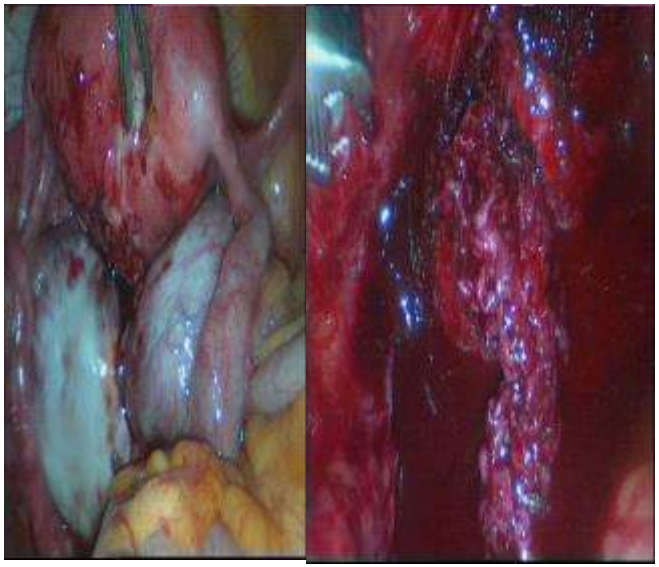
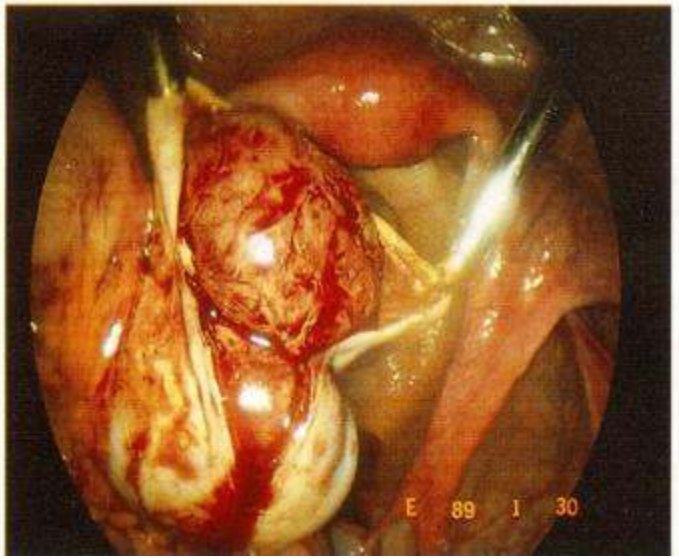
* Surgical treatment of endometriosis

M. Ćorić

* deep pelvic endometriosis surgery



endometrioma surgery



* Bussaca M.

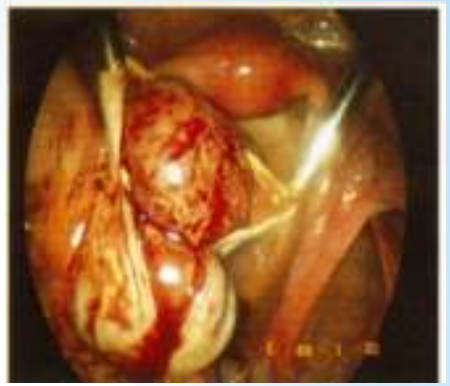
LPSC treatment of endometrioma –

complex surgery

* technical difficulties
* damage to the ovarian function
* postoperative adhesion formation and subsequent tubal damage
* bilaterally of the cyst and association with DE
* frequency of recurrences (20%)

European Congress on Endometriosis
Nov 29 – Dec 1, 2012 Siena – Italy
Journal of Endometriosis.
2012;4:210.

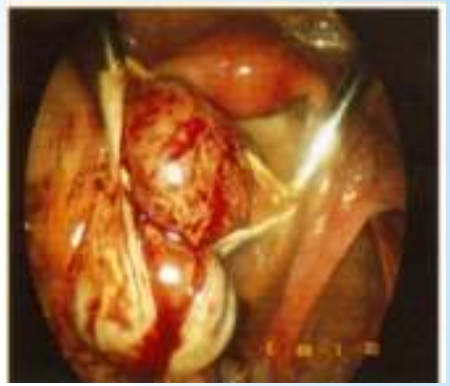
*The treatment of ovarian endometrioma



controversies:

- endometrioma - infertility
- increased fertility after surgery
- utility of surgery for fertility purposes in women with endometriomas – ovarian damage
- various surgical techniques (cystectomy vrs ablation)

*The treatment of ovarian endometrioma



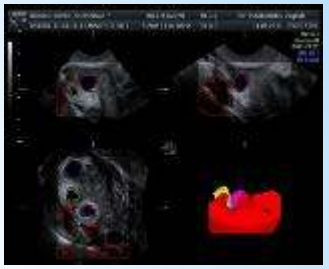
Against Surgery

- deleterious effect of surgery on the ovarian reserve
- the higher risk of premature ovarian failure

Busacca M et al:Endometrioma excision and ovarian reserve: a dangerous relation.J Minim Invasive Gynecol. 2009 Mar-Apr;16(2):142-8.

Ruiz-Flores FJ et al: Is there a benefit for surgery in endometrioma-associated infertility? all:Curr Opin Obstet Gynecol. 2012 Jun;24(3):136-40.

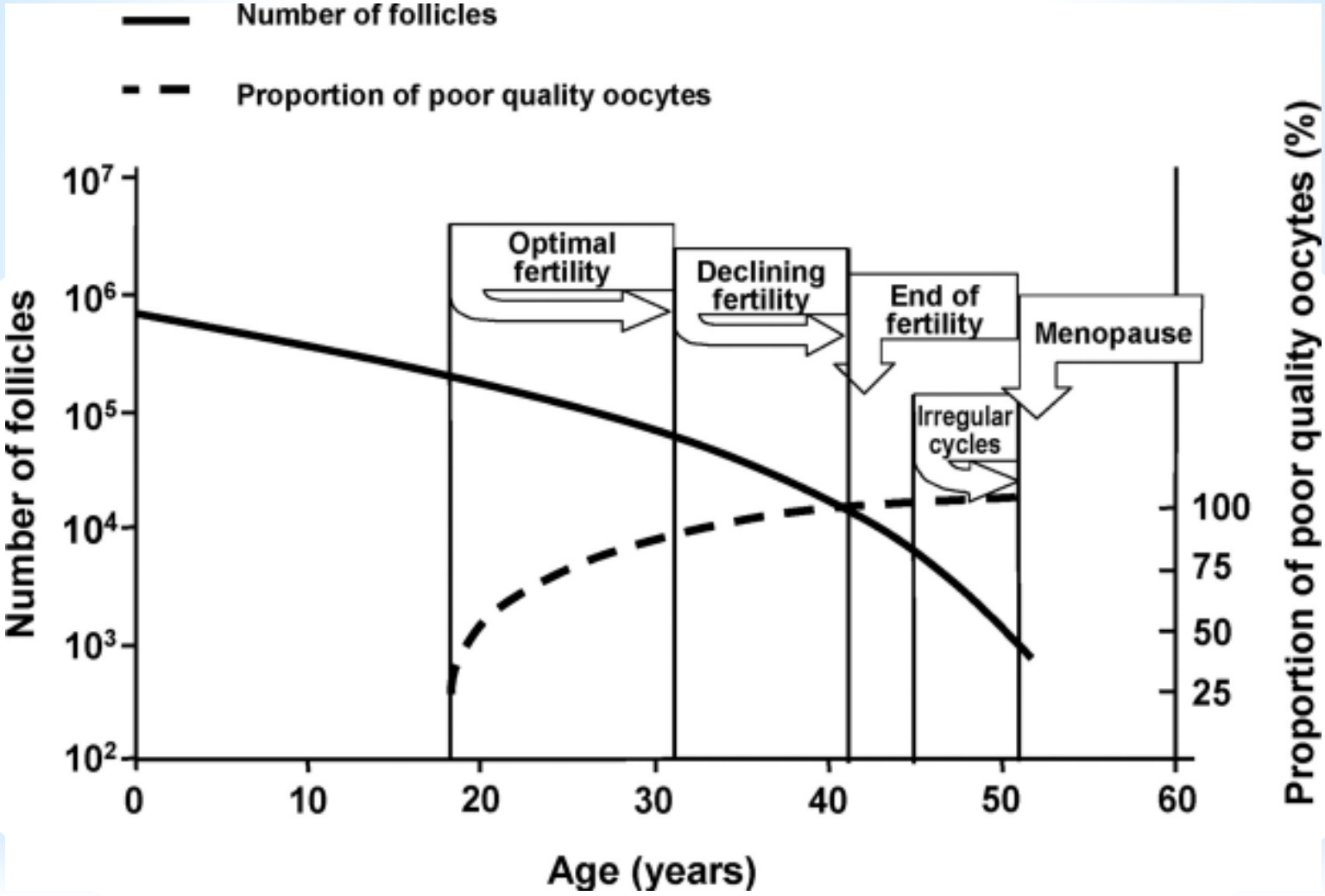
*Ovarian reserve



* postponed childbearing (> 35)

* ART (assisted reproductive technology)

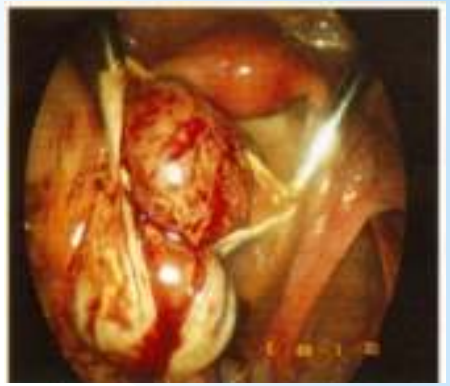
Schematic representation of the number of primordial follicles present in the ovaries and the chromosomal quality of oocytes in relation to female age and corresponding reproductive events.



Broekmans F J et al. Endocrine Reviews 2009;30:465-493

ENDOCRINE REVIEWS

*The treatment of ovarian endometrioma



Against Surgery

- histologic analyses – 50% ovarian cortex in endometrioma vrs 6% well-defined capsule

Muzii L et al: Laparoscopic stripping of endometriomas: a randomized trial on different surgical techniques. Part II: pathological results.Hum Reprod. 2005 Jul;20(7):1987-92. Epub 2005 Apr 28.

- electrocoagulation damage during hamostasis

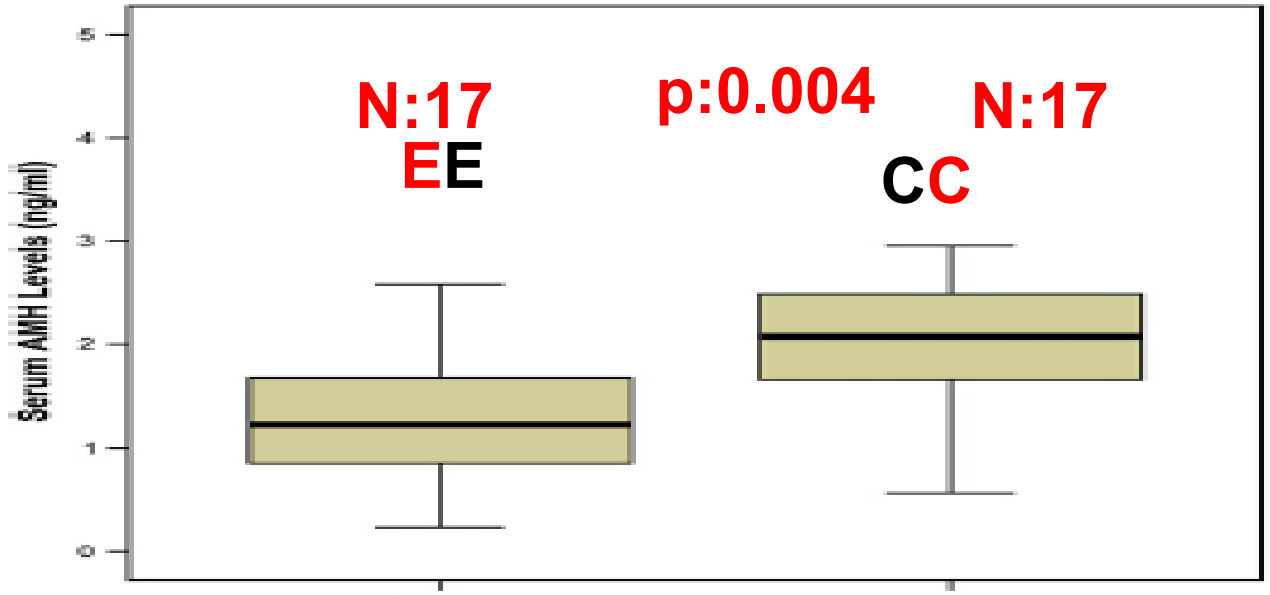
Busacca M et al:Endometrioma excision and ovarian reserve: a dangerous relation.J Minim Invasive Gynecol. 2009 Mar-Apr;16(2):142-8.

Var T et al: The effect of laparoscopic ovarian cystectomy versus coagulation in bilateral endometriomas on ovarian reserve as determined by antral follicle count and ovarian volume: a prospective randomized study. Fertil Steril. 2011 Jun;95(7):2247-50.

* Decreased **anti-Mullerian hormone** and altered ovarian follicular cohort in infertile patients with minimal/mild endometriosis

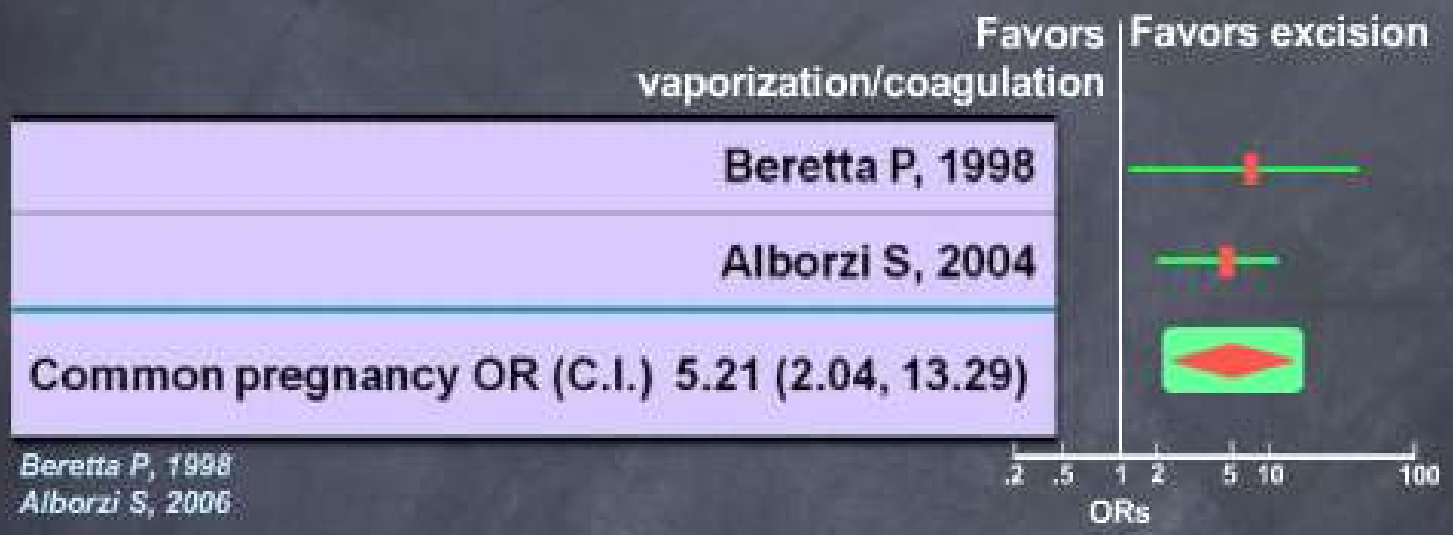
FIGURE 1

Serum anti-Müllerian hormone (AMH) (in nanograms per milliliter) comparison between infertile patients with minimal/mild endometriosis and infertile patients with tubal obstruction (without endometriosis). The box represents the interquartile range that contains the 50% of values. The whiskers are lines that extend from the box to the highest and lowest values, excluding outliers. A line across the box indicates the median. P .004, Student's t-test.



Nadiane Albuquerque Lemos, 2009

Surgical Technique



Excisional surgery group for endometriomas >4 cm diameter:

- Reduced recurrence rate (x 2 y) of pelvic pain
- Greater rate of spontaneous conception with NNT = 2.7

NNT = number needed to treat

Excision of endometriotic cyst wall may cause loss of functional ovarian tissue

TABLE 1

Distribution of histopathologic diagnosis according to histologic grading.

N:46

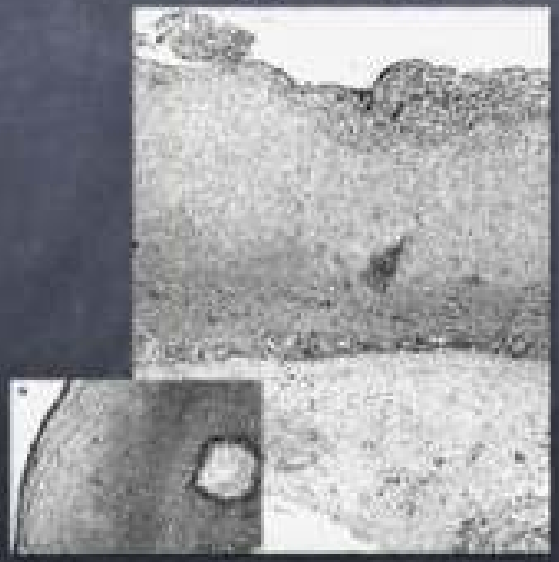
	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	Total
Endometriotic cysts	4	13	8	0	2	27 (58.69%)
Dermoid cysts	2	1	4	0	0	7 (15.21%)
Functional ovarian cysts	3	6	1	0	0	10 (21.74%)
Serous cystadenoma	0	1	1	0	0	2 (4.34%)
Total	9	21	14	0	2	46 (100%)

Umut Dilek, 2006

Endometrioma Cystectomy

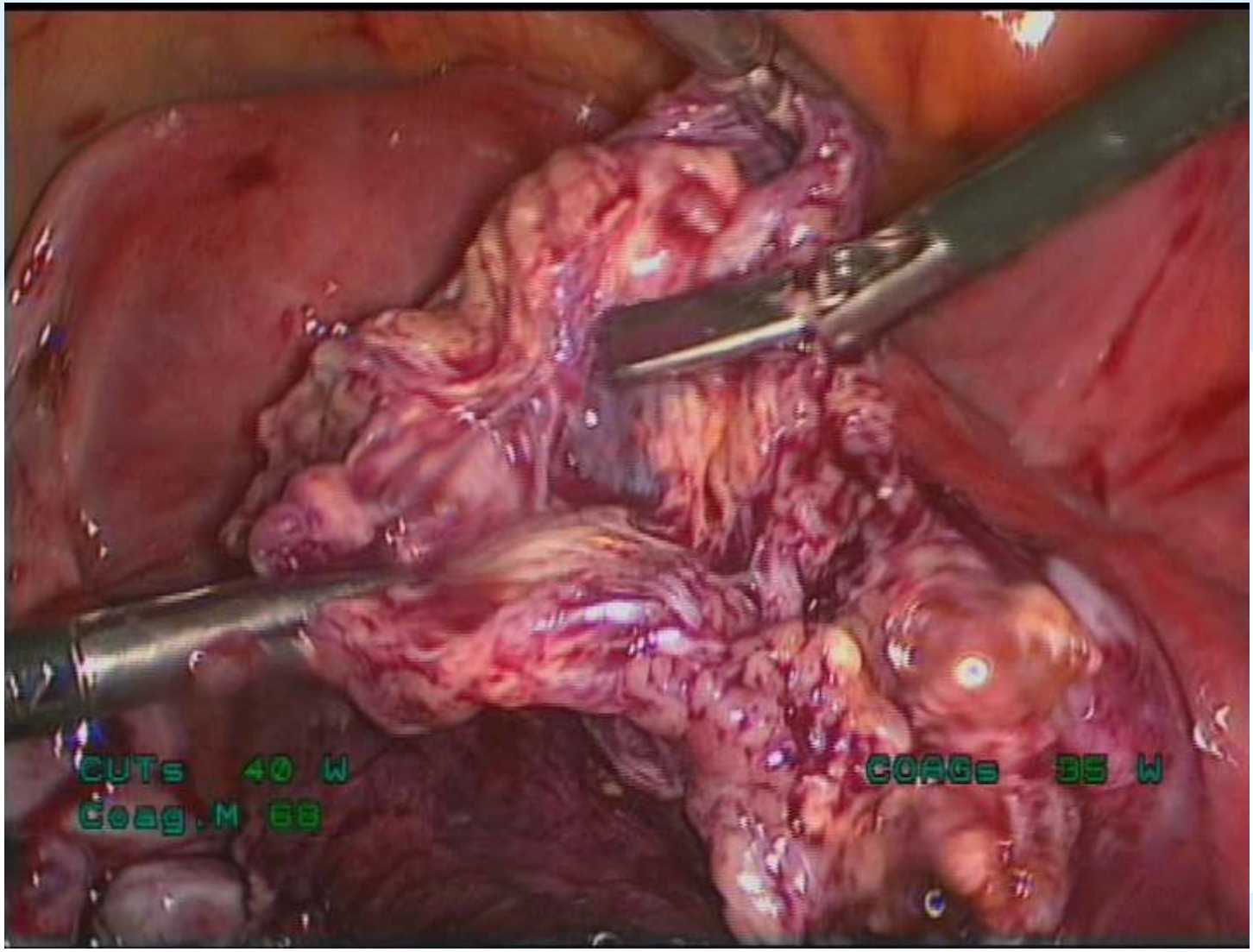
- Penetrating depths of endometrial glands ranged from 1 to 3 mm
- The more difficult the stripping the less likely there will be coexistent ovarian stroma in the sample. *Hachisuga, 2002*

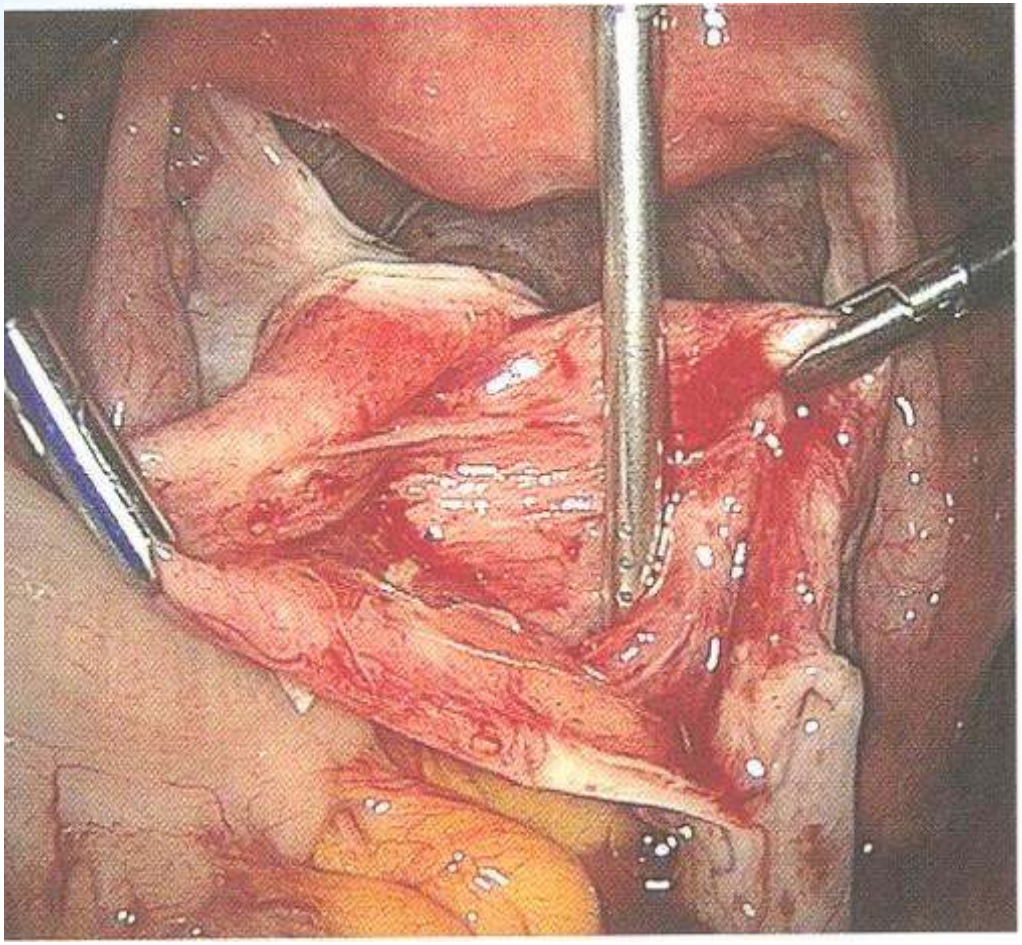
Easy stripping



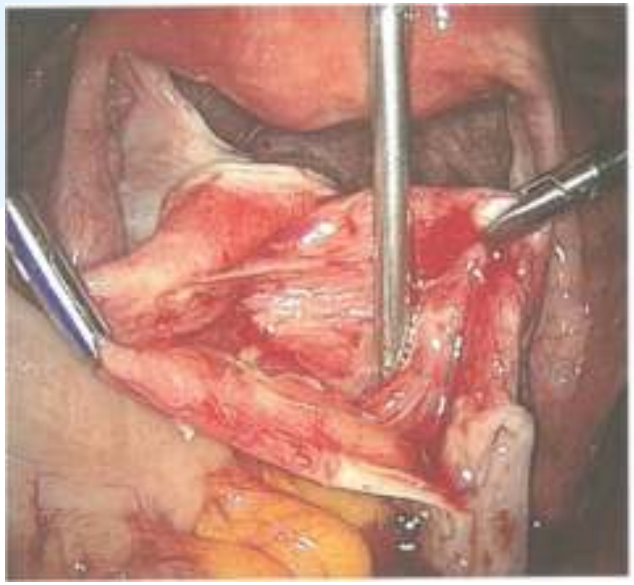
Difficult stripping

	Easy stripping	Difficult stripping
No. of capsules with follicles:	42/57 (74%)	0


CUTs 40 W
Coag.M 60
COAGs 35 W



Lpsc Stripping vrs Three-step approach



* 1. LPSC DRAINAGE
* 2. GnRH analogues 3 months
* 3. LPSC laser vaporization

* **AMH LEVEL DID NOT DECREASE IN THREE-STEP APPROACH (10 PATIENTS !!)**

Tsolakidids D et al: Fertil Steril 2010; 94:71-7.

* Donnez mixed technique

* 1. Excision of a large part (80-90%) of the endometrioma with stripping tech. (PARTIAL CYSTECTOMY)

* 2. CO2 laser vaporization the remaining 10-20% of the cyst wall

* Donnez J et al. Fertil Steril 2010.94:28-32

* Chang HJ: **Impact of laparoscopic cystectomy on ovarian reserve: serial changes of serum *AMH levels*.** Fertil Steril. 2010 Jun;94(1):343-9

* Kitajima M et al. **Changes in serum AMH levels may predict damage to residual normal ovarian tissue after laparoscopic surgery for women with ovarian endometrioma.** Fertil Steril 2011;95:2589-91.

* Exacoustos C. et al. **Laparoscopic removal of endometriomas: *sonographic evaluation* of residual functioning ovarian tissue.** Am J Obstet Gynecol 2004; 191:68-72.

* **AMH LEVELS**
  DECREASED

* **OVARIAN VOLUME**
  DECREASED

* **Surgical control group- nonendometriotic cysts**

Stripping procedure

AMH declilnes

AFC declines

* Chang HJ et al. Fertil Steril 2010; 94:343-9.
Lee et al. Gynecol Endocrinol 2011; 27:733-6.
Ćorić et al. Arch Gynecol Obstet. 2011 Feb;283(2):373-8.

AMH steady levels =

AFC declines

Ercan et al. Gynecol Endocrinol 2010;26:468-72.
Ercan et al. Eur J Obstet Gycexol Reprod Biol 2011;158:280-4.

Recurrent endometrioma

* high risk for additional damage of ovarian reserve
* can remain asymptomatic and do not necessarily progress in size with or without medical treatment.
* decision to reoperate depends less on the endometrioma's size than on symptoms
* such patients are also more likely to have signs of deep nodules and adnexal/bowel adhesions and larger endometriomas on TVS scan, thus predisposing them to require a second procedure.

Exacoustos C. et al. Recurrence of endometriomas after laparoscopic removal: sonographic and clinical follow-up and indication for second surgery. J Minim Invasive Gynecol 2006 Jul-Aug;13(4):281-8.

* Yu HT, Huang HY, Soong Yk, Lee CL, Xhao A, Wang CJ.

* Laparoscopic ovarian cystectomy of endometriomas: surgeons' experience may affect ovarian reserve and live-born rate in infertile patients with in vitro fertilization-intracytoplasmic sperm injection.

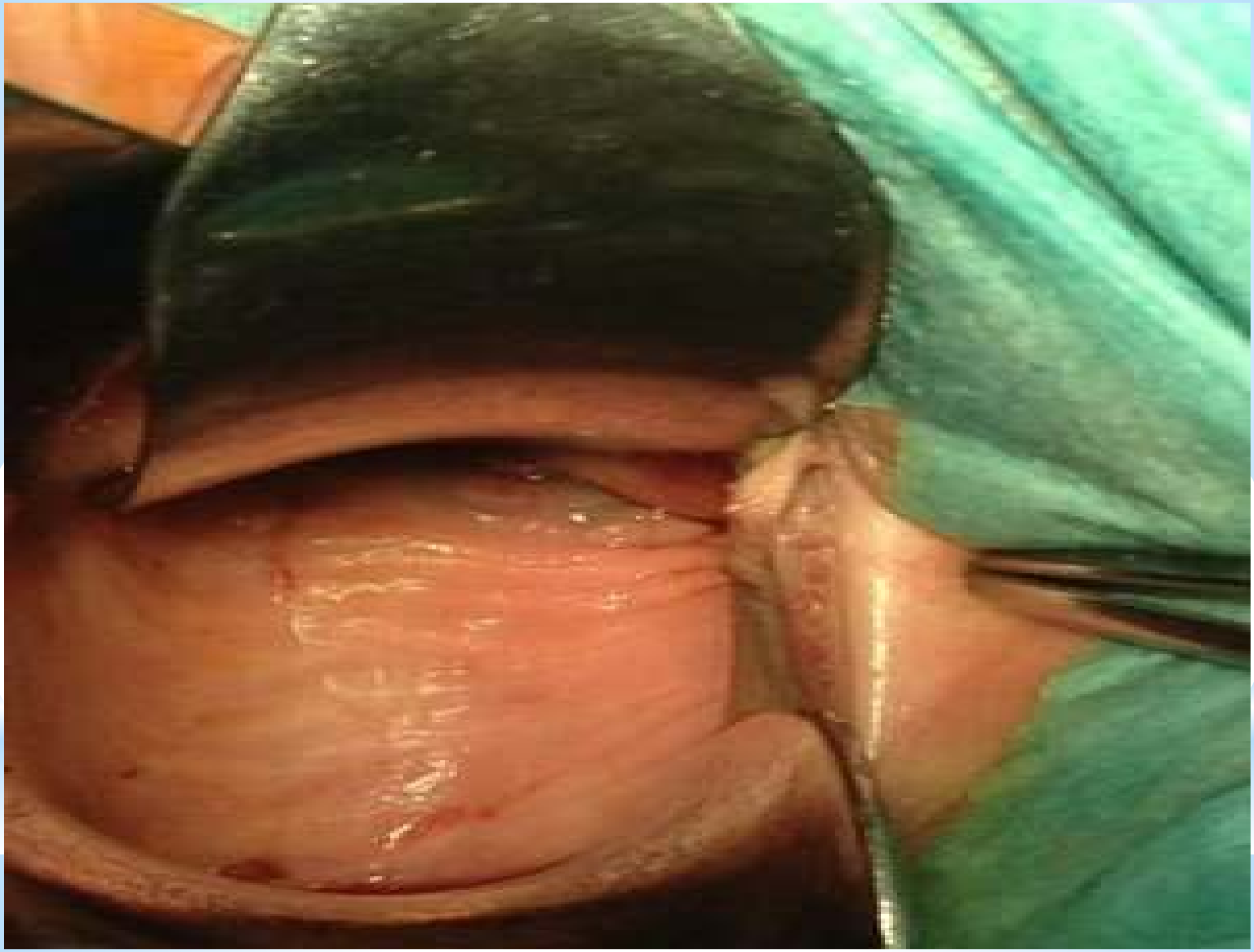
* Eur J Obstet Gycexol Reprod Biol 2010;152:172-5

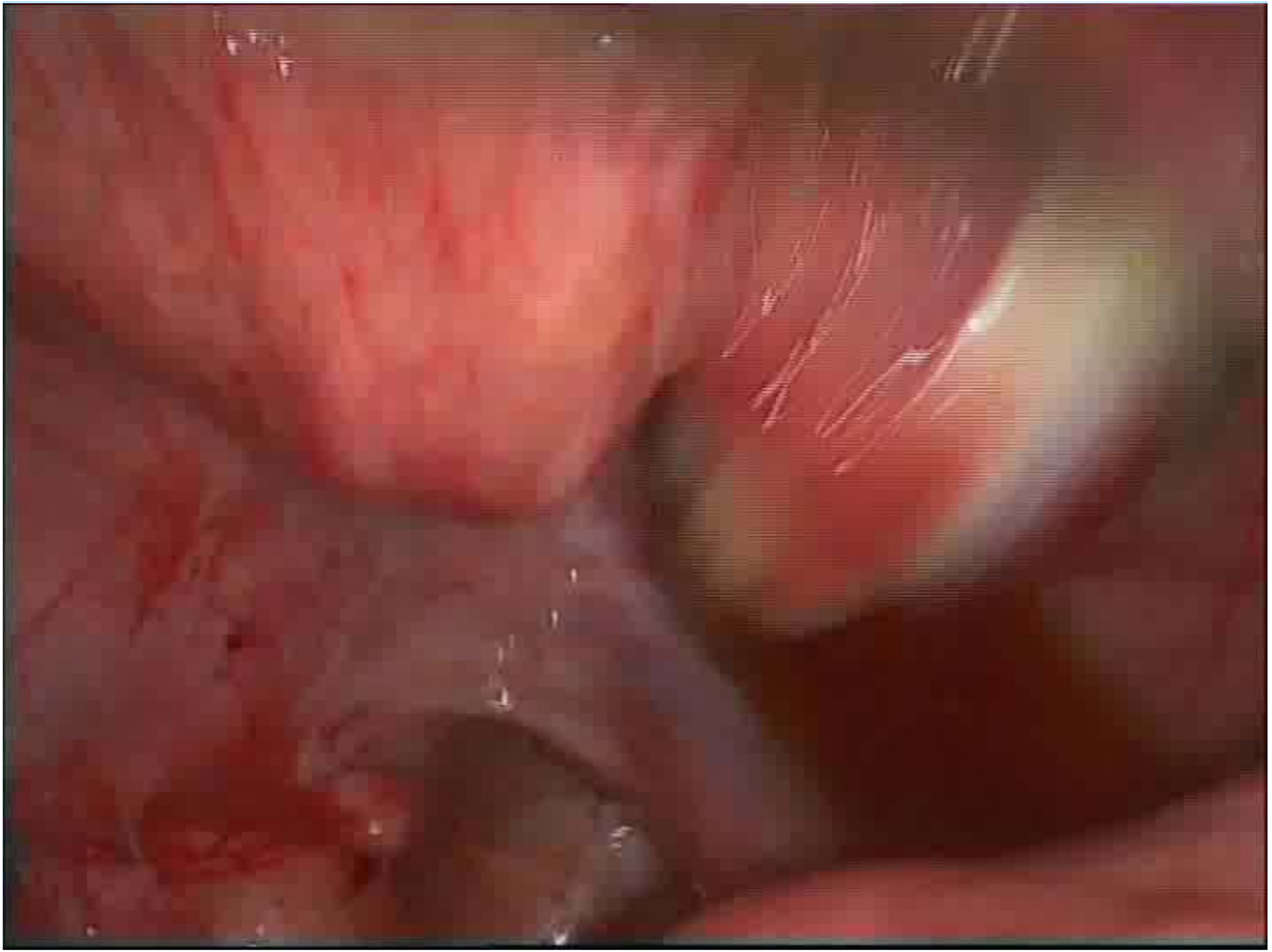
* **Muzii** et al.

* Histologic analysis of specimens from laparoscopic endometrioma excision performed by ***different surgeons***: does the surgeon matter?

* **Fertil Steril. 2011 May;95(6):2116-9.**

* **S.R. 43 g**
* 2008. god LPSC: enucleatio myomatis, adhaesiolysis, chrompertubatio
  2012. god. HYSC: ablatio polypi endometrii, PHD polypus glandularis
  Unazad godinu dana prati se cista jajnika, sumnja na endometriom, praćena povremenim bolovima u donjem dijelu trbuha i leđima te dispareunijom.
  Gin. pregled: u stražnjem forniksu palpira se i prosijava endometriotični čvor (plak) širine 2 cm.uterus je normalno velik, ograničeno gibiv. Obostrano palpiram povećana adneksa.





C.F. 33 g

* 2011. g. LPSC ppt cysta endometriotica ovarii l. dex., myomectomia, hidrotubacija-otežana prohodnost oba jajnika-PHD: Cysta endometriotica ovarii, Fibromyoma,
* Unatrag 2 godine dispareunija, bol pri defekaciji.
  Kolonoskopija (26.04.2013.): vijenac unutarnjih hemoroida, ostalo b.o.
  MR zdjelice: oba jajnika su povećana, privučena prema dorzalno i kranijalno, smještena kranijalno od uterusa. U oba se jajnika uočava po jedna veća cistična tvorba koja prema svojim karakteristikama odgovara endometriomu, u l.o. je vel. oko 3.4x2.7 cm, dok je u d.o. promjera oko 1.9x1.9 cm. U ovarijima se obostrano uočavaju i pojedinačne manje cistične tvorbe karaktera endometrioze. L. ureter je po svemu odvojen od promijena u sklopu endometrioze l.o. Endometrioza d.o.-prema dorzalno je na segmentu od oko 1 cm neodvojiva od anteriorne konture rektuma, nije moguće isključiti infiltraciju stijenke rektuma oko 15 cm oralno od analnog otvora.... u desnom ovariju endometriotični nodus infiltrira te povlači parametrijske venske spletove prema kranijalno, a od d. uretera je u ovom području po svemu slabo odvojiv... Oba uretera u prikazanom zdjeličnom segmentu bez dilatacije... (nalaz u prilogu)

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