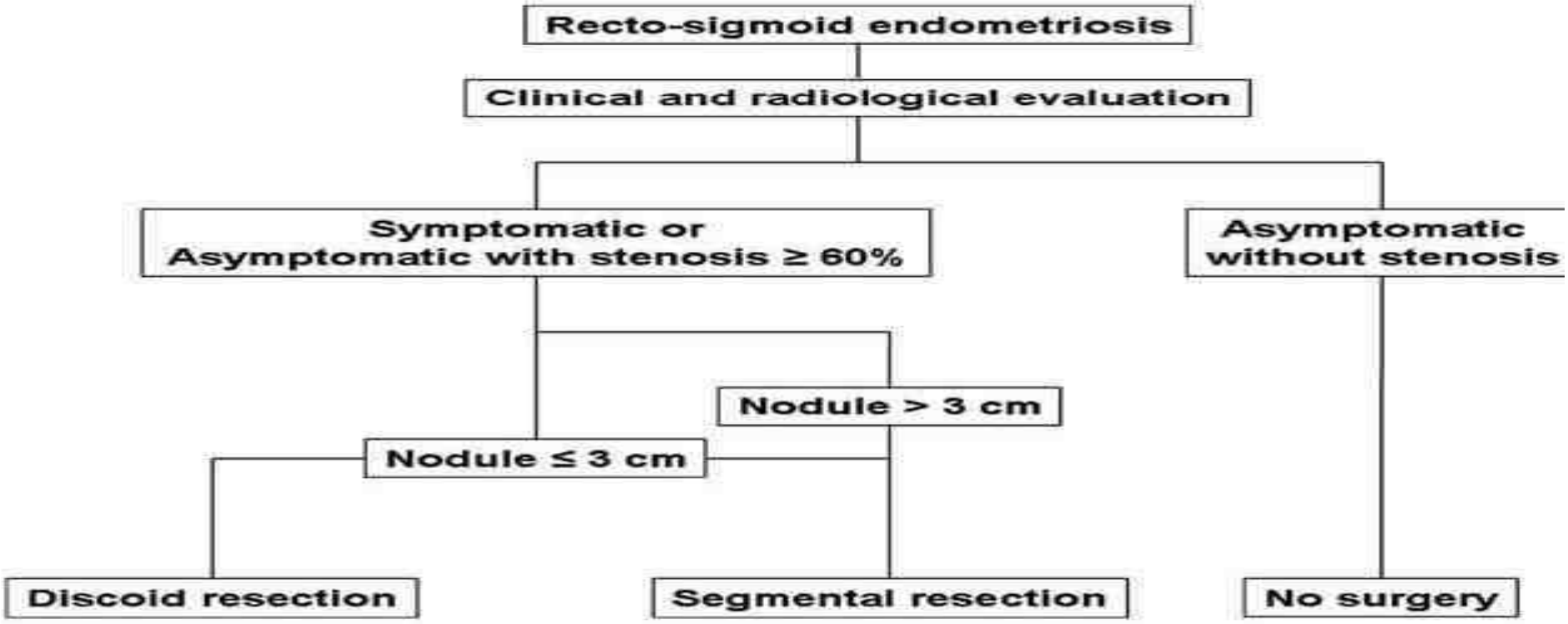
- « Check list » at the end of the surgery
  - Treatment is complete
  - Haemostasis is achieved
  - Absence of rectal perforation (Methylene blue rectal injection)
  - Ureteral peristaltism is satisfactory



Discoid or segmental rectosigmoid resection for DIE Fanfani et al.Fertil.Steril.2010

FIGURE 1

Surgical management algorithm for deep infiltrating endometriosis patients with rectosigmoid involvement.



Fanfani. Rectosigmoid endometriosis, discoid resection. Fertil Steril 2010.

Bowel Endometriosis

Type of laparoscopic colorectal surgery for endometriosis

- Segmental laparoscopic resection :57.5%
- Full-thickness disc resection : 13.7%
- Superficial thickness excision : 28.8%

CHOICE ?

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

Laparoscopic Surgery for Sigmoid nodule (69 cases)

- Shaving 21 (30 %)
- Discoid excision 17 (25 %)
- Segmental resection 31 (45 %)

Karaman Y, 2013

Digestive complications of colorectal surgery

Authors	Patients	Rectovaginal fistula	Linkage of anastomosis	Secondary ileo-colost
Nezhat et al. (1992)	15	0	0	0
Jerby et al. (1999)	26	1	0	1
Possover et al. (2000)	34	0	2	0
Daraï et al. (2005)	40	4	0	4
Campagnacci et al. (2005)	7	0	0	0
Ribeiro et al. (2006)	125	2	0	NA
Panel et al. (2006)	21	2	0	2
Lyons et al. (2006)	7	0	0	0
Brouwer and Woods (2007)	213	2	1	NA
Wills et al. (2009)	167	2	3	2
Minelli et al. (2009)	357	14	4	12
TOTAL	**1003**	**27 (2,7 %)**	**10 (1 %)**	**21(2,1%)**

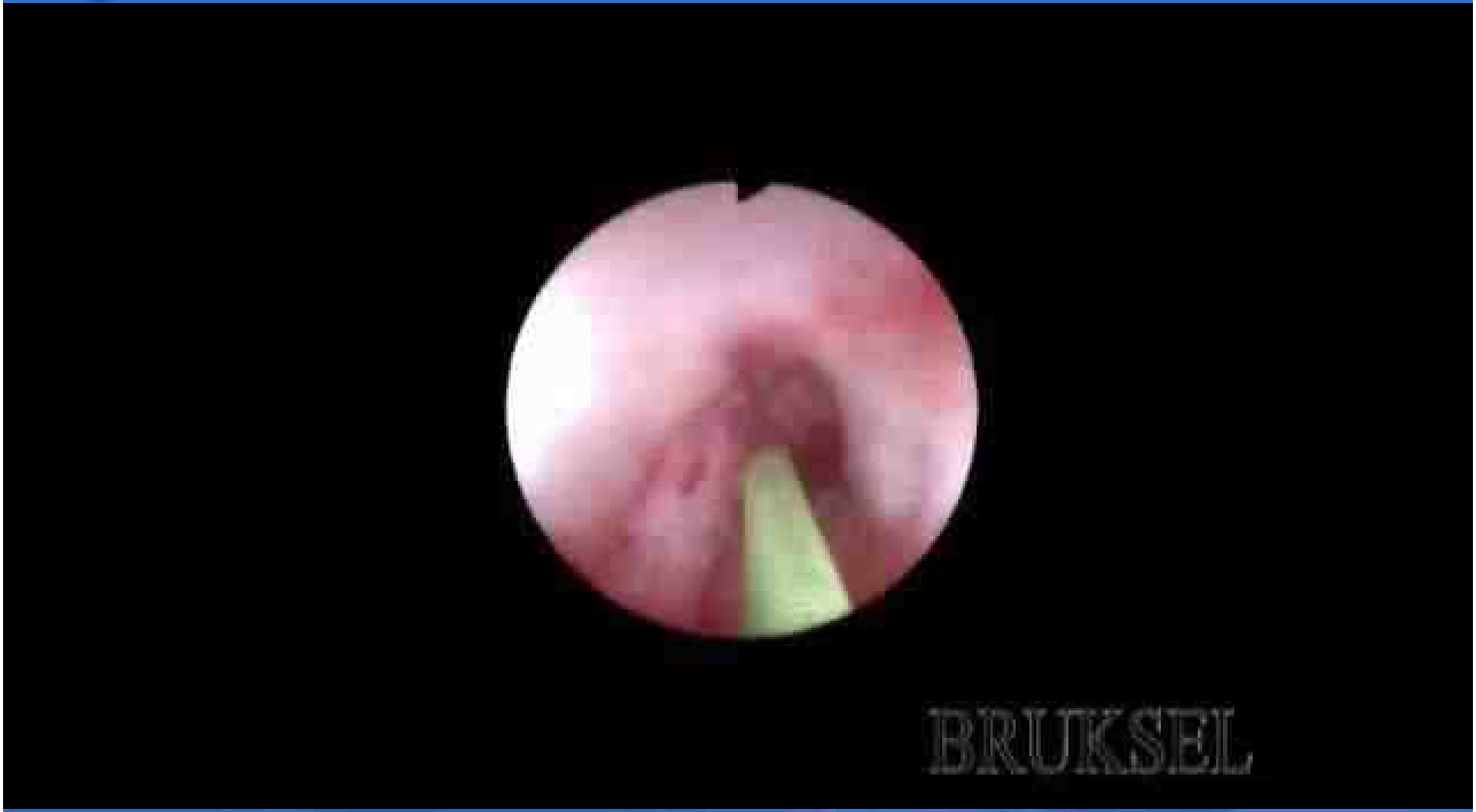
Rektovajinal ve intestinal endometriozisli hastalarda yapılacak cerrahi radikalleştikçe ağrı şikayetleri azalmakta iken komplikasyon oranı artmaktadır. Bu yüzden her hastanın bireysel olarak değerlendirilmesi ve fayda-zarar dengesi gözetilerek cerrahinin boyutunun belirlenmesi kuvvetle önerilir.

Ureteral endometriosis

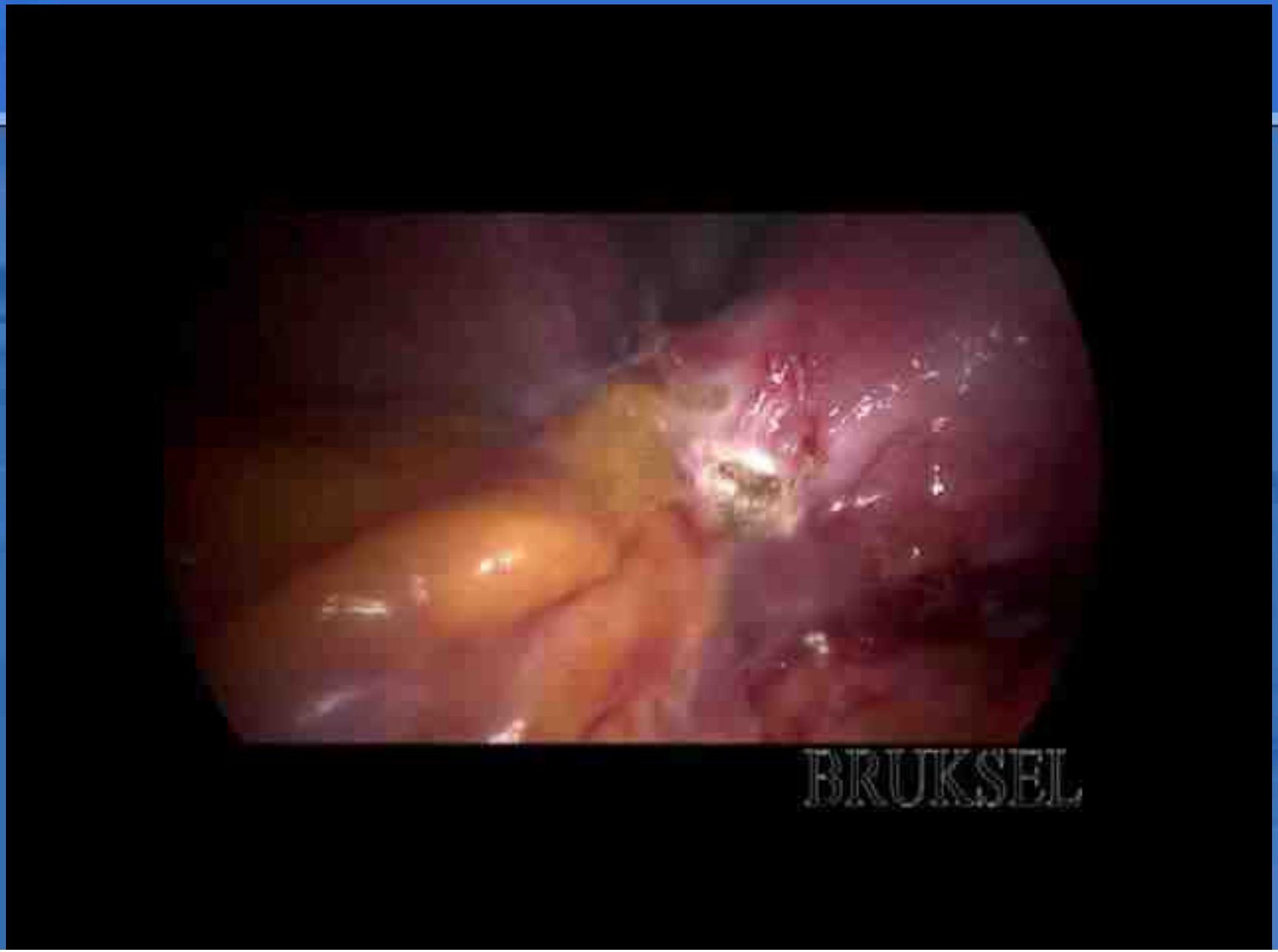
- Urinary tract endometriosis 1-4%
- Ureteral involvement 0,1-0,4%
- Caused by intrinsic ± extrainsic disorders.
- Ureteral baloon , stent or ureterolysis by laparoscopy
- Ureteral resection :
  - Reanastomosis
  - Reimplantation

LENA et al 2006

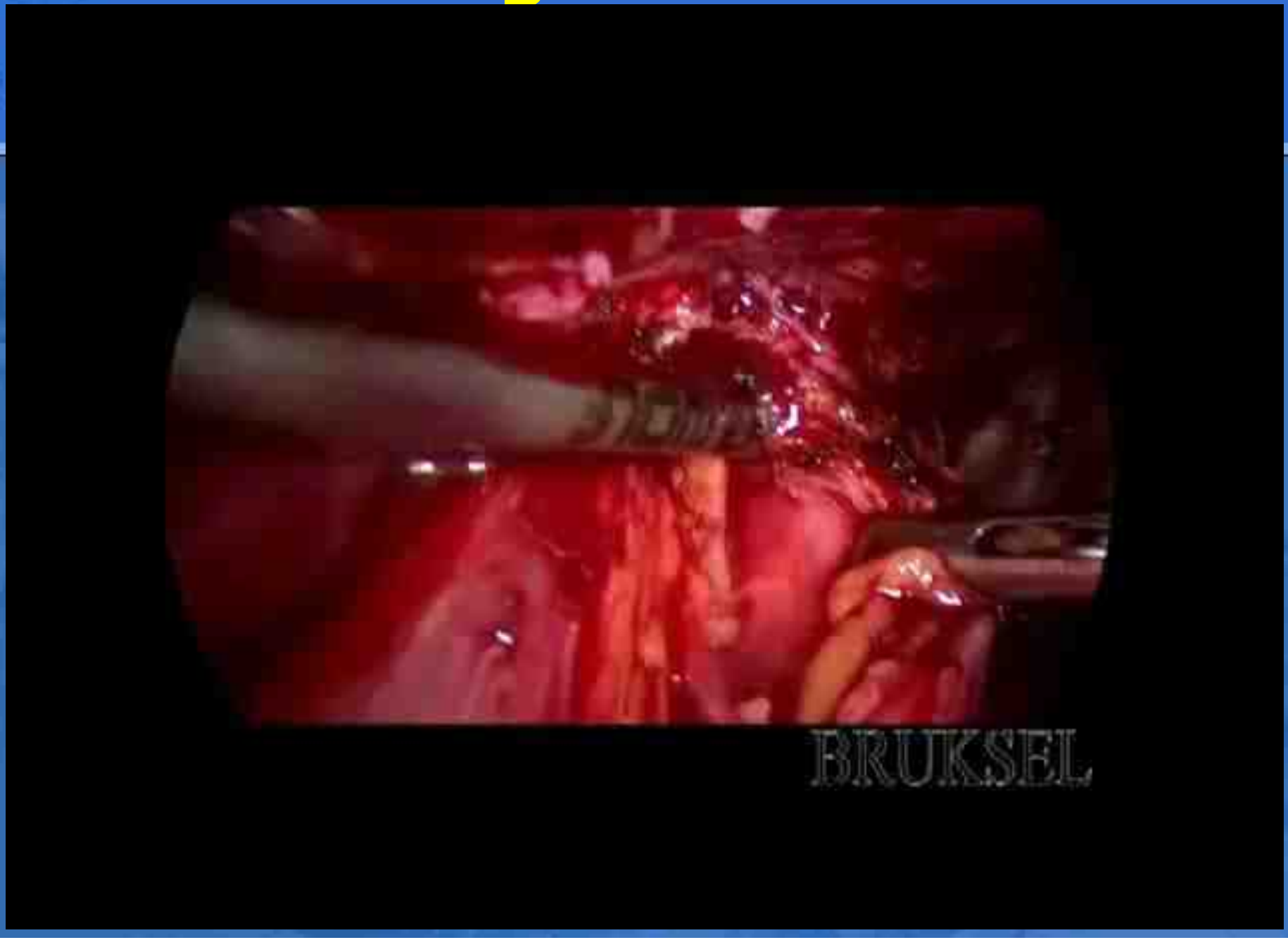
MEGA URETHER



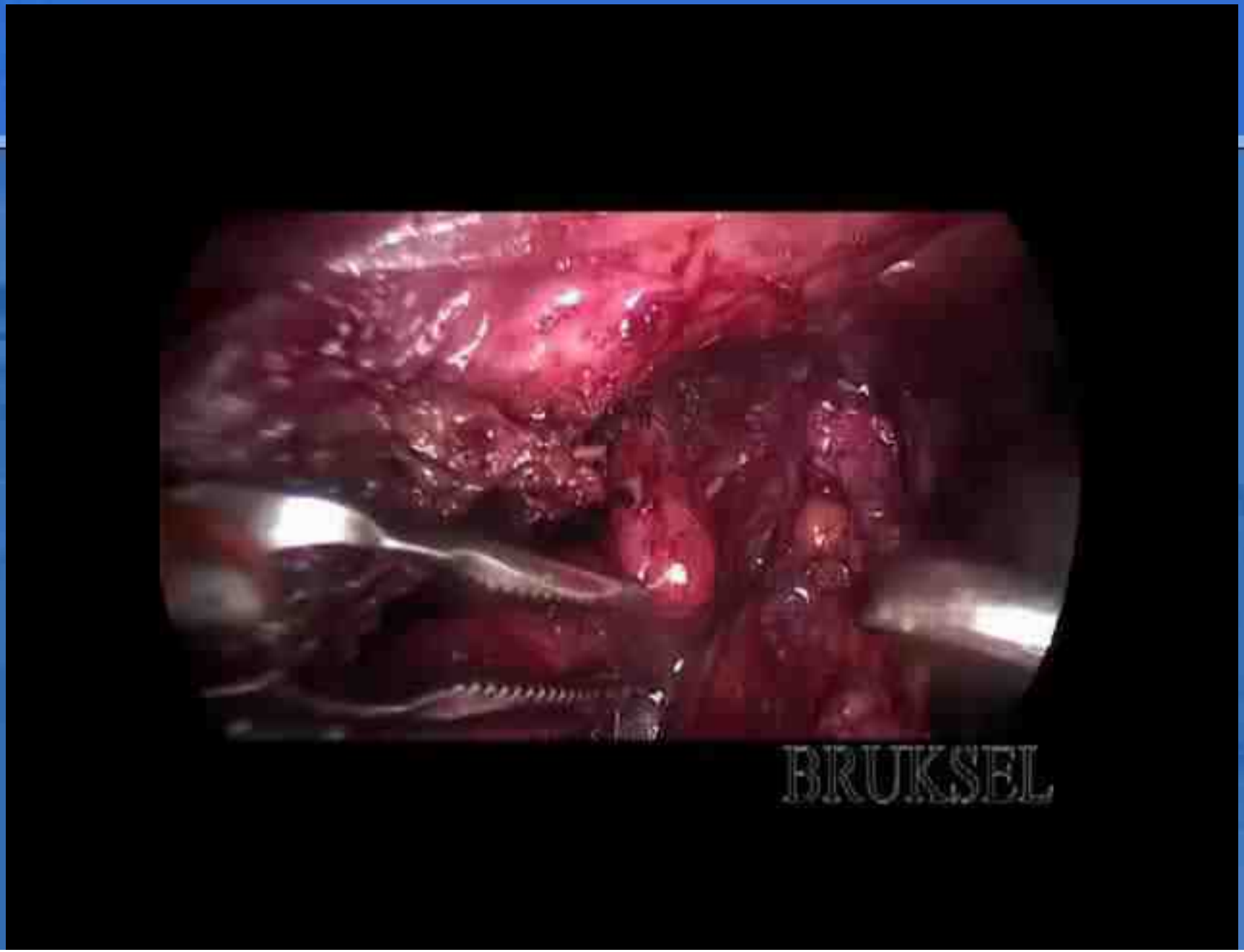
Mega urether 2



Mega urether 3



Mega urether 4



DIE of Bladder
(75/627 :12% of patients with DIE)

- 75 patients with DIE of the bladder
- Symptoms
  - Pain
  - Dysuria
- Laparoscopic partial cystectomy or complete nodule excision
- Follow up 59.9 +-44.6 months

  No reccurence

  No pain

Chapron et al Human Reprod 2010

Quality of life after DIE resection

Retrospective study of 132 patients

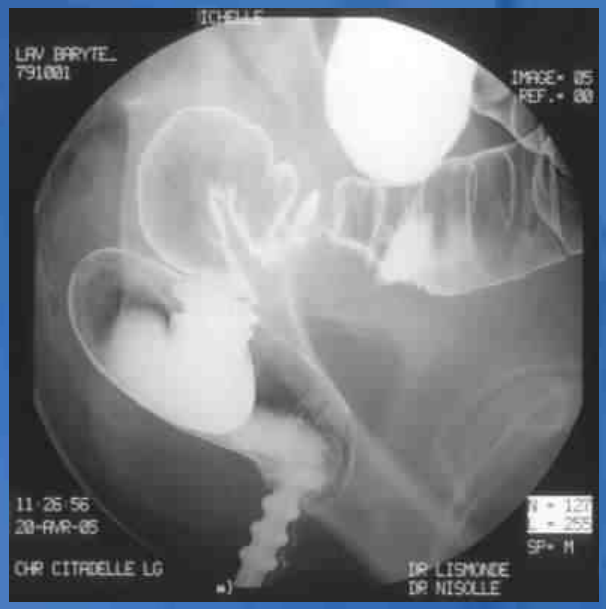
USL : 78 (59%)

Vagina : 25 (19%)

Bladder : 13 (10%)

Intestine : 16 (12%)

Complete surgical excision of DIE results in a statistically reduction in painful functional symptoms



Chopin et al J Min Invasive Gynecol 2005; 12: 106-12

Endometriozis ilişkili ağrının azaltılması için konservatif cerrahiye ek olarak laparoskopik uterosakral sinir ablasyonunun etkin olmadığını gösteren yüksek kalite kanıt vardır ve kılavuz hazırlama kurulu endometriozise bağlı ağrı tedavisi için LUNA yapılmamasını kuvvetle tavsiye eder.

Presakral nörektominin endometriozis ile ilişkili orta hat ağrılarının azaltılmasında etkin olduğunu gösteren yüksek kalite kanıt vardır, ancak bu uygulama ileri cerrahi deneyim gerektirir ve komplikasyon oranı yüksektir bu nedenle kılavuz hazırlama kurulu endometriozise bağlı ağrı tedavisi için presakral nörektomi yapılması yönünde zayıf tavsiyede bulunmaktadır.

Musts for succesfull surgery

- Identify the origin of complaints
- Remove all endometriotic lesions
- Remove lesions which cause pain
- Be aware of all lesions
- In infertility

  -Preserve organs

  -Restoring organs

The more you know about disease before you start surgery,the easier surgery will be

Conclusion 1

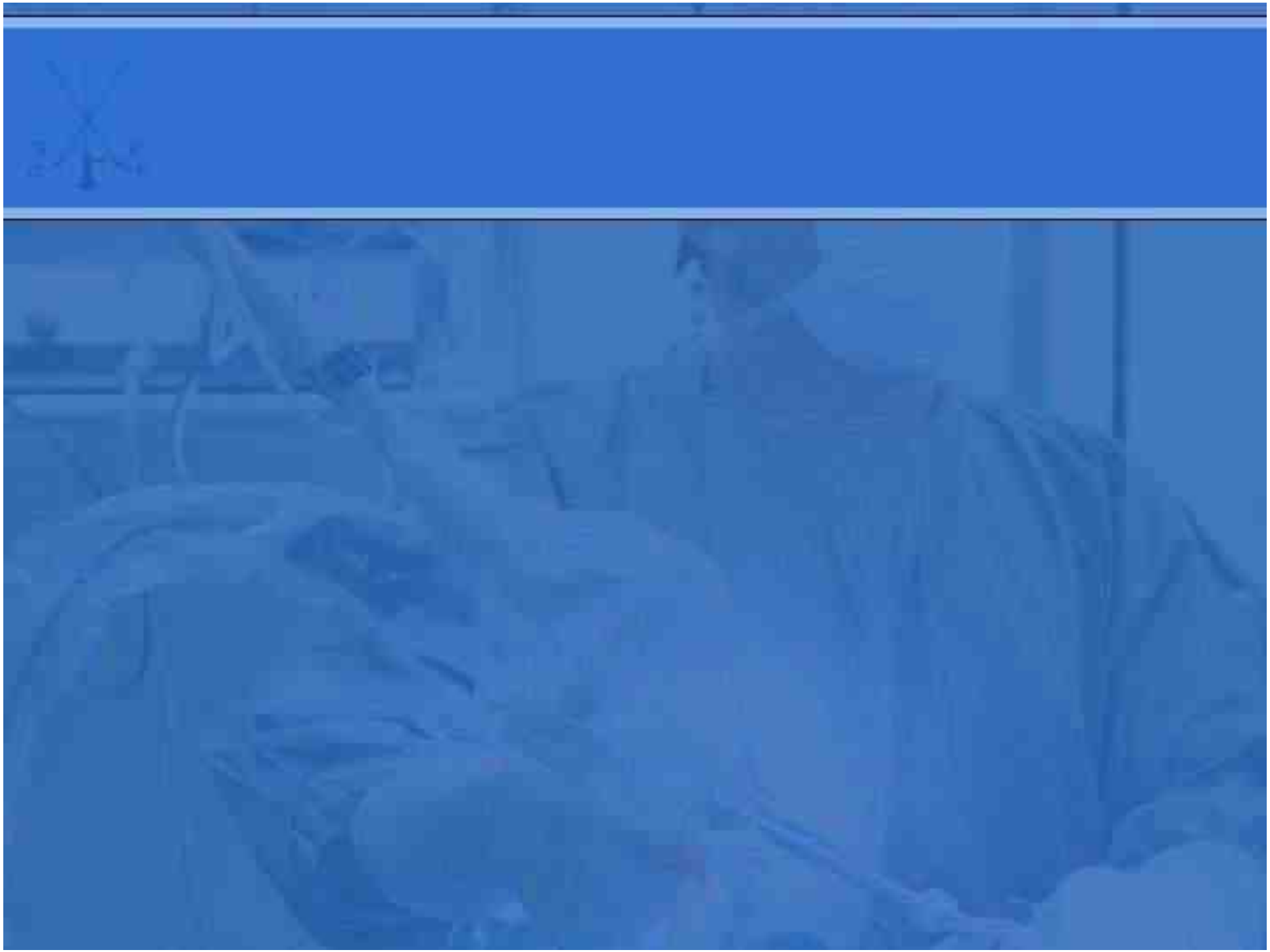
- İf medical treatment failed or if there is an indication for the surgery,remove all endometriotic lesions which cause pain
- The more you know about disease before you start surgery,the easier surgery will be
- Medical treatment can be used after surgery to prevent recurrence of the endometriosis

Conclusion 2

- DIE is a multifocal pathology and generaly associted with the other type of the endometriosis (endometriomas) , why before the surgery a precise map of the lesions is mandatory by a complet pre-op work-up.

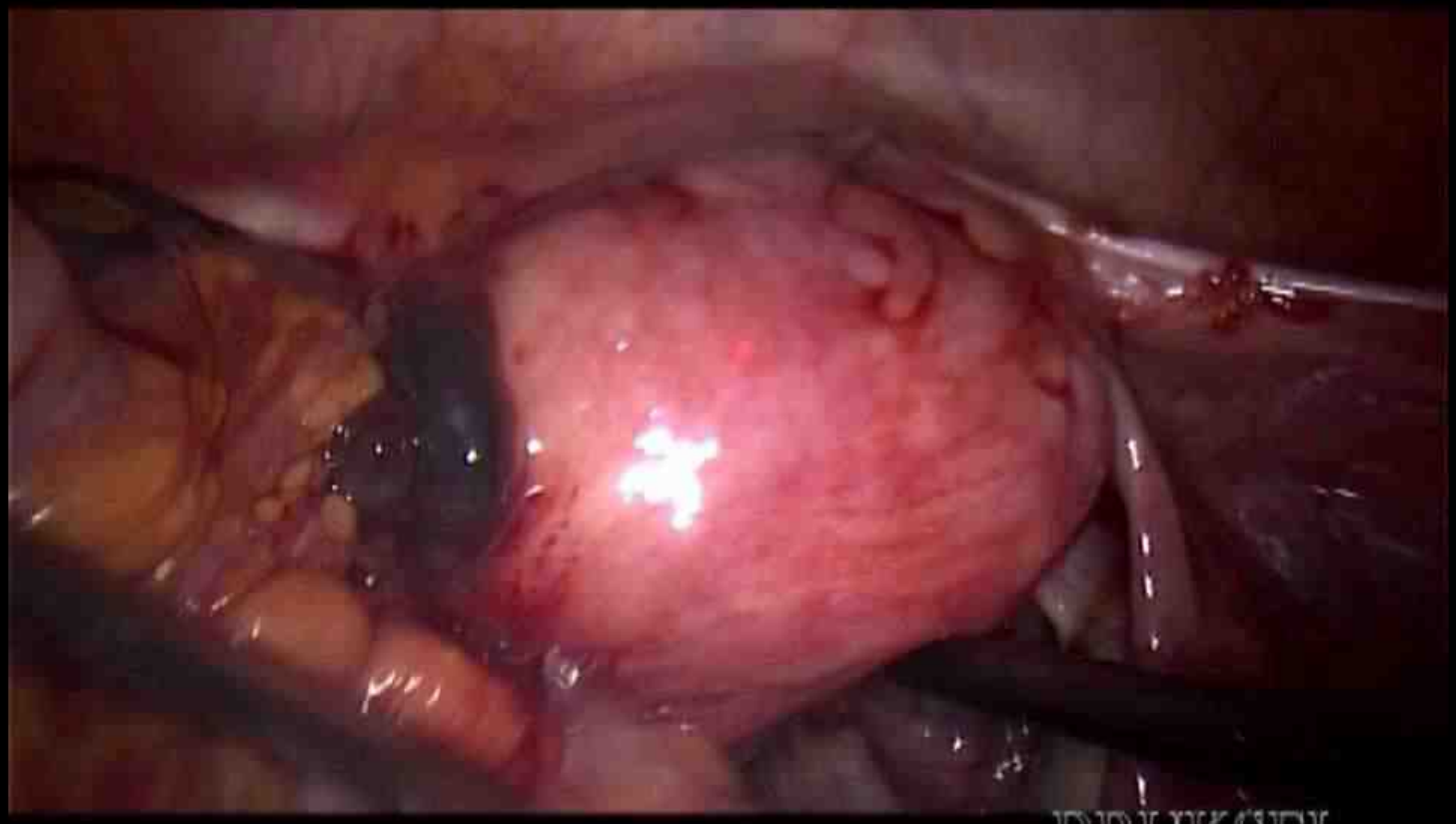
- Conservative surgery is needed for DIE .After surgery,succes of the treatment will depend on how radical and complet excision was done.

- The treatment of choice for the rectosigmoid lesions is surgical shaving or discoid excision,while bowel resection should be avoided except for the sever sigmoid endometriotic lesions.

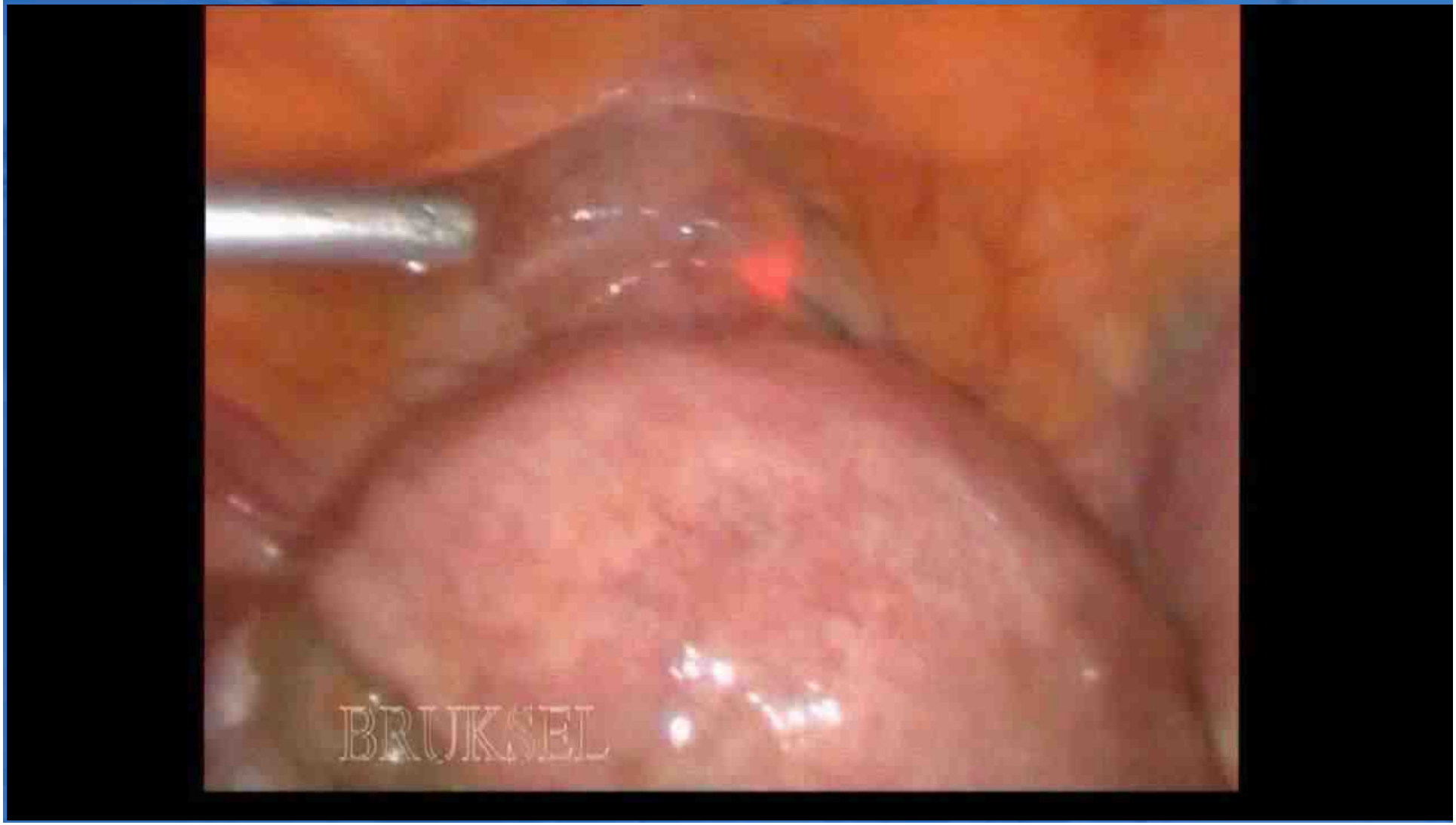


Management of Abnormal Anatomy

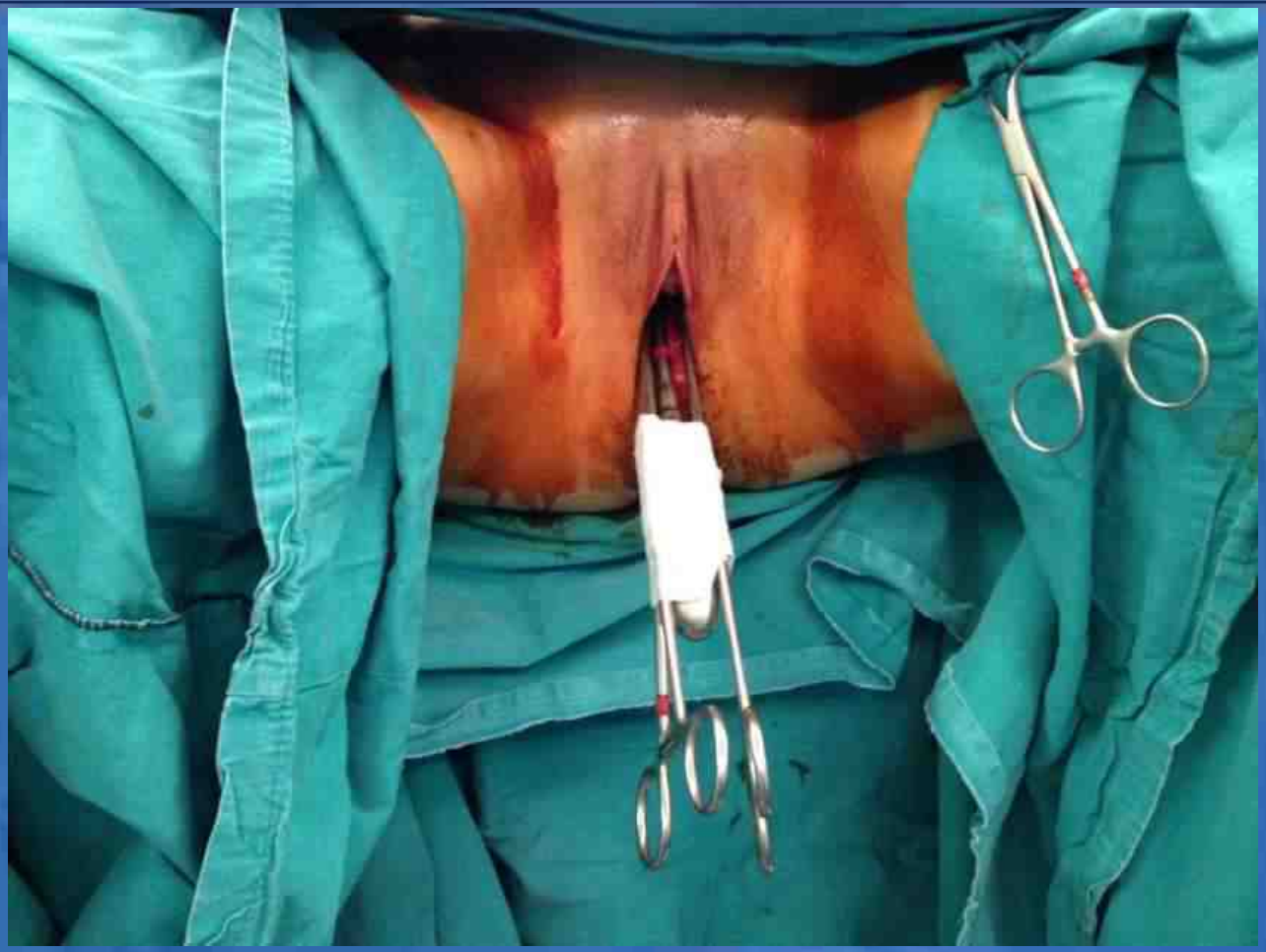
Dens Sigmoido-uterine Adhesions



LTH and Douglas Obliteration

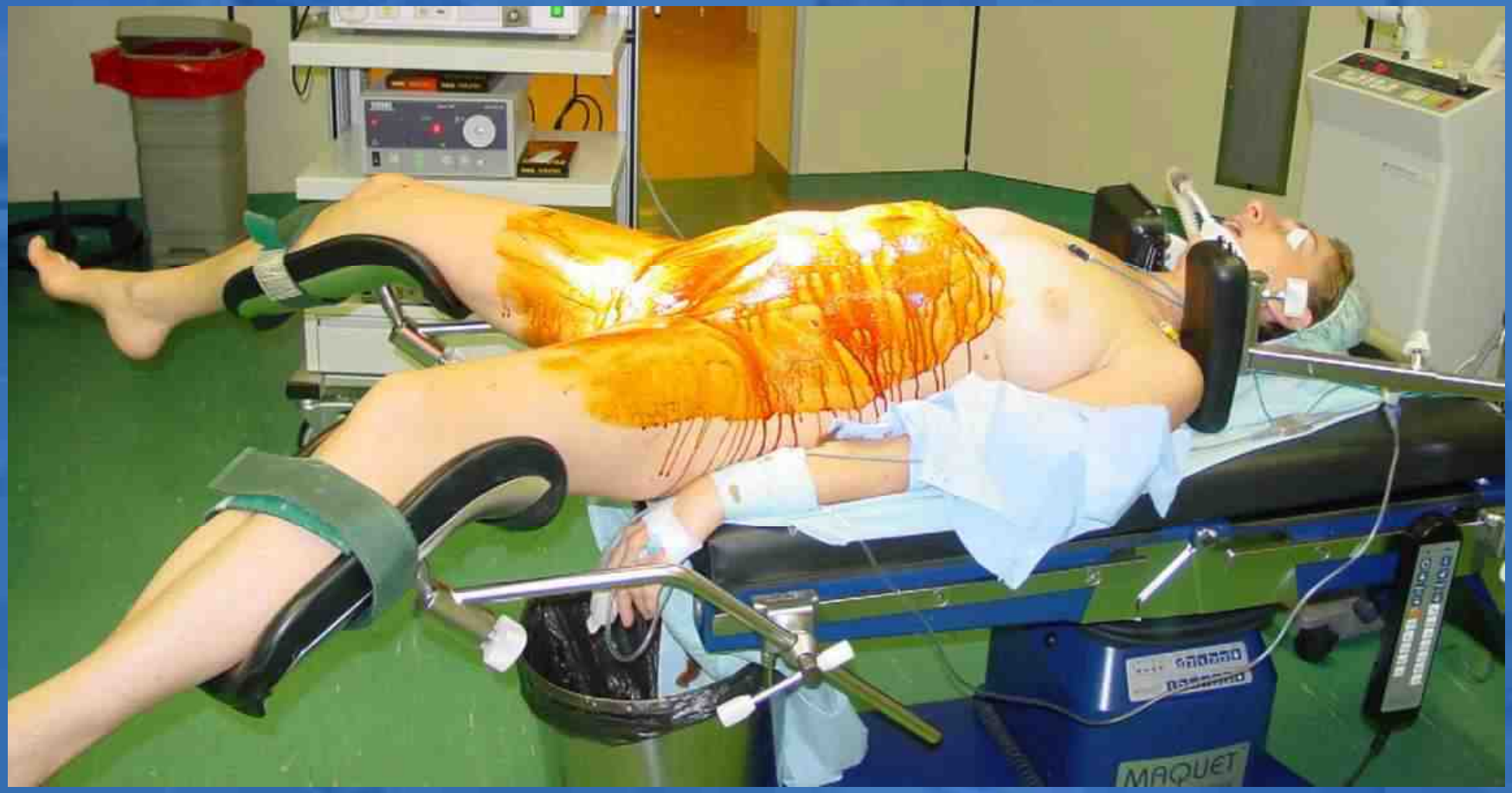


Adequate uterine manipulation

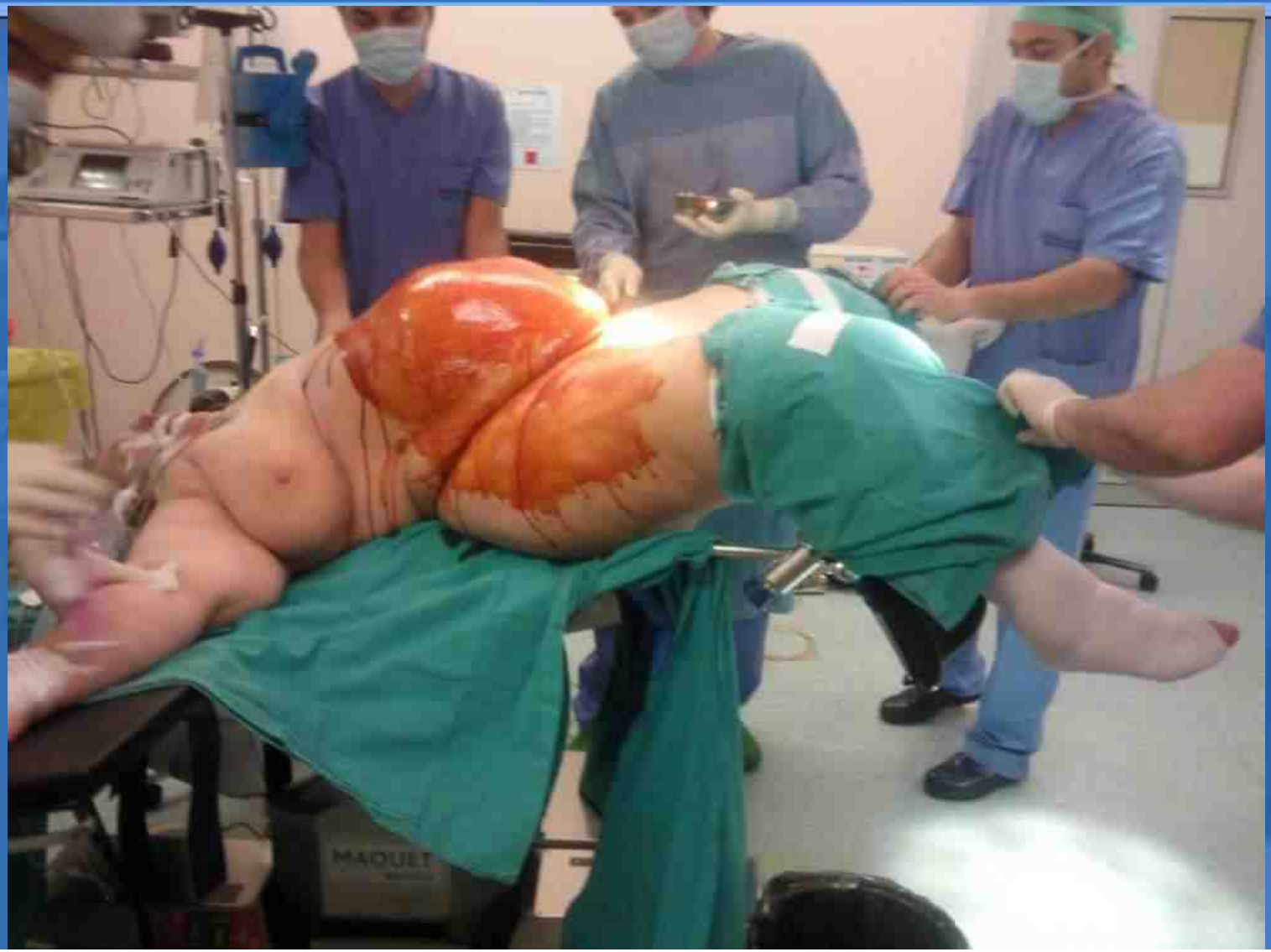


Adequate operation table and equipements

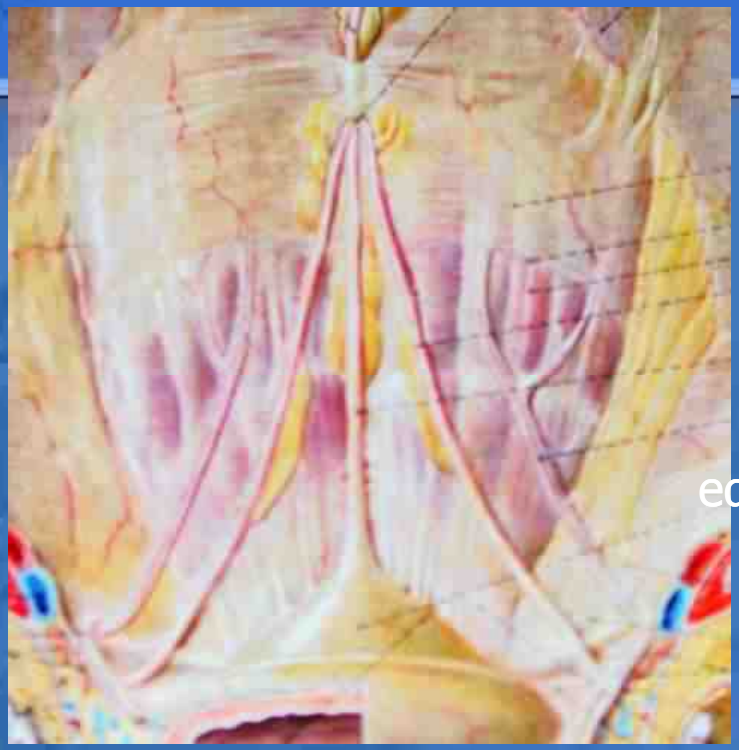
Adequate position

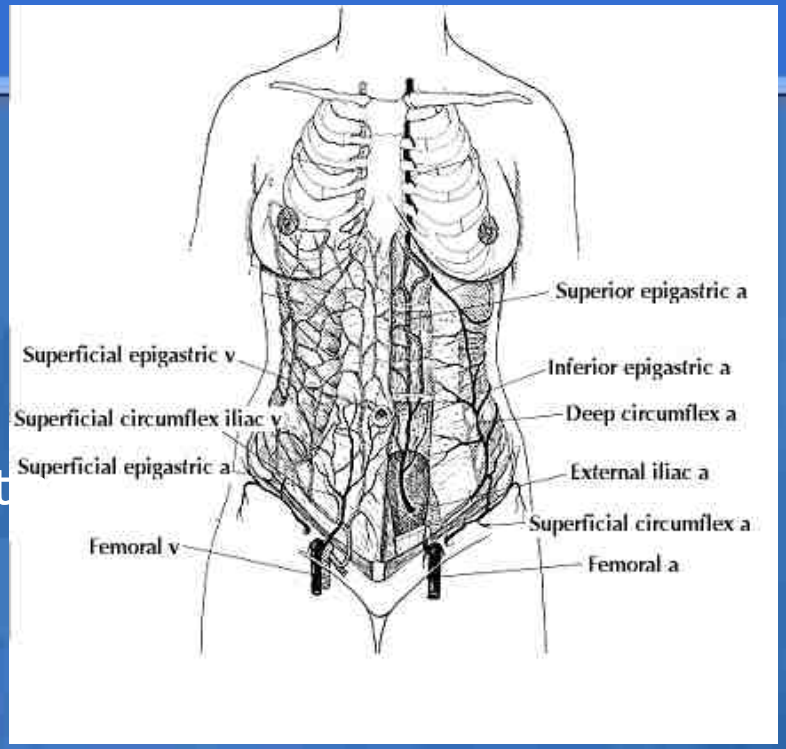


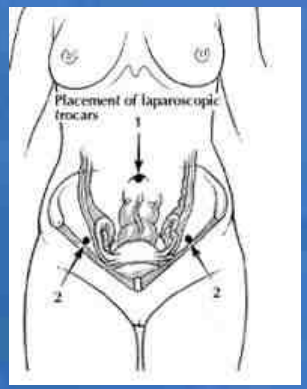
Adequate position



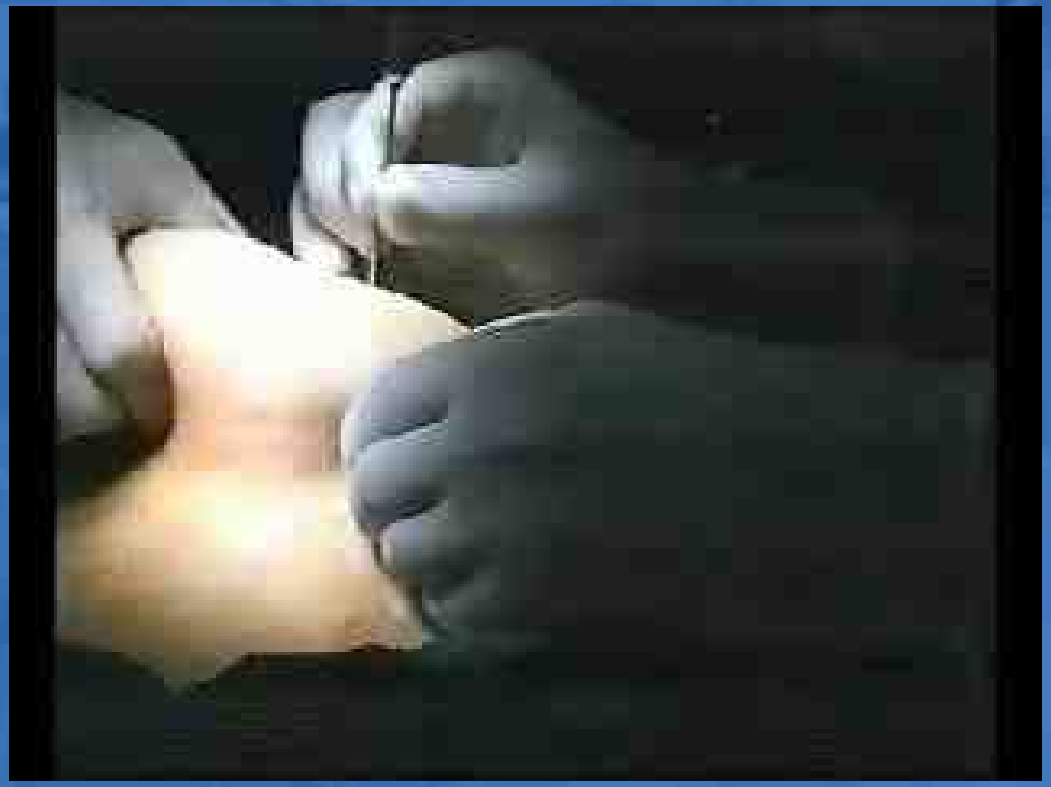
Abdominal wall

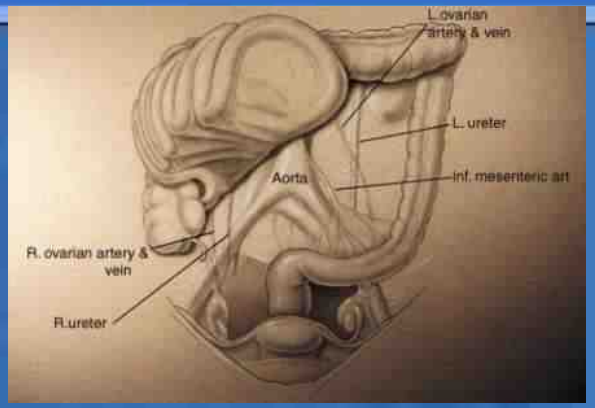




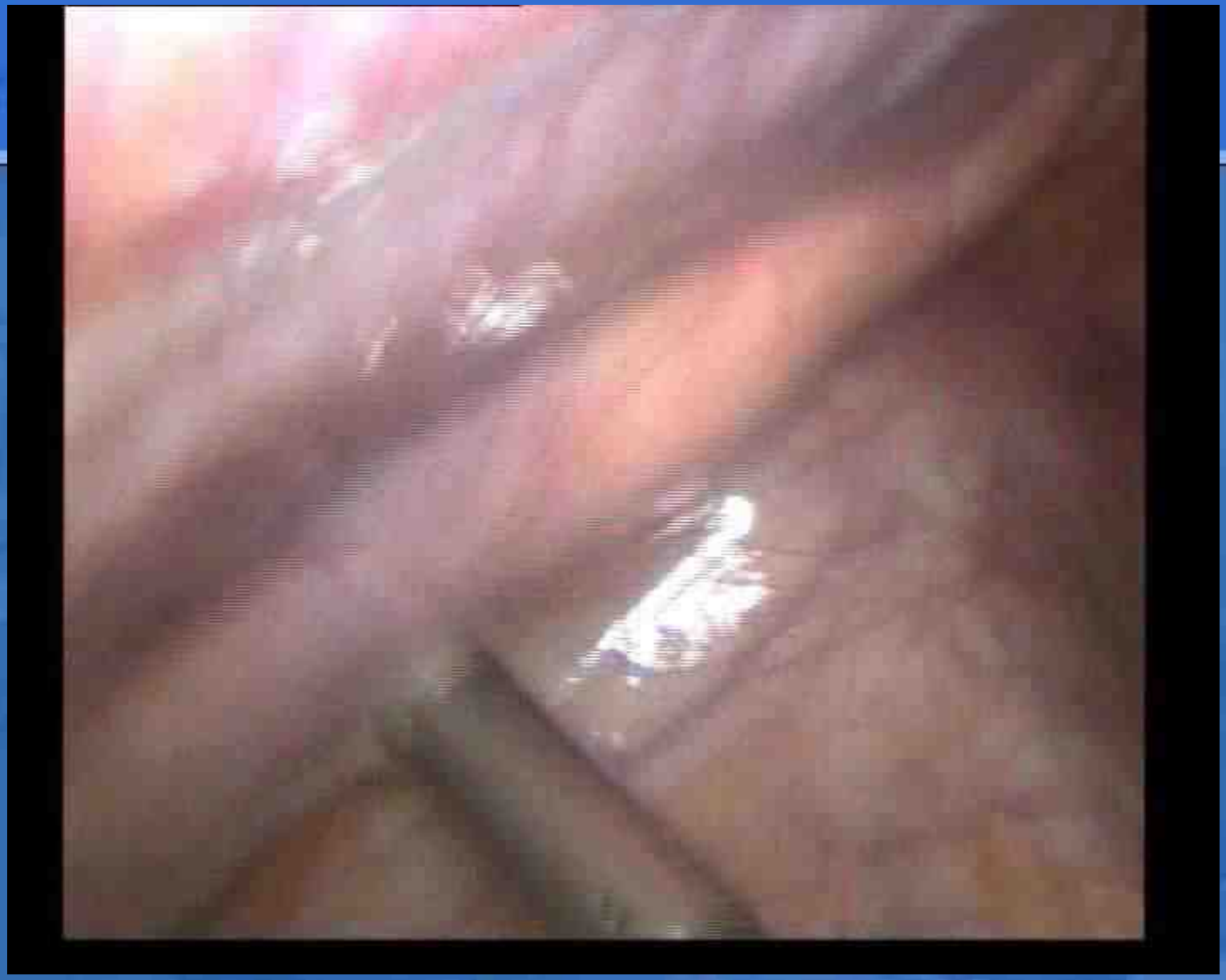


Abdomino-pelvik anatomi



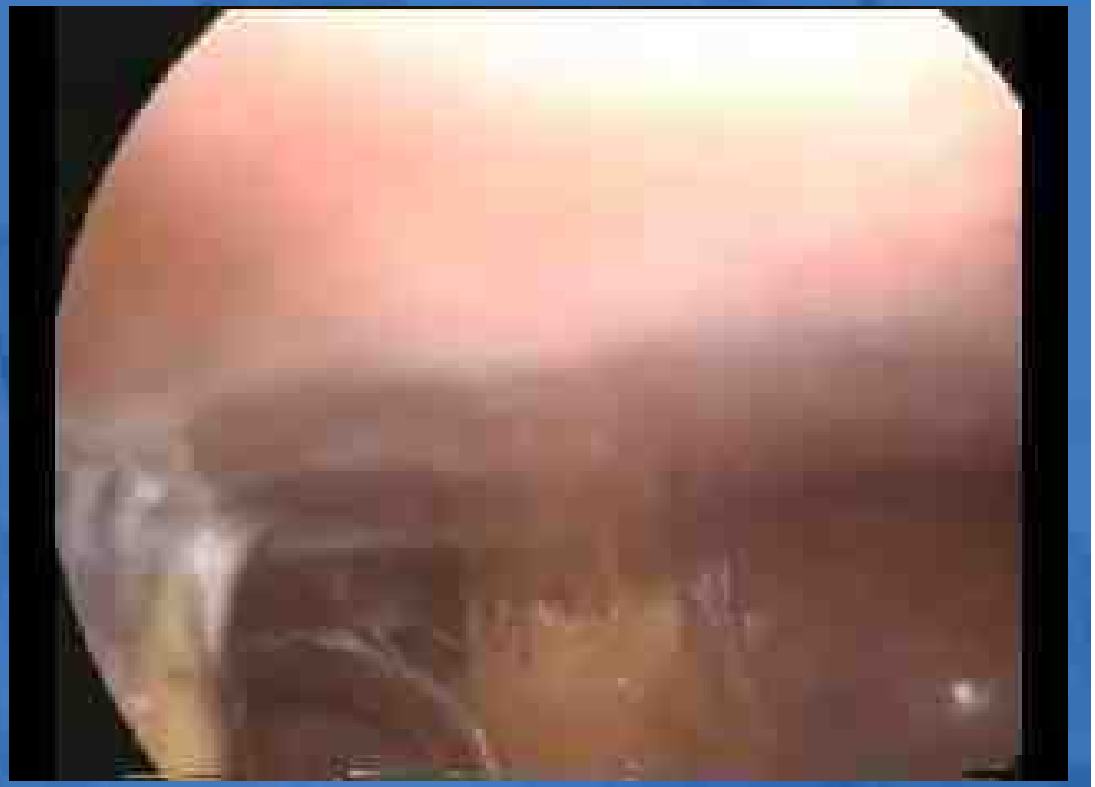


- Batın ön duvar
- Pelvis
- Abdomen
- Barsaklar, omentum, yapışıklıklar
- Trokar girişi için uygun bölge
- Operasyon için strateji



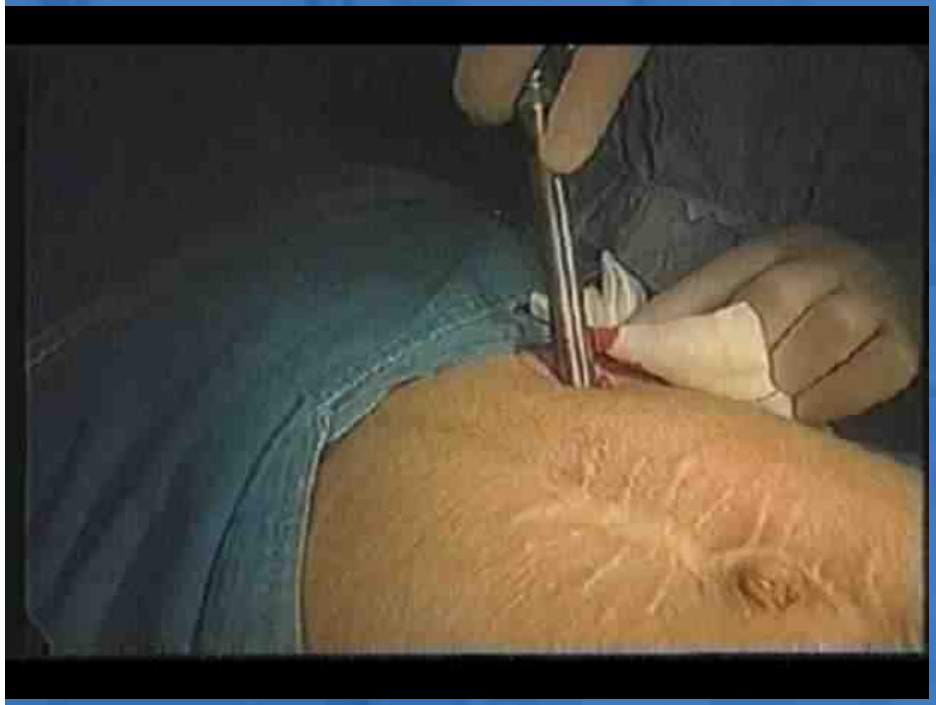
Previous Surgery

- Open laparoscopy
- Palmer Point's entry
- Adhesyolysis



Special Situation

Previous surgery-Palmer point

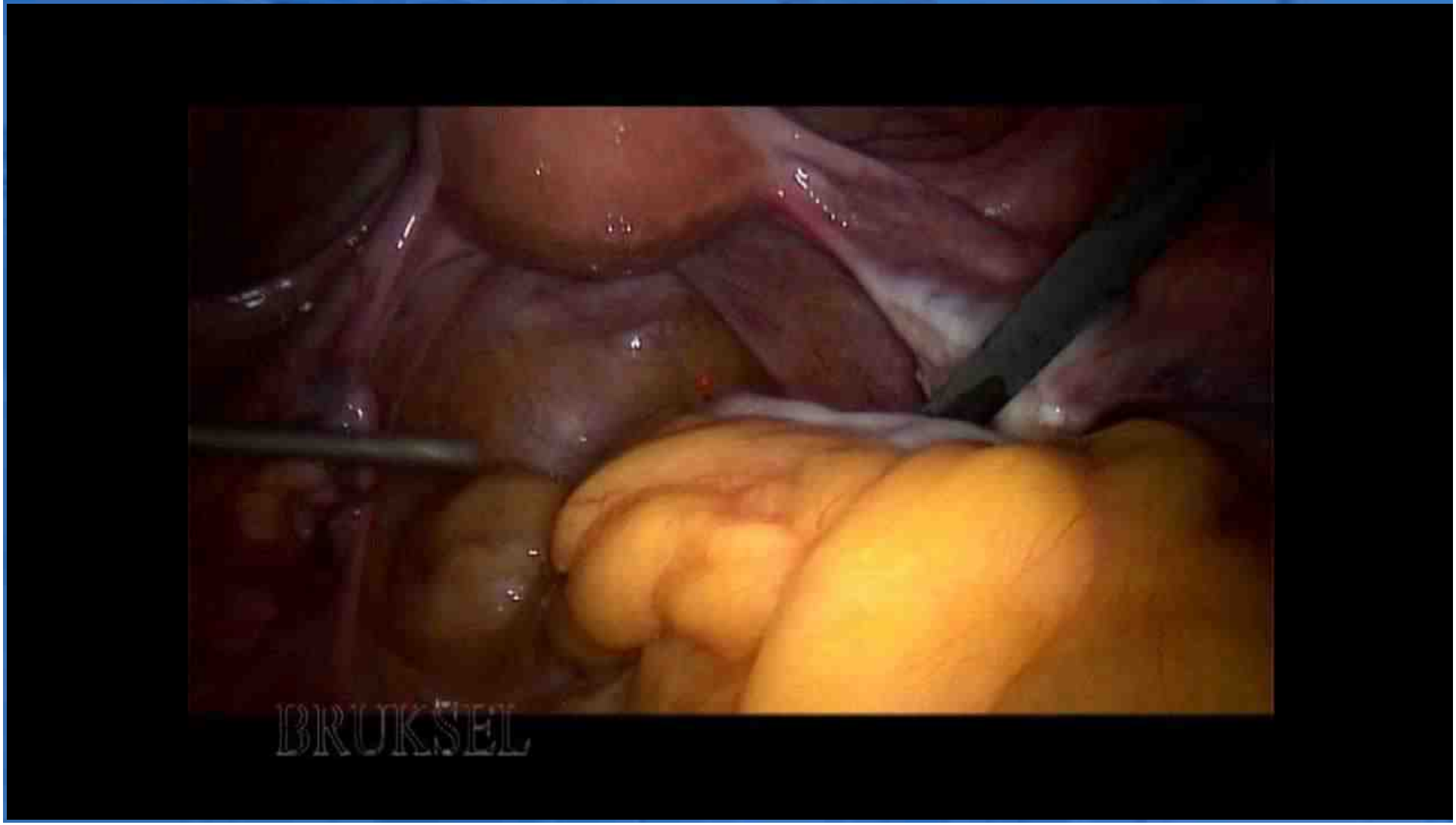


Frozen pelvis

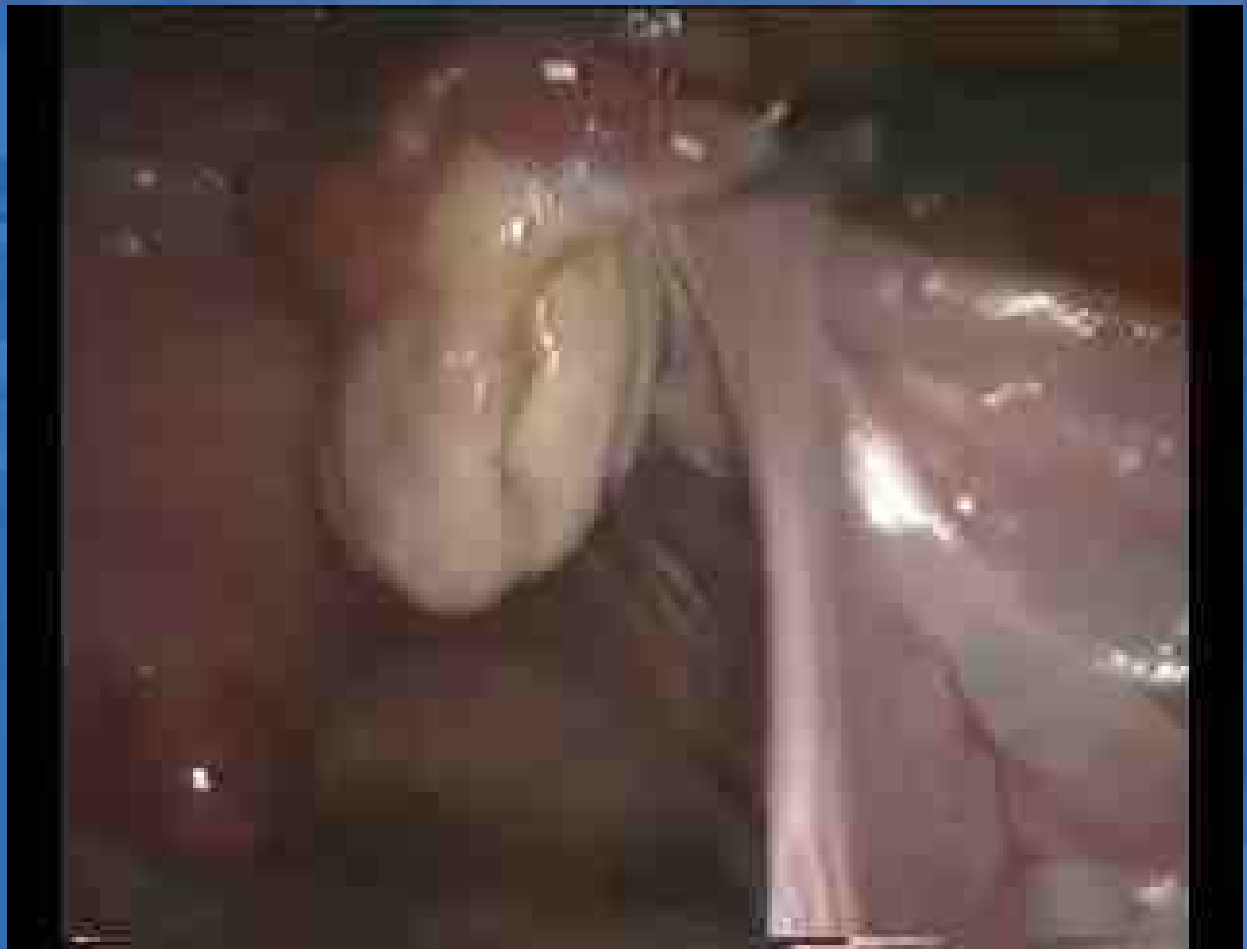
Rhedsus-Prevesicale Space-Cooper ligament

BURCH OPERATION

Laparoscopic Total Hysterecyomy and Anatomic Landmarks

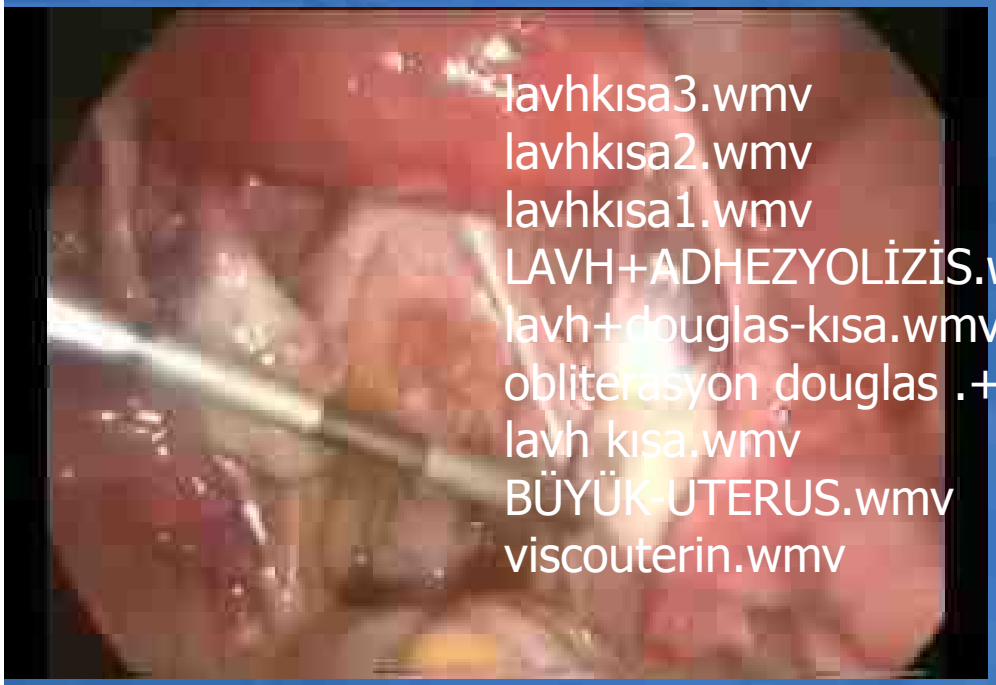


İnfundibulopelvik, broad ligament ve uterin arter



Anterior ve posterior kolpotomi

Ureter komplikasyonları



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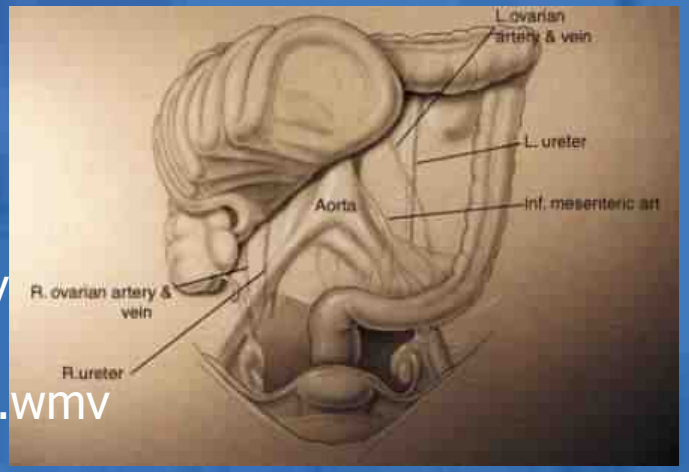
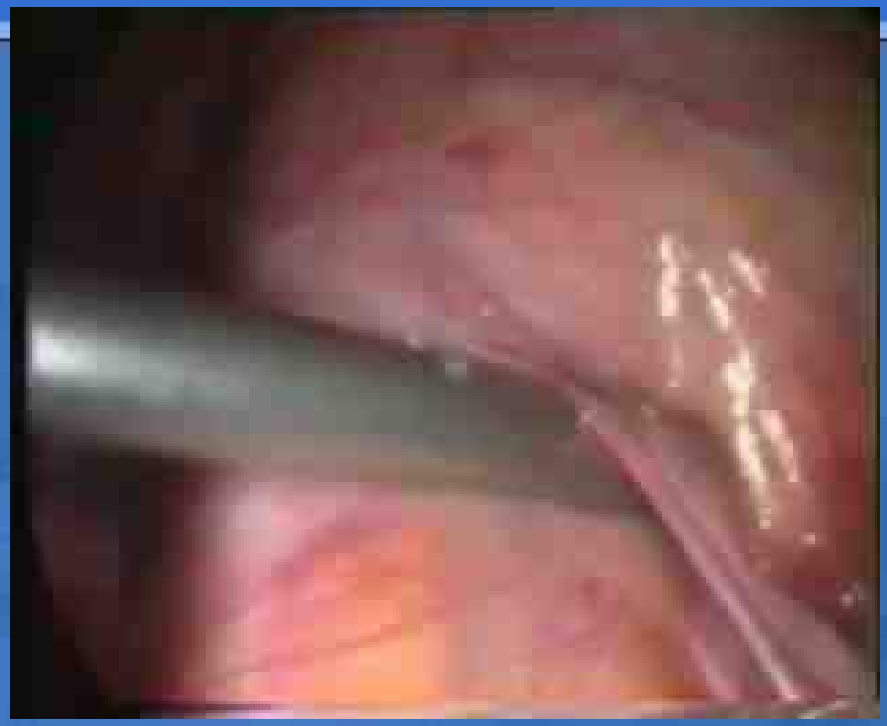


Table III. Patients in whom ureteral occlusion was detected by intra-operative cystoscopy

Surgical injury	Uterine weight (g)	Endometriosis
Left ureter occlusion	145	Present
Right ureter occlusion	900	Present
Left ureter occlusion	351	Present
Right ureter occlusion	830	Present

Gastro-intestinal yaralanmalar

- Laparoskopiye bağlı tüm komplikasyonların **% 20 – 46**'ını oluşturur.



Peterson et al. J Reprod Med 1990

Chapron et al. Hum Reprod 1998

Table VI. Prevalence of gastrointestinal injuries

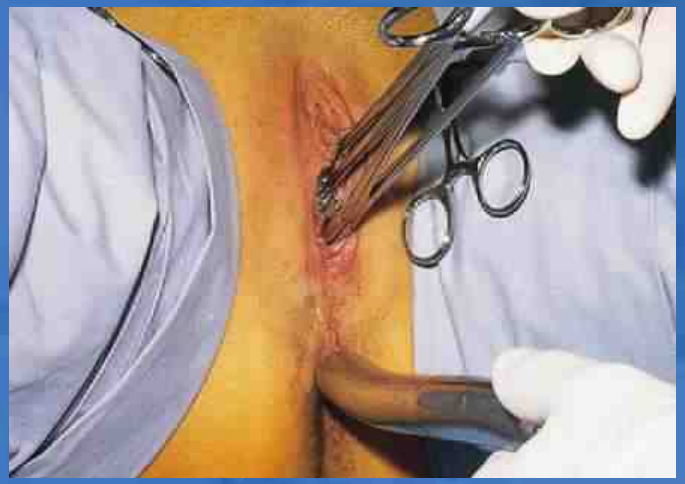
Reference	Laparoscopy	Operative laparoscopy		Gastrointestinal injuries during laparoscopy	
	n	*n*	%	*n*	per thousand
Härkki-Sirén and Kurki (1997)	70 607	11 427	16.2	44	0.62
Jansen *et al.* (1997)	25 764	3 967	15.4	29	1.13
Chapron *et al.* (1998)	29 966	18 061	60.3	48	1.60

Önlemler

- Barsak hazırlığı
- Mide distansiyonu (NGT)
- Ensüflasyon (sol hipokondrium –Palmer noktası)
- Open laparoskopi ?
- Enstrumanlar (monopolar)
- Enspeksiyonu (abdomino-pelvik)
- Trokarların gözlem altında girilmesi (translümimasyon)
- Operasyon sonunda ayrıntılı enspeksiyon
- Metilen mavisi testi (transanal 200cc metilen mavisi)

Oblitere Douglas

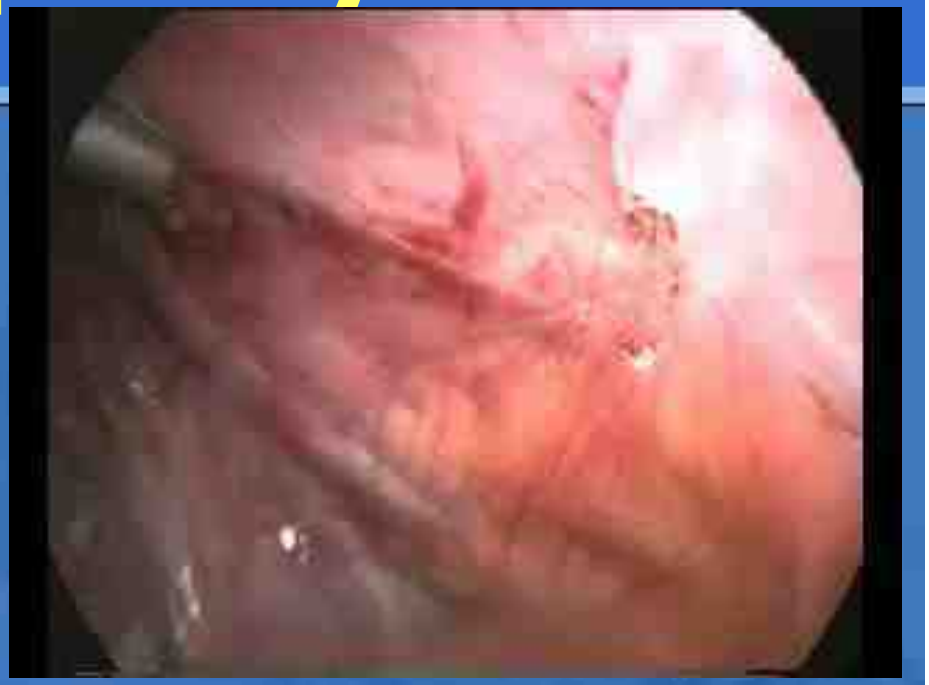
Rektum yaralanmasına dikkat !!



GI sistem komplikasyonları

Table III. Circumstances under which gastrointestinal injuries occurred

Occurrence	*n*	%
Setting-up	18	32.1
Pneumoperitoneum needle	6	10.7
Umbilical trocar	9	16.1
Suprapubic trocar	3	5.3
Operative procedure	32	57.2
Electrosurgery	6	10.7
Sharp dissection	26	46.5
Unknown	6	10.7
Total	56	100.0



- 56 hasta, toplam 62 komplikasyon
- 37 hastada (% 66) geçirilmiş operasyon
- Apendektomi (n:8), Pfannenstiel (n=16), Mid-line (n:9), Laparoskopi (n:4)

French Society of Gynecologic Endoscopy (case review study)

Chapron et al.

Gastrointestinal injuries during gynaecological laparoscopy. Hum Reprod 14: 333-337;1999

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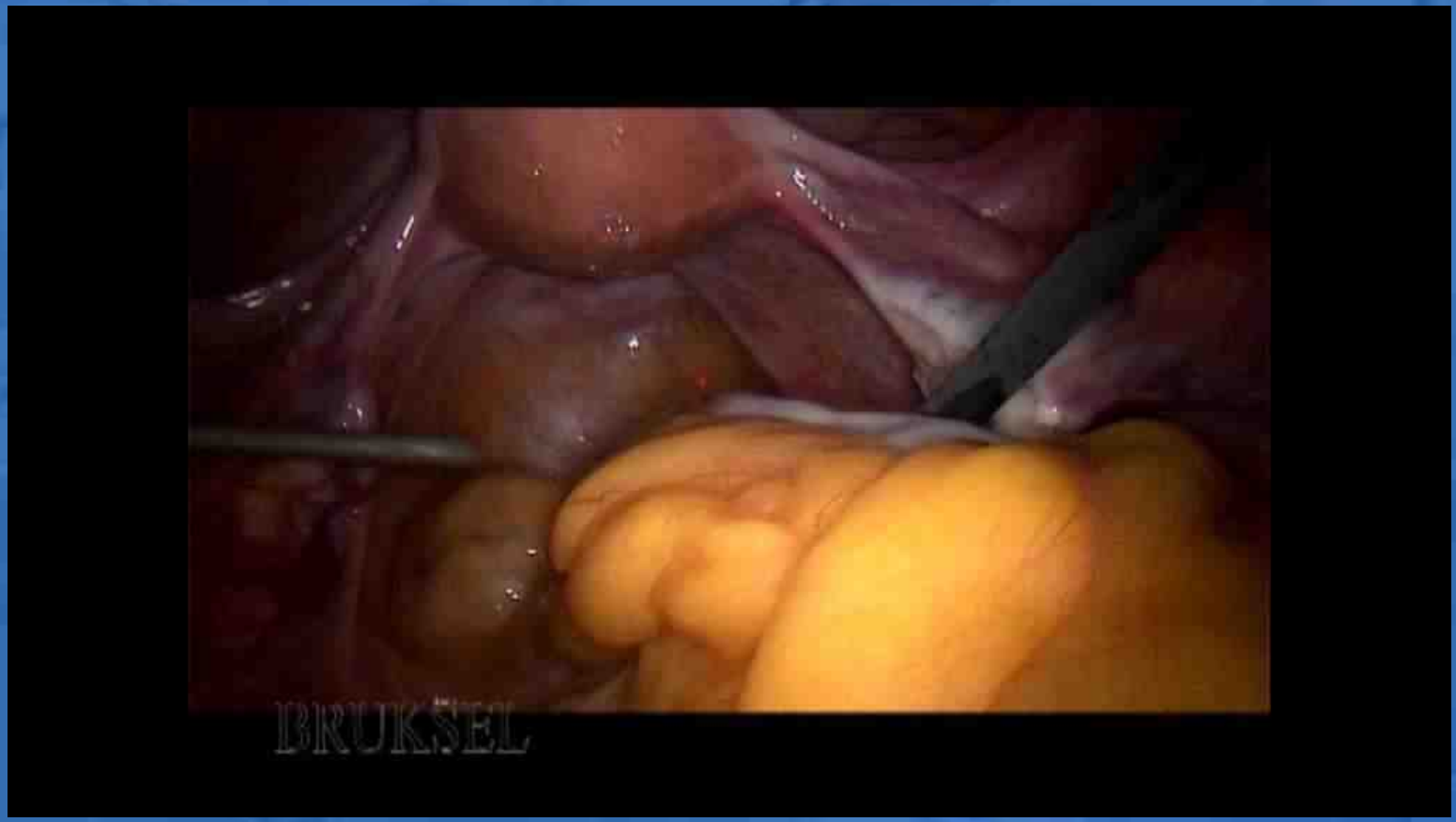


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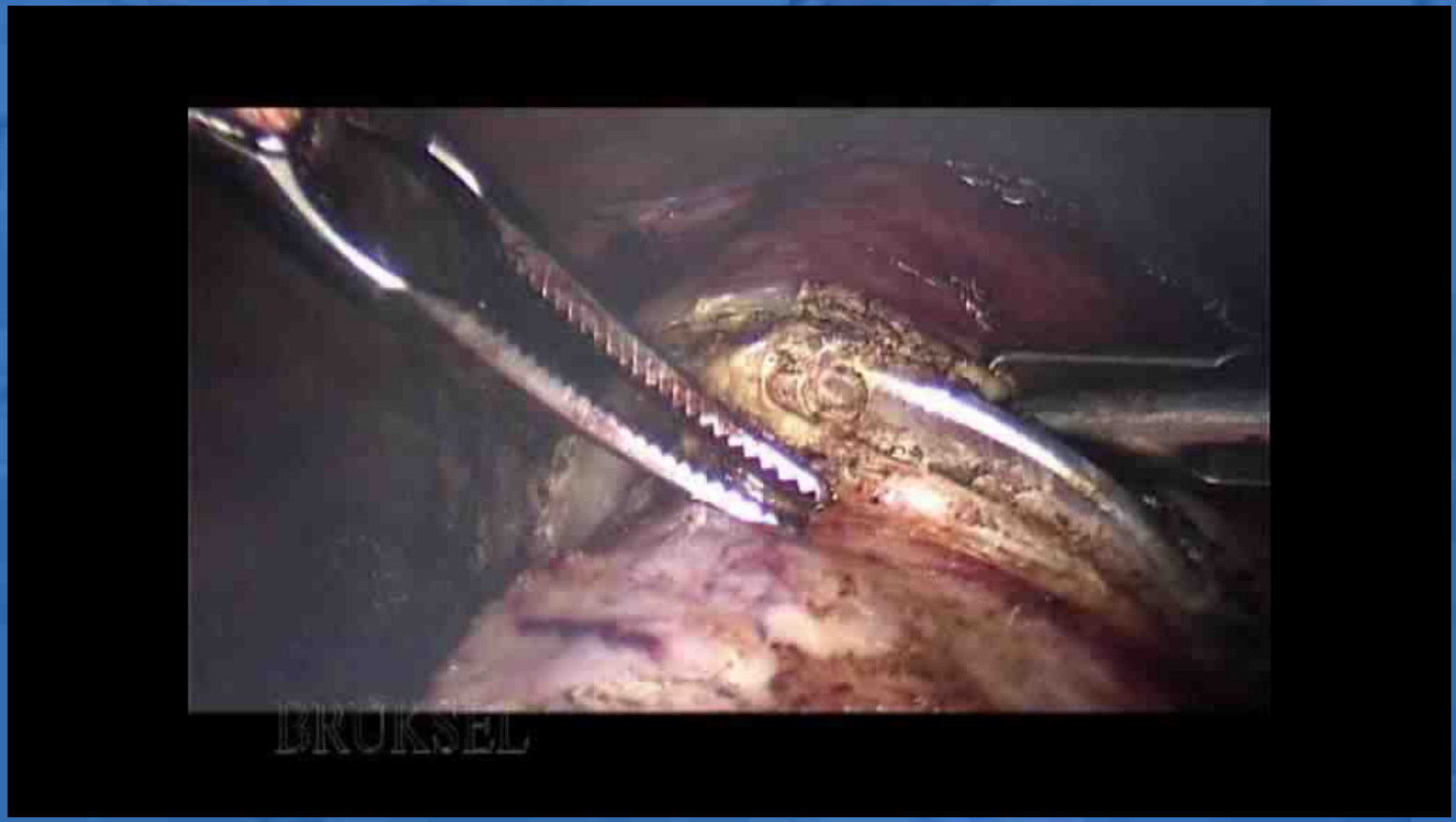
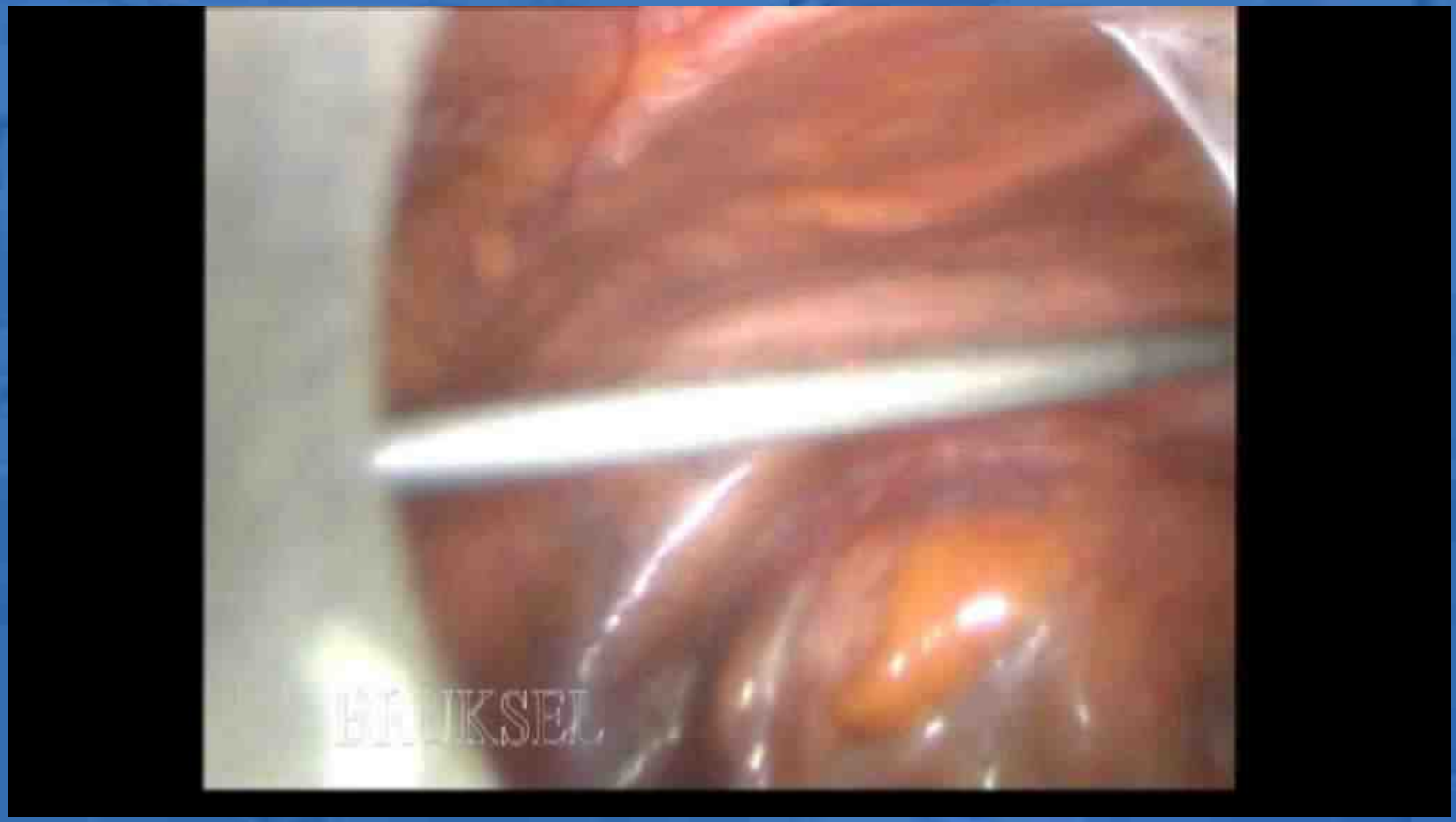
LTH Vaginal Suturing



Pelvic Adhesions



Vesico-uterine dens adhesions