



# The value of surgery for endometriosis?

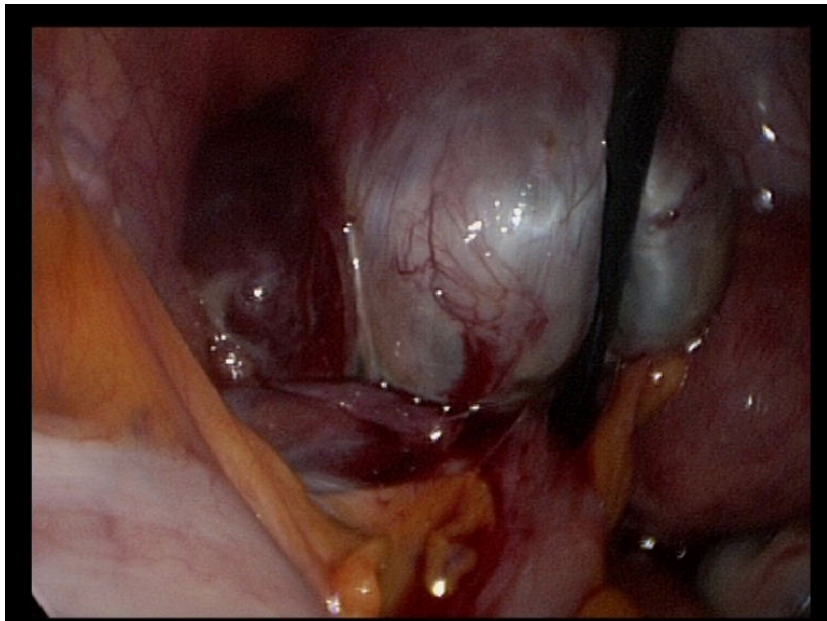
**Stephan Gordts MD**

*ESHRE Campus  
Dubrovnik, 24-25 September 2010*

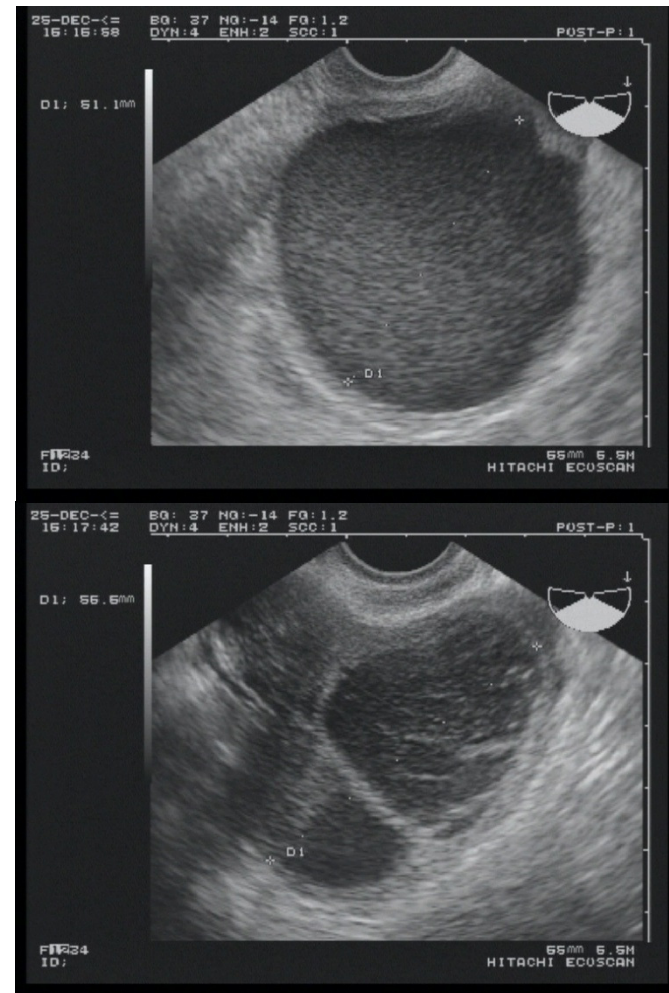


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# ENDOMETRIOSIS



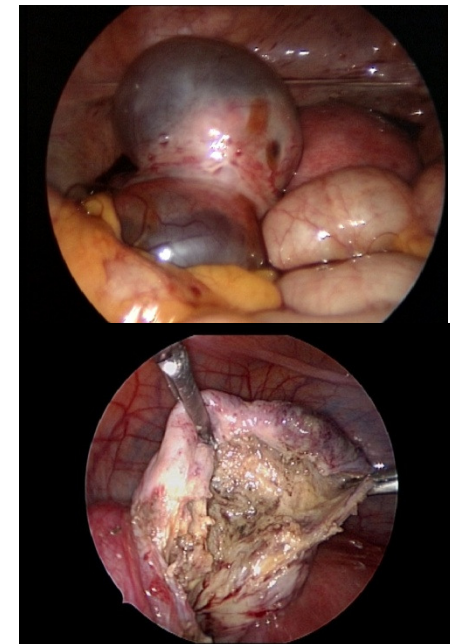
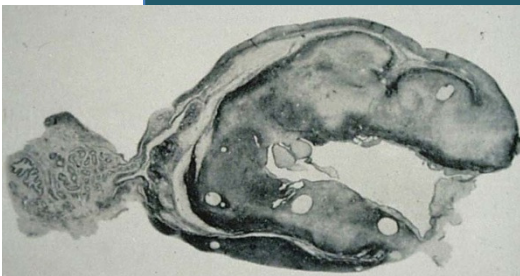
Peritoneal implants ?  
Adhesions?



# IS ENDOMETRIOSIS A SURGICAL DISEASE?

## Concerns:

- Pleiotropic disorder
- Recurrence rate
- Ovarian reserve



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## RECONSTRUCTIVE OVARIAN SURGERY IN ENDOMETRIOSIS

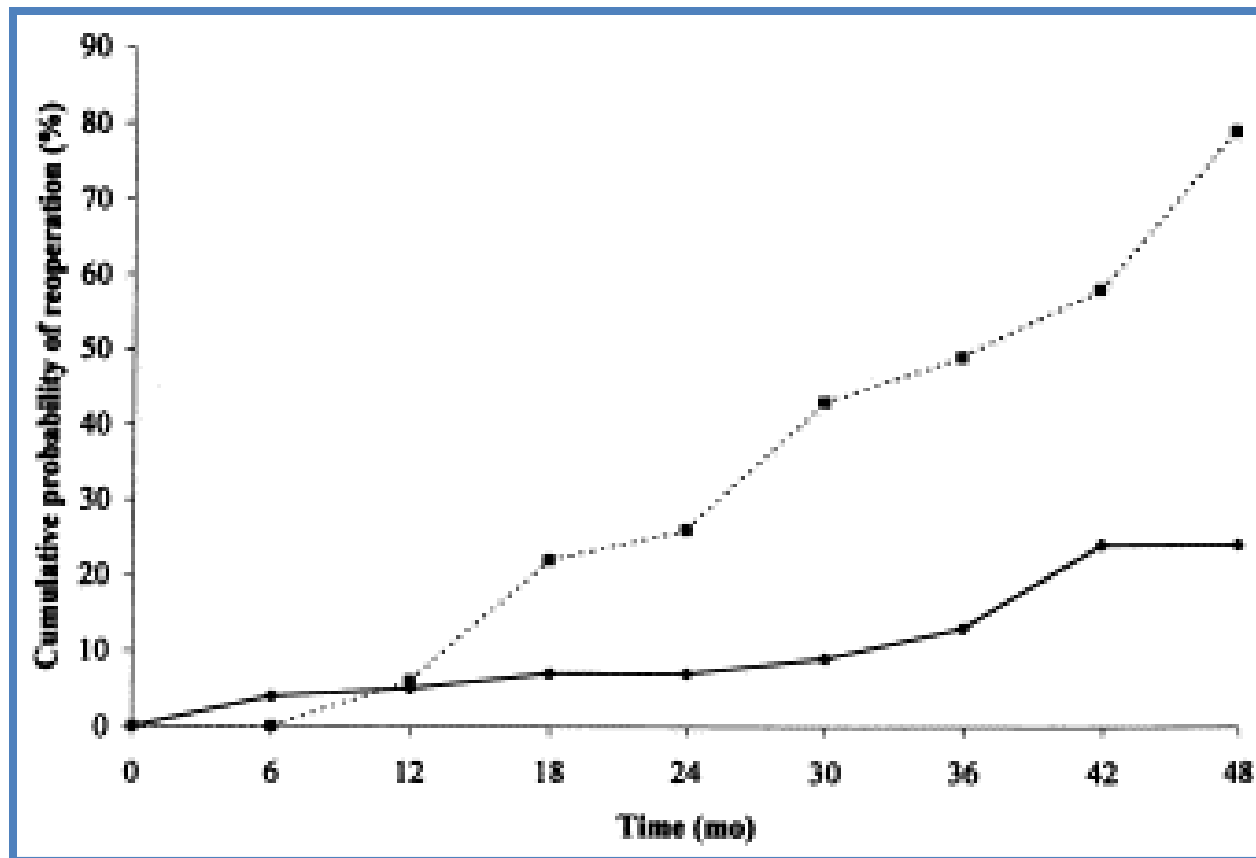
		Ablation	Excision
		recurrence rates	
Hemmings	1998	8% (36)	12% (23)
Saleh	1999	21.9% (70)	6.1% (161)
Beretta	1998	18.8% (32)	6.2% (32)
Fayez	1991	33% (30)	29% (66)



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Cumulative probability of reoperation after laparoscopic treatment of ovarian endometriomas by excision (solid line) and by fenestration (broken line). Time 0 = the day of the initial laparoscopic procedure.



# TECHNIQUES FOR RECONSTRUCTIVE OVARIAN SURGERY IN ENDOMETRIOSIS

## Everson versus Excision

**Excision:** higher incidence adhesion formation  
lower recurrence rate  
Reduced ovarian volume and ovarian  
reserve

*(El-Shawi, 1998; Al-Azemi, 2000; Nargund 1995; Loh, 1999)*

**Everson:** 2 step technique if >5 cm



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# TECHNIQUES FOR RECONSTRUCTIVE OVARIAN SURGERY IN ENDOMETRIOSIS

## Residual ovarian volume after surgery

### Endometriosis

5,1 ± 3.2\*

### Dermoid

6.7 ± 3.3\*

Treated

4.3±2.3\*\*

Control

9.7±3.9\*

Treated

7.1±3.5\*

Control

8.3±3.1

\*p<0.001

\*p<0.001

\*p<0.05

Exacoustos et al. Am J Obst Gynec, 2004,191



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# TECHNIQUES FOR RECONSTRUCTIVE OVARIAN SURGERY IN ENDOMETRIOSIS

## Residual ovarian volume after surgery

**Lack of correlation between residual ovarian volume and cyst diameter.....**  
**Resection of even small endometrioma**  
**significant loss of ovarian volume**

Exacoustos et al. Am J Obst Gynec, 2004,191

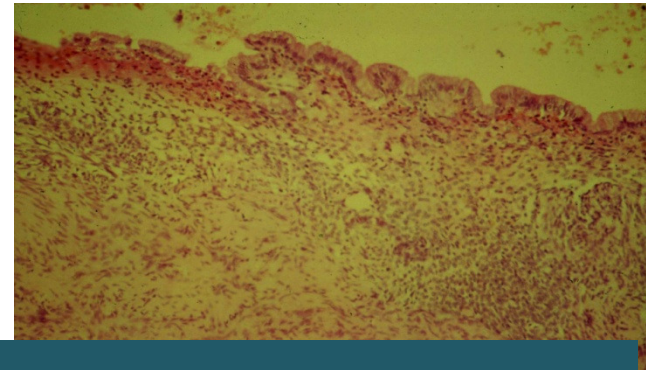


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# OVARIAN ENDOMETRIOMA



Hachsiguga et al. Hum Reprod 2002

easy removable endom. cyst:	prim. follicles	68.9% (1-25)
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Muzii et al. Fertil Steril, 2002

endometrioma:	ovarian tissue	54%* (1-2 mm thick)
other ovarian cyst:	ovarian tissue	6%*

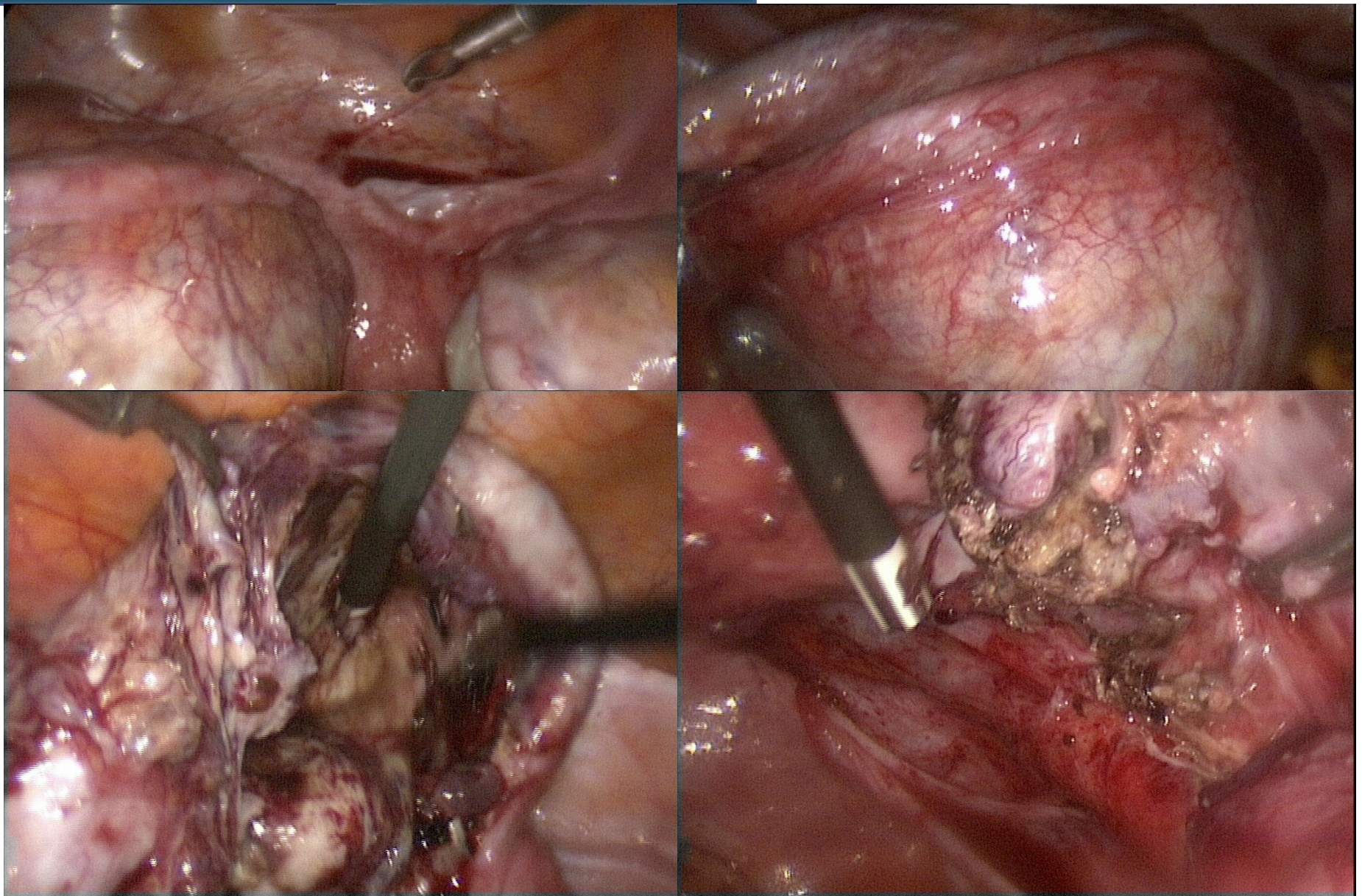
(p<0.005)

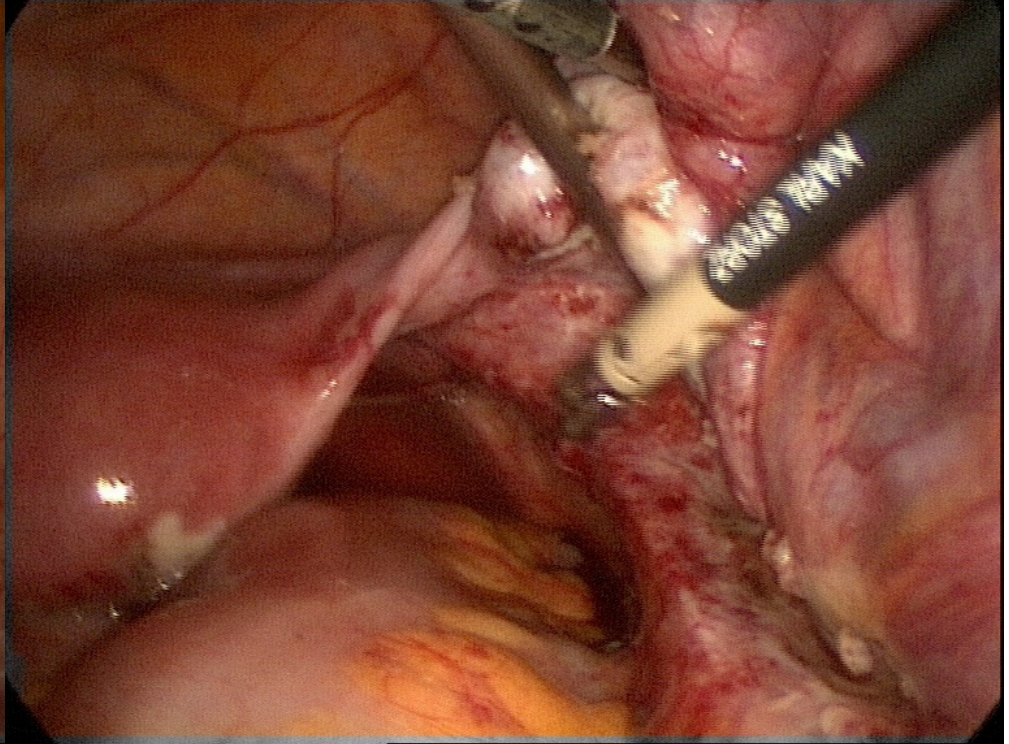
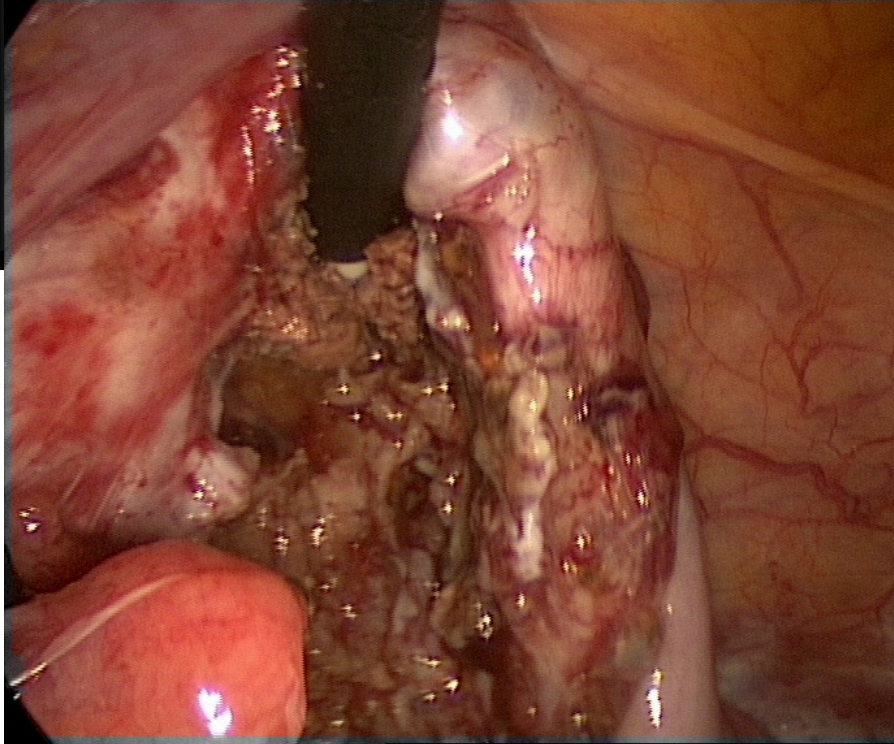
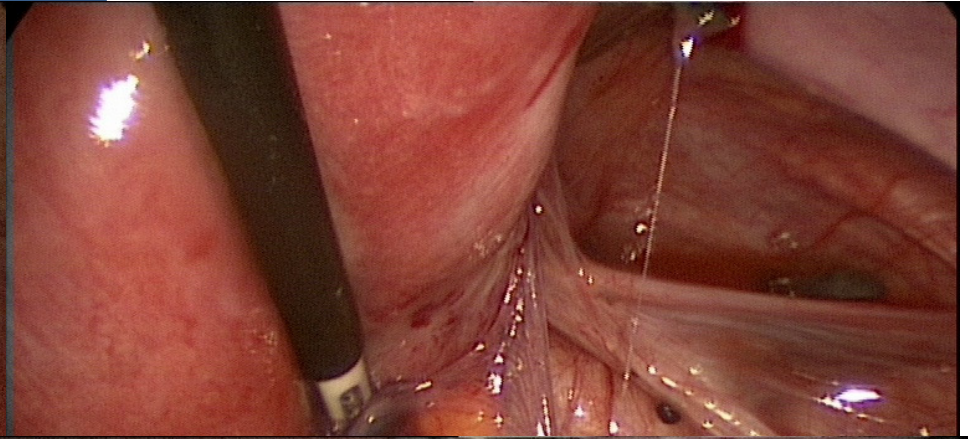
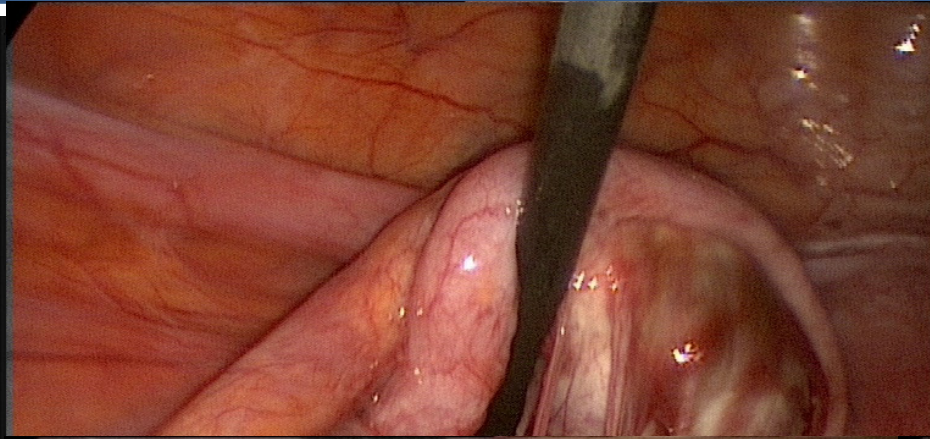
( 73% no prim follicles present *no histology of ovarian hilus*)  
(*tissue may be morphologically altered*)



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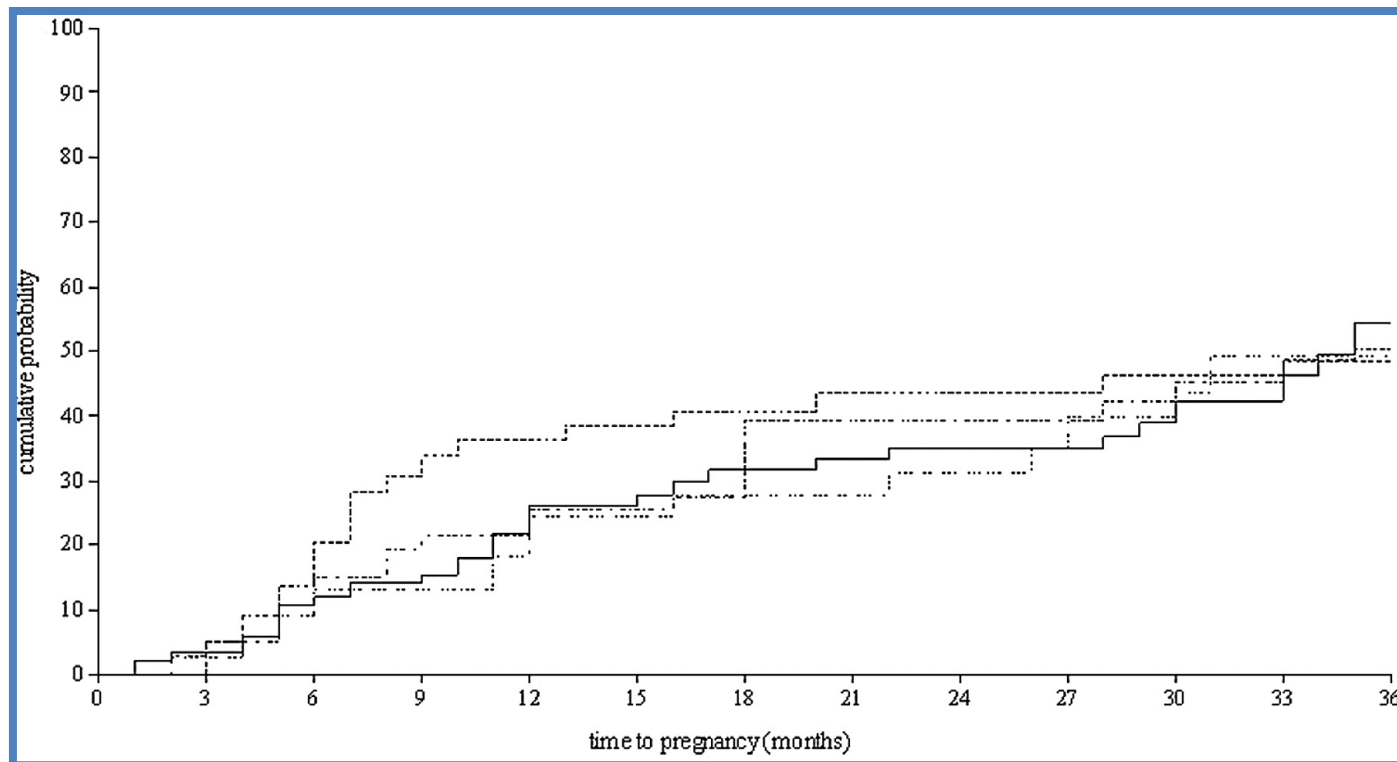


## TREATMENT ENDOMETRIOMA AND PREGNANCY

		No	% PREGN
Sprangler	1971	101	51%
Acosta	1973	107	45%
Soules	1976	58	43%
Garcia	1977	61	37%
Brosens	1977	52	54%



## Cumulative 36-month probability of becoming pregnant by disease stage in 222 infertile women who underwent conservative surgery for endometriosis and had no other infertility factor



Vercellini, P. et al. Hum. Reprod. 2006 21:2679-2685



# ENDOMETRIOSIS-Associated INFERTILITY

## Fertilization Rate in IVF

	Endo	Tubal	P
• Geber ('95)	46%	56%	<.02
• Arici ('96)	71%	70%	ns
• Hull ('98)	56%	60%	<.001
• Bergendal ('98)	60%	78%	<.001
• <u>Azem ('99)</u>	40%	70%	<.001



# ENDOMETRIOSIS-Associated INFERTILITY

## Implantation Rate in Ovum Donation

	Endo	No Endo	P
• Simon (1994)	25%	17%	ns
• Sung (1997)	12%	13%	ns
• Diaz* (2000)	15%	16%	ns

\* sibling



# Pregnancy Outcome of ART in Endometriosis

	Endometriosis	Control	P
• Simon (1994)	13%	34%	<.001
• Geber (1995)	40%	45%	NS
• Olivennes (1995)	29%	36%	NS
• Dmowski (1995)	29%	25%	NS
• Arici (1996)	14%	24%	NS
• Hull (1998)	30%	27%	NS
• Azem (1999)	11%	22%	<.001





# Stage of endometriosis and IVF outcome

*Meta-analysis*

	rAFS I-II	rAFS III-IV	
Mean Nb ooc	8.19	6.70	p<0.001
Peak E <sub>2</sub>	5813.38	1447.73	p<0.001
Fertil.%	58.38%	74.47%	p<0.001
Pregn %	21.12%	13.84%	p<0.001
Implant%	11.31%	10.23	0.003

Barnhart et al. Fertil Steril 2002, 77



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## Stage III - IV endometriosis IVF outcome

	Nb ooc	fertil%	pregn%/ET
Barnhart (2002)	6.70	74.47	13.84
Olivennes (1995)	7.1	66.26	50.0
Azem (1999)	7.14	40	10.6
Oehninger (1988)	3.7	90	28.4
Aboulghar 2003)			15.3%
Tummon (1991)	3.82		13-14%



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# Pregnancy Outcome of ART in Endometriosis

	Endometrioma rAFS IV <i>previous surgery</i>	Control
<i>Cancellation rate</i>	29.7 %	1 %
<i>Clinical pregn/cycle</i>	15.3 %	52.5 %

Aboulghar et al. 2003, Am J Obst Gyn.



## Cumulative life birth rate

*Tummon et al. 1991*

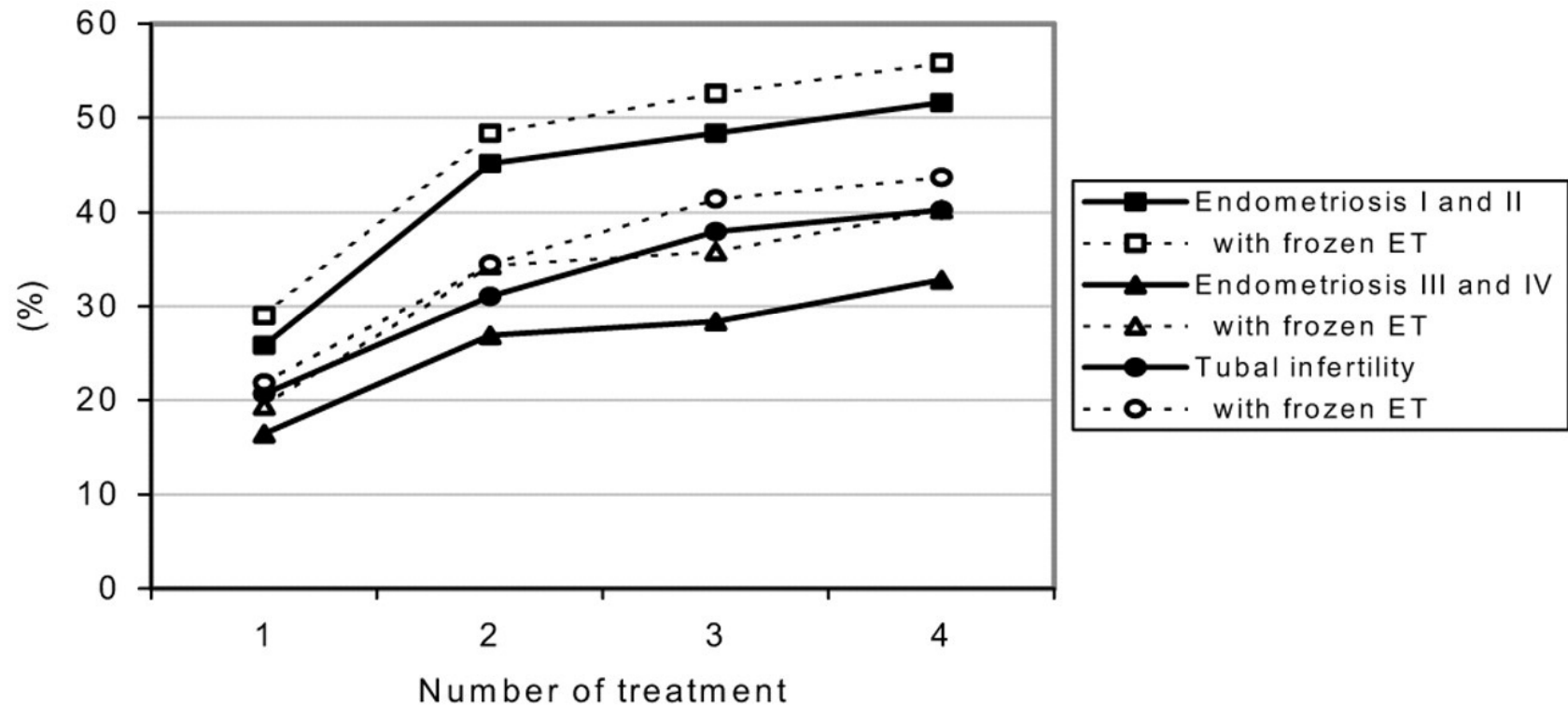
Stage I	33%
Stage II	22%
Stage III	15%
Stage IV	13%



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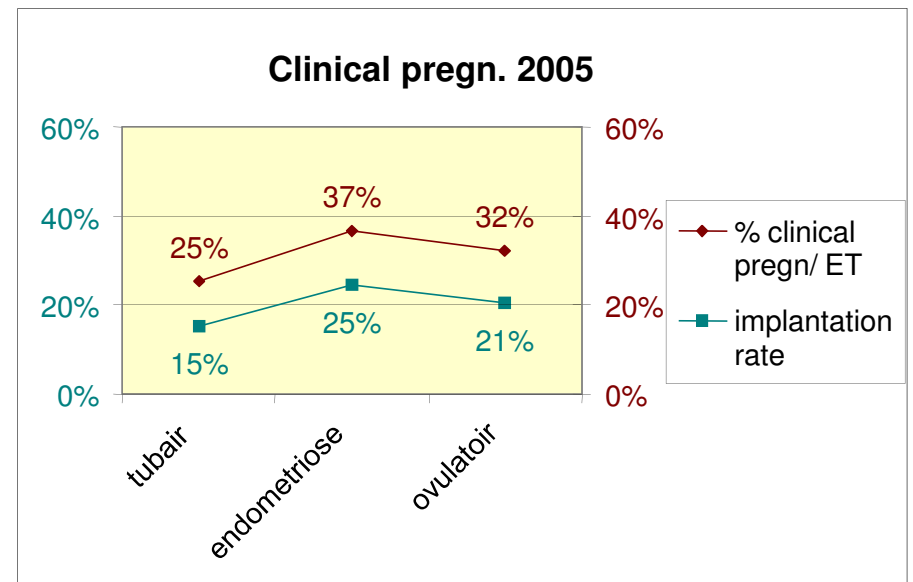
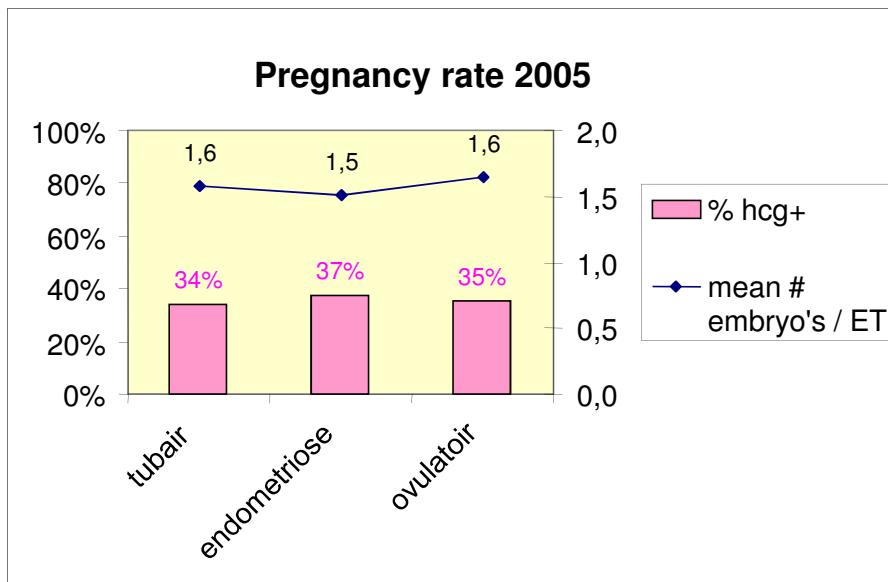
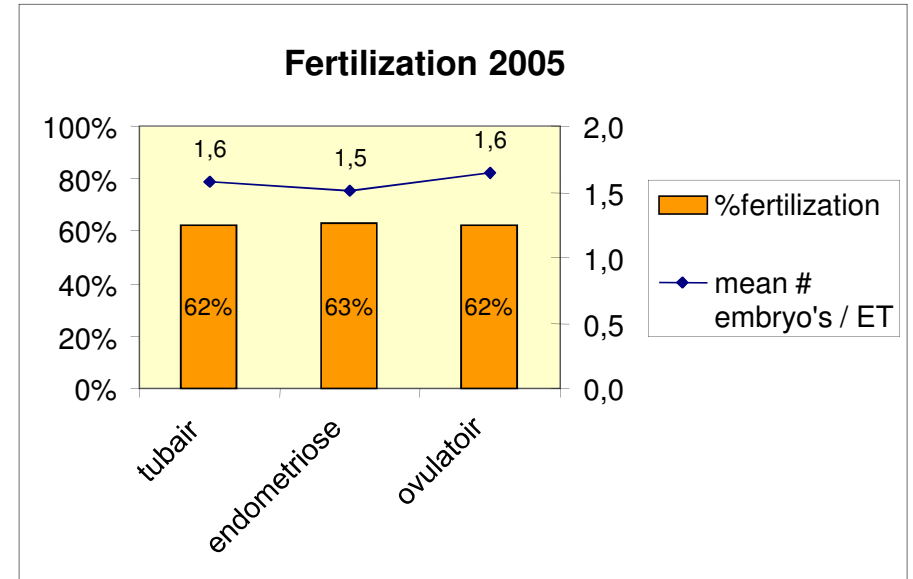
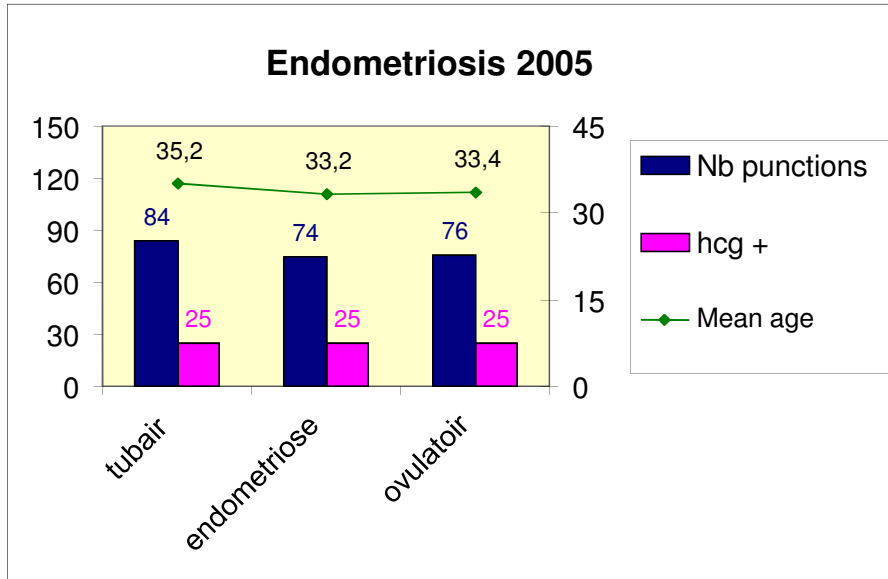
## Cumulative live birth rates (%) with and without frozen embryo transfer



Kuivasaari, P. et al. Hum. Reprod. 2005 20:3130



# IVF outcome and endometriosis



# Endometriosis rAFS III – IV

## Re-operation versus ART

	IVF	Re-operation
Number	23	18
Age	32.5	31.6
CPR	33.3%*	24.4%

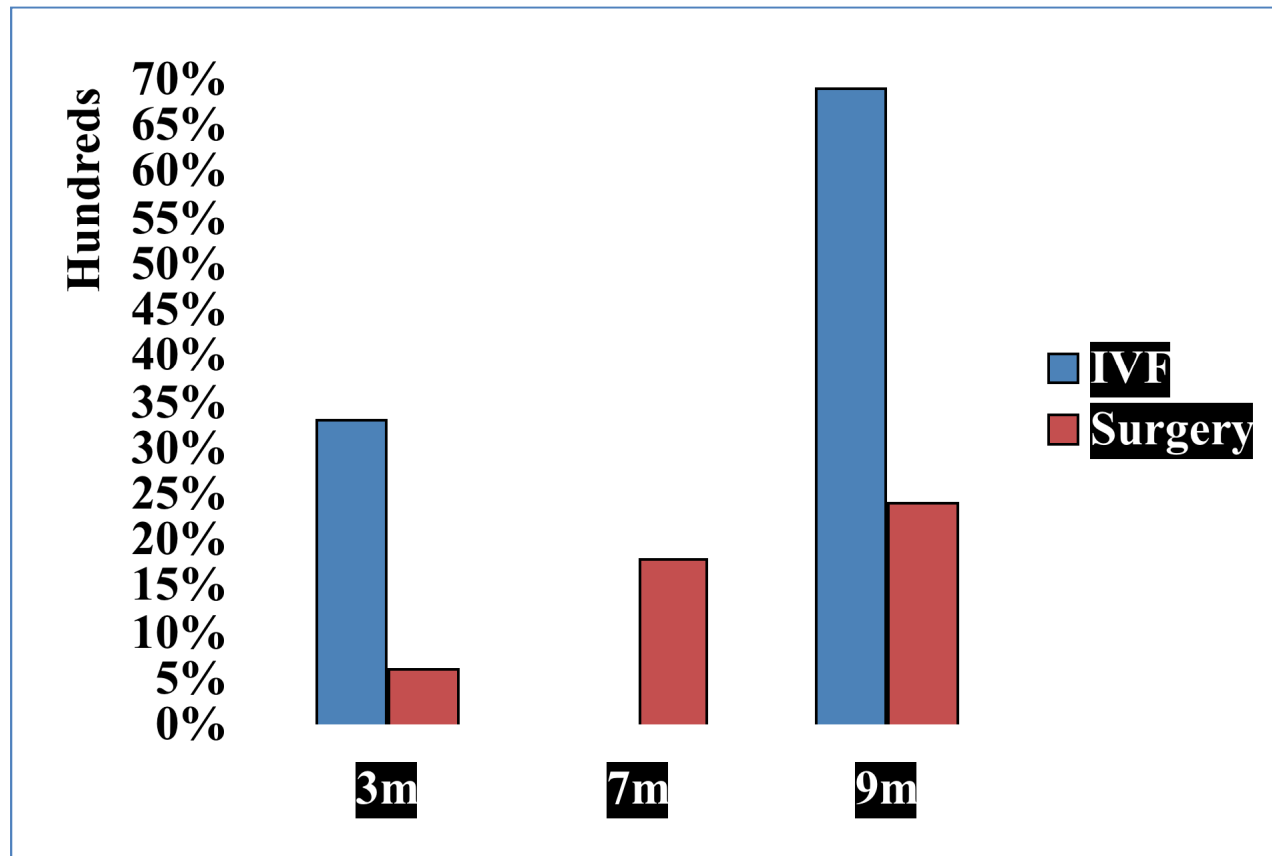
\* 1 cycle

Pagidas et al. 1996 Fertil Steril,65



# Endometriosis III – IV

## CPR: Re-operation versus ART



Pagidas et al. 1996 Fertil Steril,65





# Recurrence of endometriosis

## *Reoperation and CPR*

Cheewadhanaraks, 2004	n=32	20.5%	(12m)
Wheeler, 1983	n=62	47%	(36m)
Pagidas, 1996	n=18	24.4%	(9m)
Bussaca, 1998	n=81	45-54%	(24m)
Candiani, 1991	n=42	30.7%	(27m)



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## Recommendations in case of recurrence ovarian endometrioma

IVF : first choice

< 5 cm, unilateral ?  
patients at age,  
combined male pathology  
GnRha down regulation



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## Recommendations in case of recurrence ovarian endometrioma

### Re operation

in case of cysts larger 5 cm, bilateral  
pain

experienced surgeons

GnRha for 2 – 3 months as preparation for IVF

### Informed consent



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# Conclusions

No evidence based treatment

Results in case of recurrence seems not to be different.

Results ART: stage III - IV : lower pregn%

Experienced surgeon is mandatory



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# Conclusions

## Re-operation:

PRO: pregnancy rates 20 – 50%  
spontaneous conception

CONTRA: reducing ovarian reserve  
recurrence is possible  
risk intervention

? higher pregn% after reducing

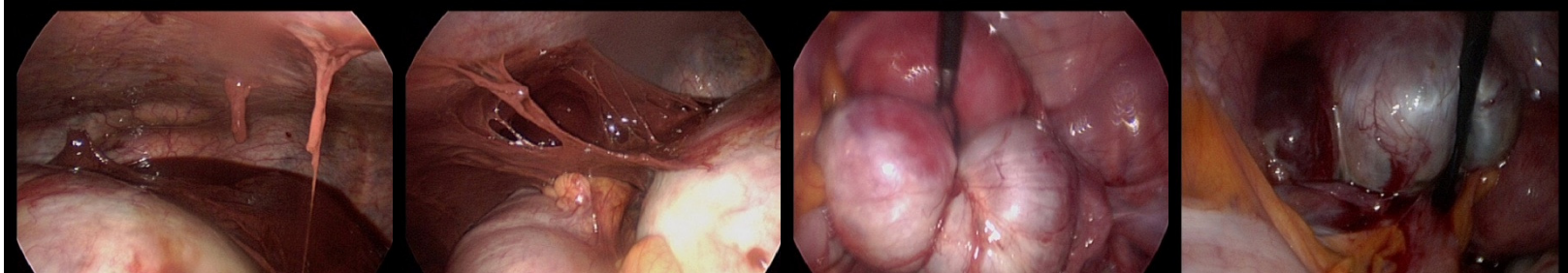


# Conclusions

## ART

PRO: although pregnancy rate ↓ with severity, higher CPR

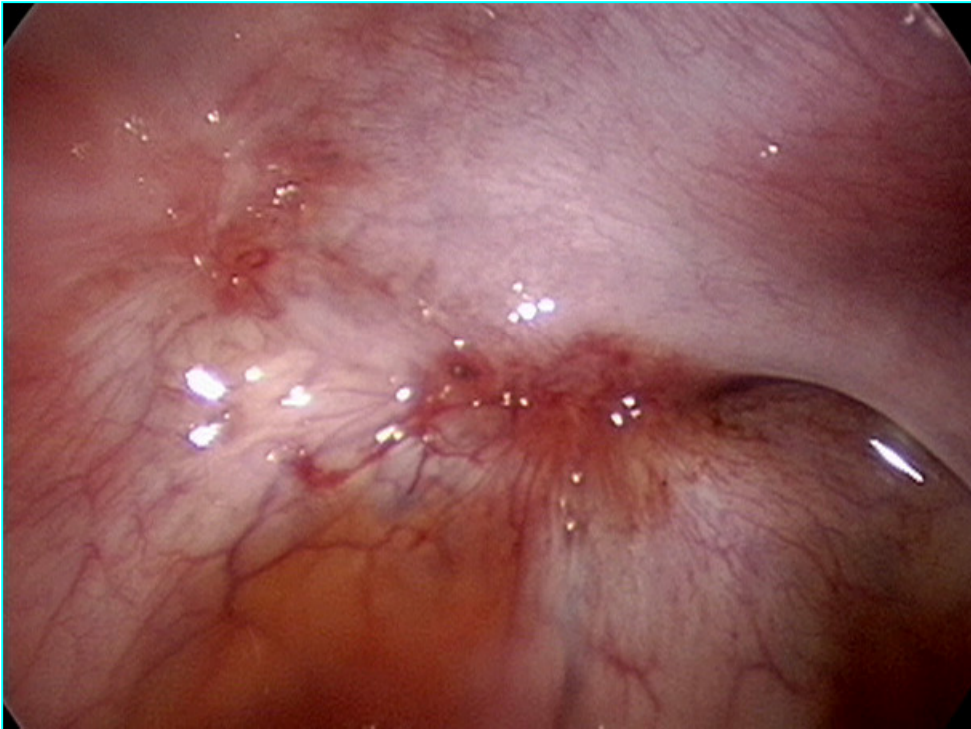
CONTRA: IVF treatment<sub>(costs, multiple pregn.)</sub>  
cyst rupture; abces  
long term? malignancy?



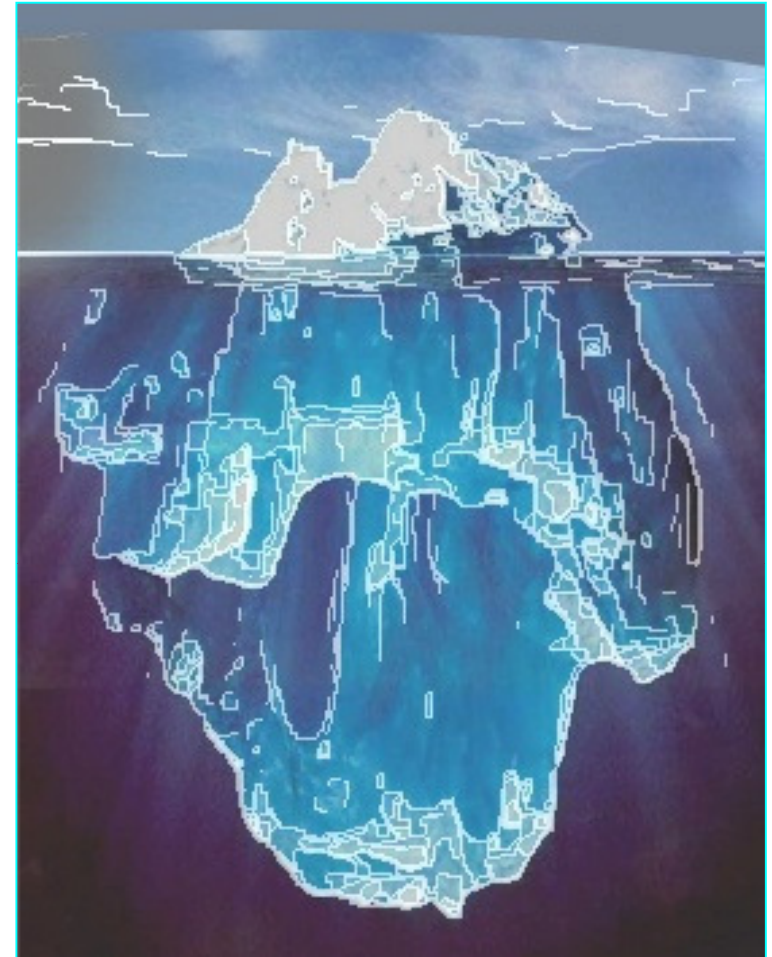
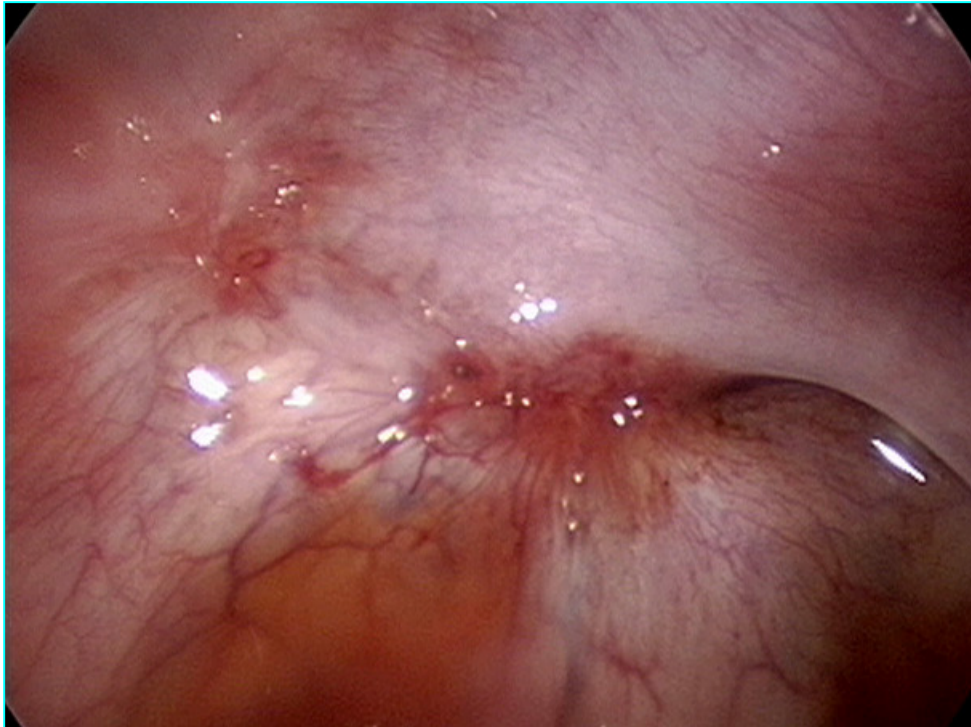
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# Recto-vaginal endometriosis



**A nodular lesion with, pathologically,  
mainly fibrosis & smooth muscle  
metaplasia, and endometriotic tissue**



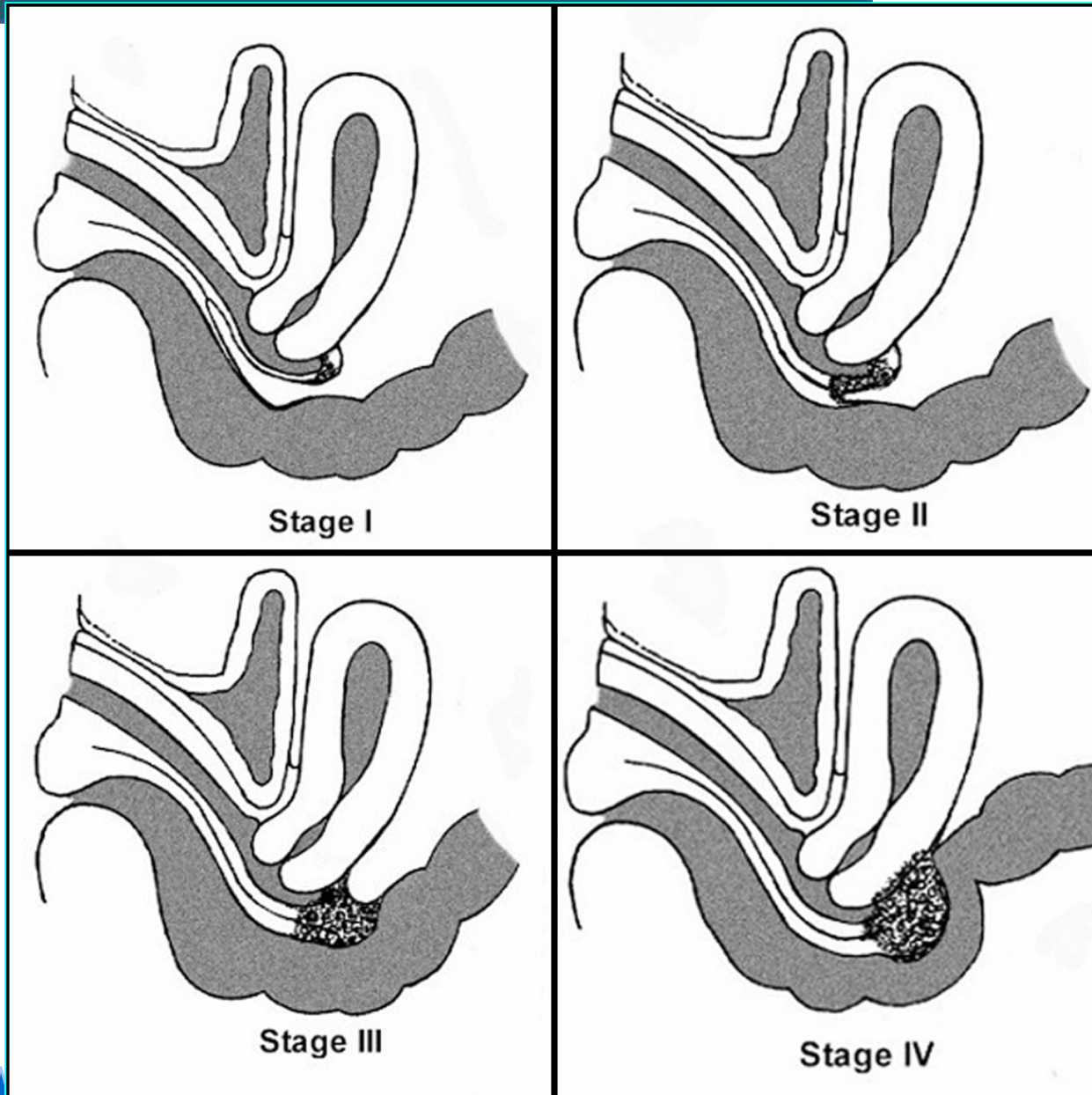
Griffiths AN et al.(2007): J. Obstet. Gynaecol. 27 (6), 605  
Rectovaginal endometriosis, a frequently missed diagnosis



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Dr. L. Adamyan



# 33 cases – 1 surgeon (SG)

January 2004 – December 2006

mean age: 29 yr ( $\pm$  SD 4,1 yr)

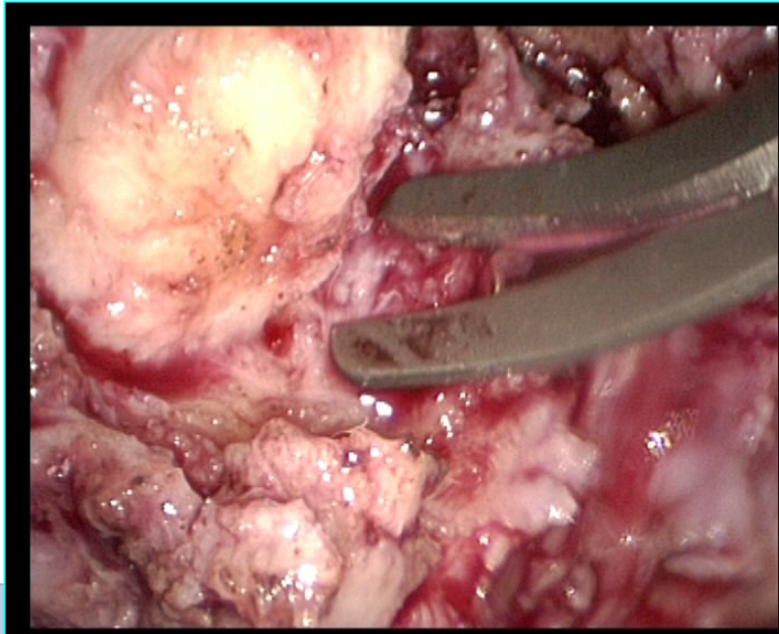
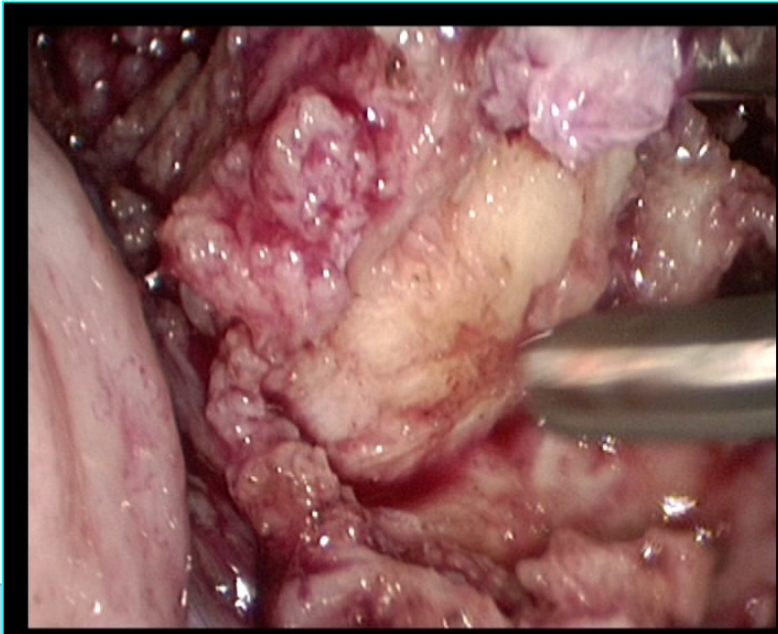
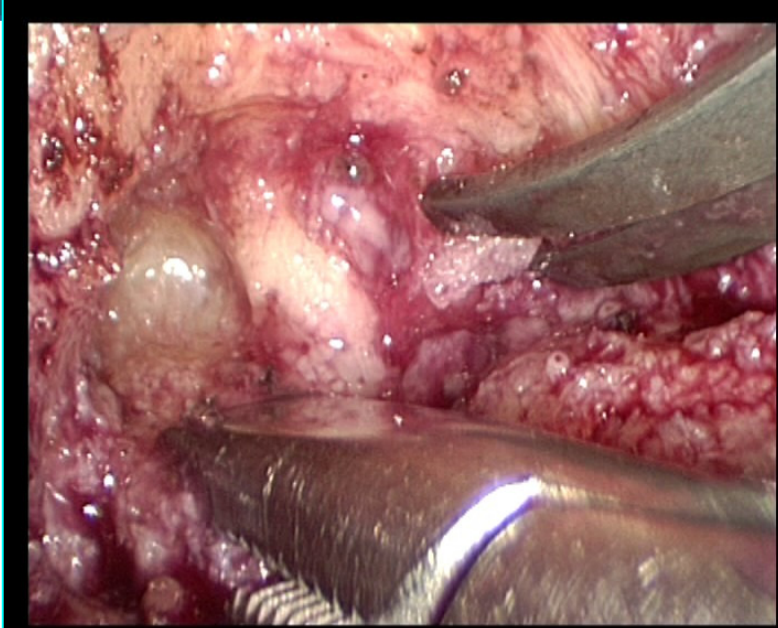
infertility: 30 (91%)

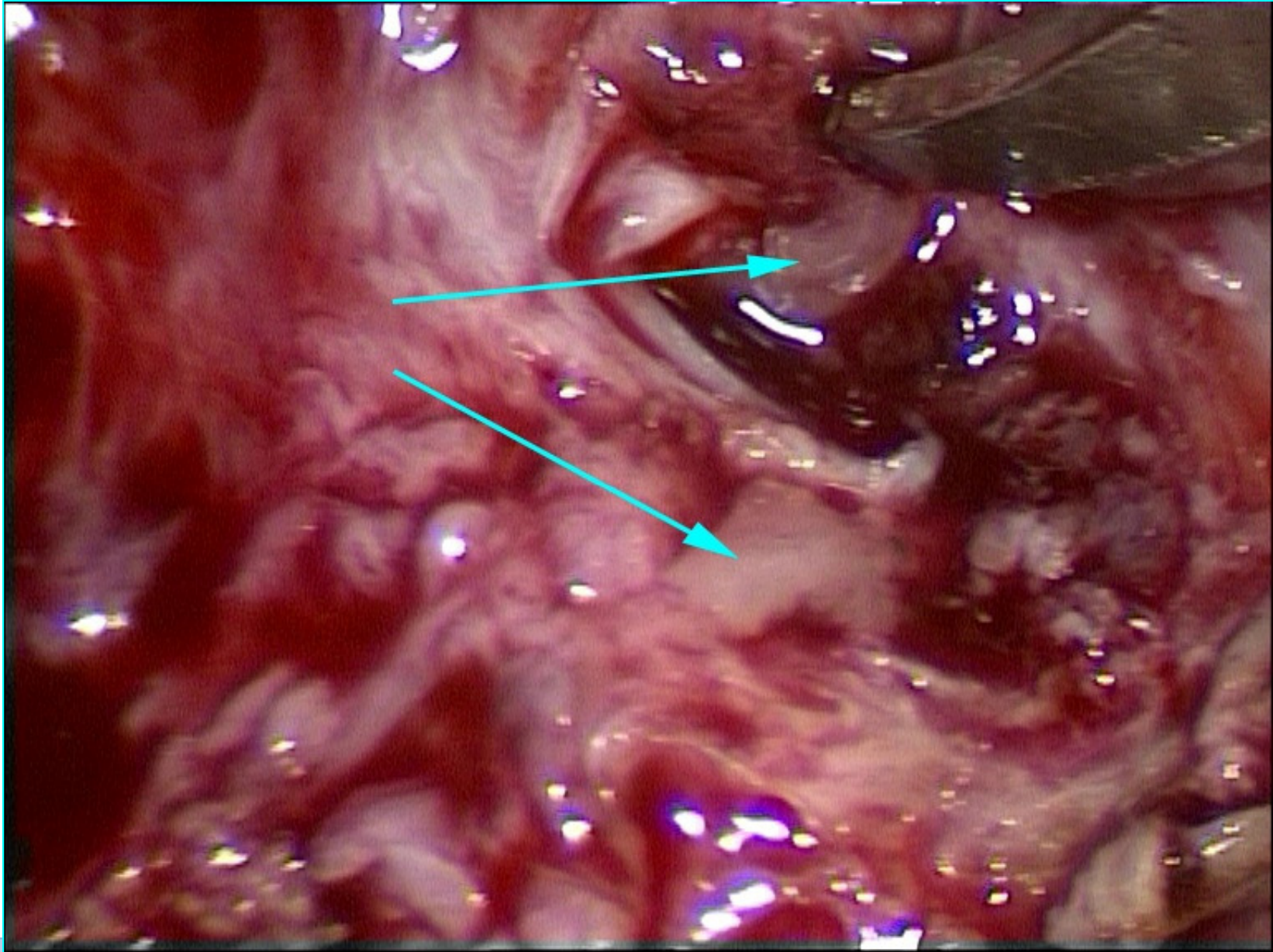
earlier laparoscopy - no R/: 14 (42%)



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# Results - 1/3

nodule size (cm)	2,4	±SD 1,2
rectal endometriosis	25	76%
rve + bladder endometriosis	1	3%
rve + ovarian (uni- of bil)	21	64%
open vagina (close vaginally)	18	55%
~ to allow for entire resection of lesion		



# Results – 3/3

no desire for pregnancy	2
desire for pregnancy	22
mean duration of infertility	21 months
mean time to implantation	10 months ( $\pm$ SD 9m)
ongoing pregnancies	17
spontaneous pregnancies	8 (67% of 12)
IVF pregnancies	9



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# Conclusion

In patients who are trying to conceive resection of recto-vaginal endometriosis resulted not only in a relief of pain, but also showed a positive effect on the possibilities to conceive spontaneously (67%) within an acceptable delay following surgery.



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# Conclusion

In those patients referred to our IVF program because of complimentary pathology or a long standing infertility, resection of rectovaginal endometriosis and conservative treatment of the ovarian endometriosis didn't result in an impaired treatment outcome.

In our opinion these are all factors favouring surgery as a first treatment option.



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