

*Brüksel Kadın Sağlığı
ve Üreme Merkezi*

ENDOSKOPIK CERRAHİ ve İNFERTİLİTE

Prof.Dr. Yücel Karaman

Brüksel Kadın Sağlığı ve Tüp Bebek Merkezi

www.brukseltupbebek.com



21.Yüzyılda İnfertilite tedavisi ve endoskopik cerrahi

- Son 30 yılda infertilite cerrahisinde, özellikle Laparoskopik-Histeroskopik cerrahideki ve IVF teki gelişmeler pek çok avantajları,tercihleri de beraberinde getirmiştir.

İnfertilite cerrahisinde önemli dönem noktaları

- 1950 : Palmer: Diagnostic Laparoscopi
- 1970 : Kurt Semm: Operatif Laparoscopi
- 1970 : Gomel Swolin-Winston: Laparotomik mikrocerrahi
- 1980 : Bruhat-Manhes-Keye-Feste: Laparoskopik cerrahi, laparotomik mikro cerrahinin yerini almaya başladı.
- 1978 : İlk IVF bebeğinin doğumu
- 1984 : Daniel: Laparoskopik salpingonestomi
- 1996 : Robotik cerrahi

Laparoskopik Mikrocerrahi prensipleri

- Yeterli büyütme
- Minimal ve atravmatik manupilasyon (mikro-enstrümanlar)
- Çok iyi hemostaz (pin-point hemostasis)
- Dokuların ıslaklığını korumak
- Patolojik lezyonun tam eksizyonu ve yanındaki sağlam dokuya zarar vermemek
- Doku iskemisini ve termal hasarı önlemek
- Minimal veya hiç suture kullanmamak
- Gerektiğinde mikrosütürlerin kullanılması
- Adhezyon azaltıcı önlemlerin kullanılması

İNFERTİLİTE TEDAVİSİ

IVF

Endoskopik Cerrahi



1980 → 2010

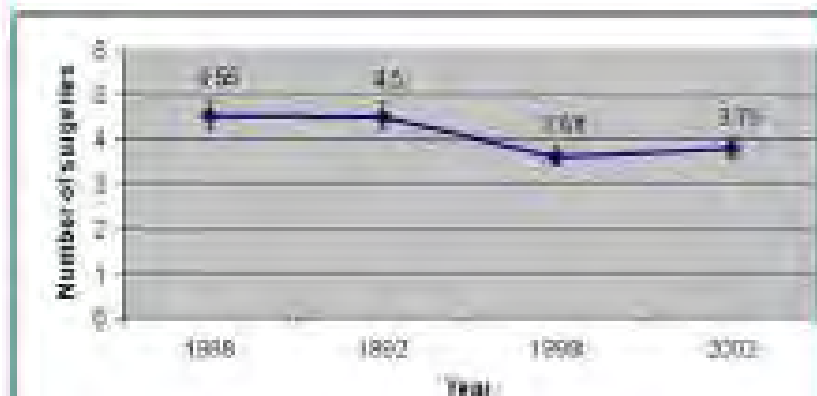
Fifteen-year trend in the use of reproductive surgery in women in the United States

Aline Ketefian, M.D.,^a Jianfang Hu, Ph.D.,^b Alfred A. Bartolucci, Ph.D.,^b
and Ricardo Azziz, M.D., M.P.H.,^{a,c} for the Society of Reproductive Surgeons, Inc.

^a Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, California; ^b Department of Biostatistics and Biostatistics, University of Alabama at Birmingham School of Public Health, Birmingham, Alabama; and ^c Department of Obstetrics and Gynecology, David Geffen School of Medicine, UCLA, Los Angeles, California

FIGURE 1

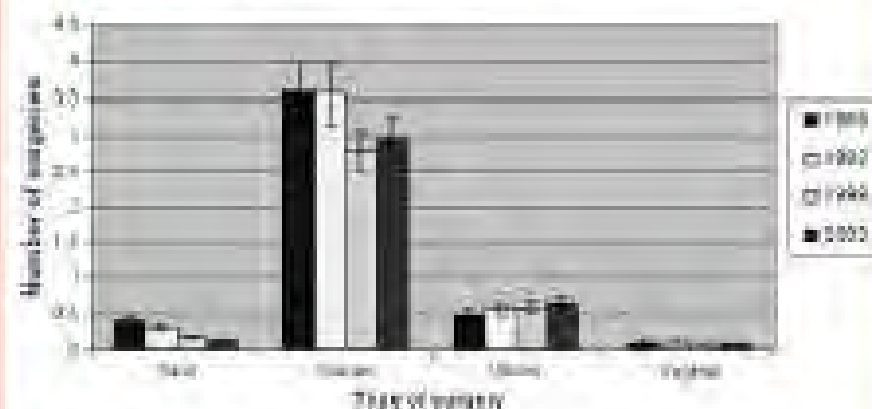
The total number of inpatient reproductive surgeries performed per 1000 females aged 15–45, 1988–2002.



Ketefian. Trends in female reproductive surgery. Fertil Steril 2009.

FIGURE 2

The total number of inpatient reproductive surgeries performed per 1000 females aged 15–45, by anatomic area, 1988–2002.



Ketefian. Trends in female reproductive surgery. Fertil Steril 2009.

Reproduc.Surg.versus ART

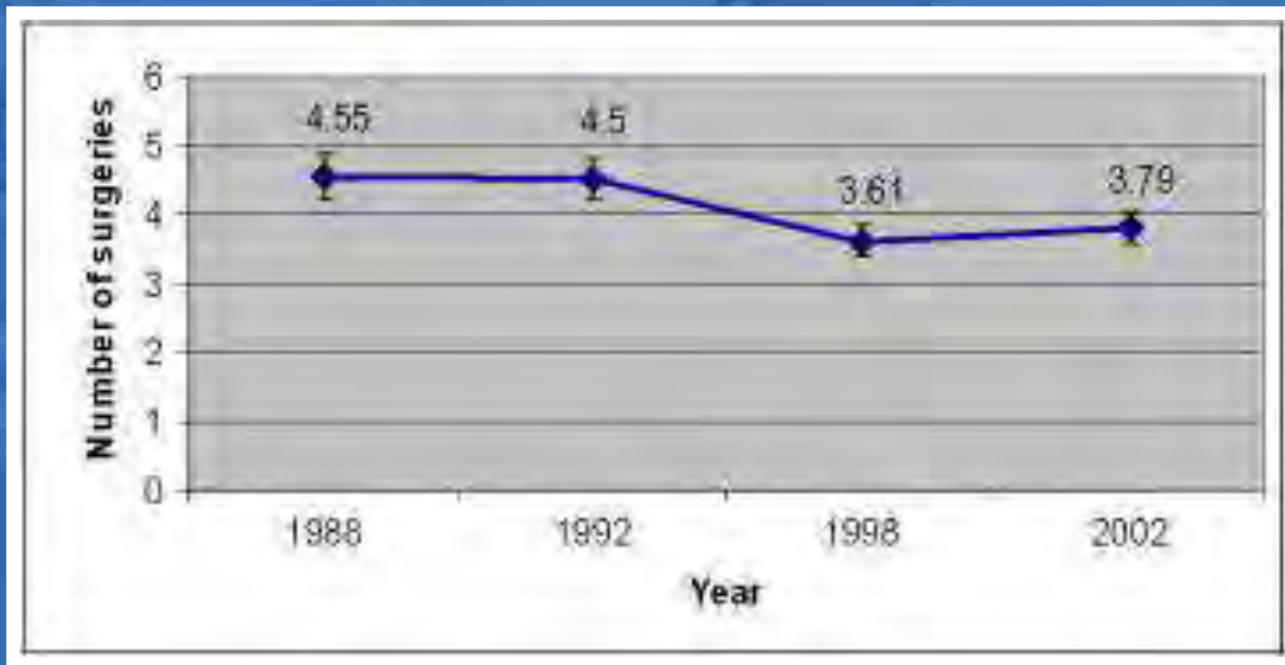
- Reproductive surgery

1998	1992	1998	2002
271 273	-274 140	-224149	-242 922 (-17%)

ART	1996	2004
	64 724	-127 977 (+ 98%)

Ketefian et al. Fert.Steril.2009

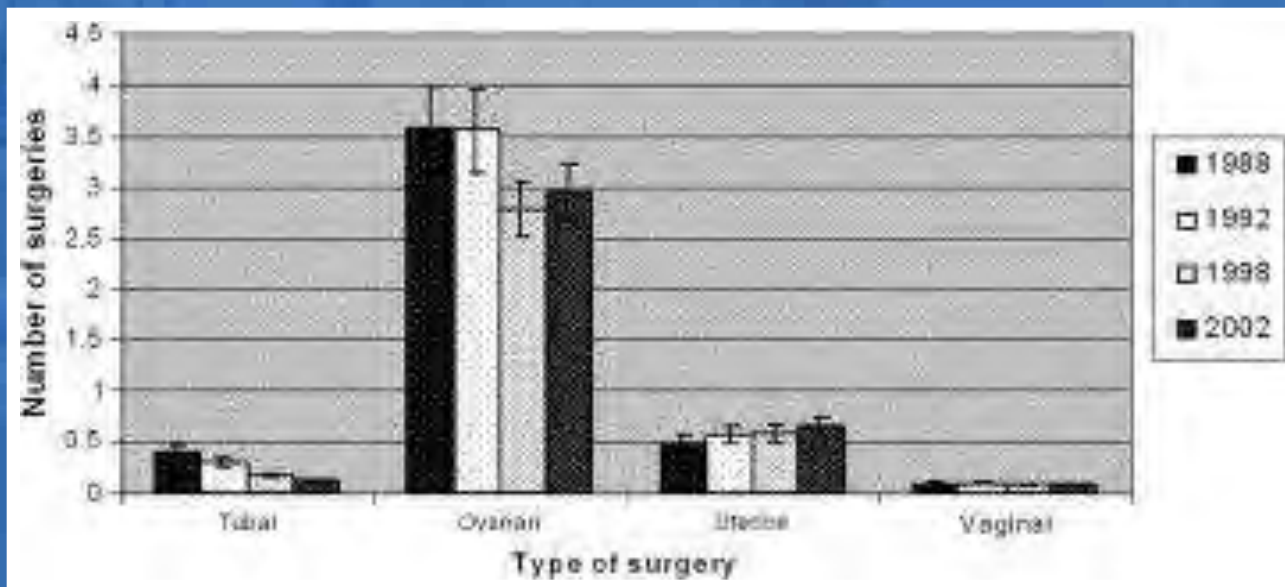
Figure 1



Source: [Fertility and Sterility 2009; 92:727-735](#) (DOI:10.1016/j.fertnstert.2008.06.041)

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Figure 2





ENDOMETRIOSIS

Why to treat Endometriosis ?

- Endometriosis can disrupt environment in peritoneal cavity
 - anatomical
 - hormonal and
 - immunological
- Endometriosis may cause **Pelvic Pain, Infertility, and Pelvic Mass**

OBJECTIVES OF THE SURGICAL APPROACH

PAIN

INFERTILITY



DIAGNOSIS

RECURRENCE



- Confirmation of diagnosis
- Treat or reduce the recurrence rates
- Increase the fertility:

Preserve the ovarian tissue, reduce adhesion formation

- Treat the painful symptoms



Treatment Objectives

- Restore normal anatomy
- Remove or ablate endometrial implants
 - Vaporization
 - Coagulation
 - Excision
- Prevent or delay recurrence of disease

ENDOMETRIOSIS AND INFERTILITY: RECOMMENDATIONS

Recommendation	Evidence	Level
A	Laparoscopic cystectomy for the treatment of endometrioma >4cm improves pregnancy rate in comparison to drainage and coagulation	1b
B	Vaporization of the endometrioma capsule without excision increases the recurrence rate	1b
A	Pregnancy rate after IVF in endometriosis is lower than in tubal factor with independency of the presence of an ovarian endometrioma (Suzuki 05)	1a
A	Postoperative treatment in stages III-IV might increase the pregnancy rates after IVF	1b
A	In patients with isolated endometrioma measuring less than 4 cm, surgery may reduce ovarian response to stimulation without increasing the IVF results.	1b
GPP	Endometriomas over 4 cm may be treated by laparoscopic cystectomy but the ovarian reserve and previous ovarian surgery should be taken into account (RCT Beretta 98, Alborzi 04)	



Surgical treatment of endometriosis associated infertility

Table II International guidelines on surgical treatment of endometriosis-associated infertility in asymptomatic women

Clinical condition	Recommendation		
	ESHRE 2005	ASRM 2006	RCOG 2006
Minimal-mild endometriosis (stage I-II disease)	Limited benefit: surgery recommended	Small benefit: surgery recommended	Demonstrated benefit: surgery recommended
Moderate-severe endometriosis (stage III-IV disease)	Possible but unproven benefit: surgery recommended	Possible benefit: surgery recommended	Possible benefit: recommendation uncertain
Post-operative adjuvant treatment	No benefit: not recommended	No benefit: not recommended	No benefit: not recommended
Surgery before IVF	Recommended if endometrioma ≥ 4 cm	Doubtful benefit: no recommendation	Recommended if endometrioma > 4 cm
Recurrent endometriosis	No recommendation	Second-line surgery not recommended	No recommendation

Vercellini et al. *Hum an Reprod* 2008



Surgery for endometriosis associated infertility

Surgery for endometriosis-associated infertility: a pragmatic approach

Paolo Vercellini^{1,2,4}, Edgardo Somigliana^{2,3}, Paola Viganò³, Annalisa Abbiati^{1,2}, Giussy Barbara¹, and Pier Giorgio Crosignani¹

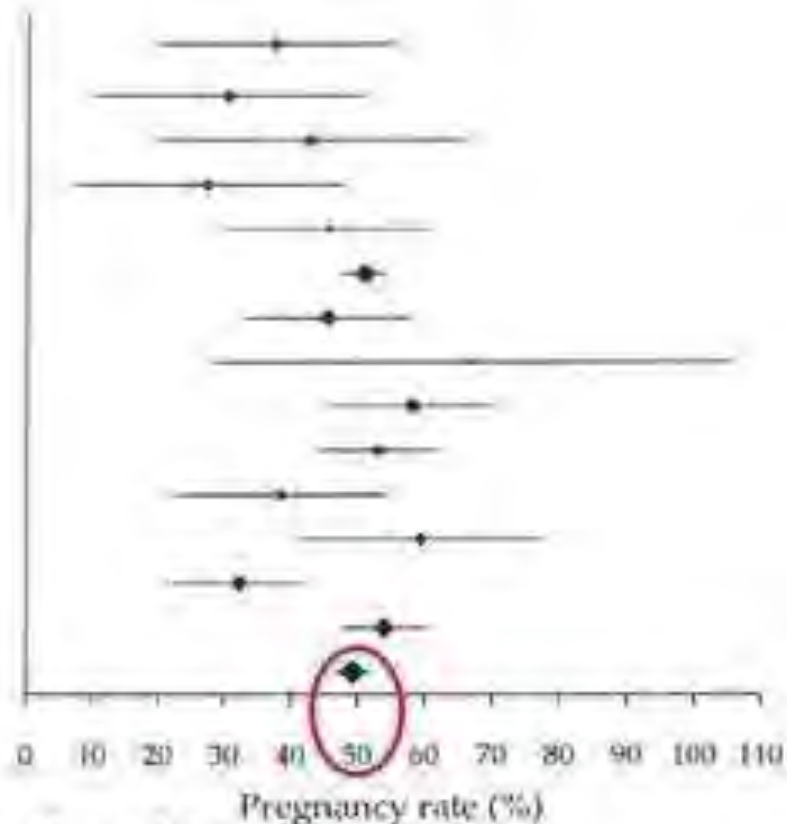
Source, year

Pregnancies/Total

180, 2009

Daniell <i>et al.</i> , 1991	12/32
Marrs <i>et al.</i> , 1991	7/23
Bateman <i>et al.</i> , 1994	9/21
Crosignani <i>et al.</i> , 1996	6/22
Montanino <i>et al.</i> , 1996	5/11
Donnez <i>et al.</i> , 1996	415/814
Sutton <i>et al.</i> , 1997	30/66
Beretta <i>et al.</i> , 1998	6/9
Busacca <i>et al.</i> , 1999	39/67
Milingos <i>et al.</i> , 1999	17/32
Jones & Sutton, 2002	15/39
Alborzi <i>et al.</i> , 2004	19/32
Fedele <i>et al.</i> , 2006	29/90
Vercellini <i>et al.</i> , 2006a	128/237

Overall weighted mean



Pregnancy rates after LPS excision of endometriomas

Endometrioma without surgery and IVF

- Treatment with a GnRH agonist for 3-6 months before IVF or ICSI should be considered in women with endometriosis as it increases the odds of clinical pregnancy fourfold.
- However the authors of the Cochrane review stressed that the recommendation is based on only one properly randomised study and called for further research, particularly on the mechanism of action

Sallam et al., 2006

Endometrioma and surgery

- Laparoscopic ovarian cystectomy in patients with unilateral endometriomas between 3 and 6 cm in diameter before IVF/ICSI can decrease ovarian response without improving cycle outcome.
- In the prospective randomized trial 49 patients underwent conservative ovarian surgery before the ICSI cycle and 50 patients underwent the ICSI cycle directly.
- Ovarian stimulation parameters for those who underwent ovarian endometrioma cystectomy were significantly reduced and fewer mature oocytes were retrieved in the cystectomy group.
- No difference in implantation and clinical pregnancy rates were detected

Demirol et al.,2006

Endometrioma and surgery

- Studies evaluating the response to ovarian stimulation in patients previously operated for endometriomas have led to controversial results in terms of ovarian response and cycle outcome.
- In patients with unilateral disease a significantly reduced number of follicles in the operated ovary compared to the intact side were reported in several but not all studies. The authors of one systematic review conclude that overall evidence suggests that surgery does not benefit asymptomatic women preparing to undergo IVF-ICSI who are found to have an endometrioma

.....Somigliana et al.,2006

Endometrioma and surgery

- The observation of an impaired ovarian response in women with endometriomas does not clarify whether the damage is consequent to surgery or antecedent to the intervention.
- An observational study in women with unilateral endometriomas who did not undergo previous ovarian surgery showed a significant mean reduction in follicles in the affected ovaries, suggesting that the presence of ovarian endometriomas is associated with a reduced responsiveness to gonadotrophins

.....Somigliana et al., 2006

Endometrioma and surgery

- The other meta analysis indicates that ovarian endometrioma have adverse effects on follicle number and oocytes retrieved but not on embryo quality or pregnancy outcomes.
- Surgery may decrease the number of retrieved oocytes, but the overall fertility outcome is not affected
Gupta et al., 2006

In Summary

- Laparoscopic ovarian cystectomy can be considered if an ovarian endometrioma >4 cm in diameter is present to
 - confirm the diagnosis histologically;
 - reduce the risk of infection;
 - improve access to follicles and
 - possibly increase spontan pregnancy rate.

Laparoscopic Laser Surgery for Endometriosis 1990-Oct 2009

<u>r-AFS score</u>	<u>N</u>	<u>DIE Nodules</u>
Stage I-II	1153(56%)	-
Stage III-IV	892 (44%)	107
Total	2045	(5,2%)

Karaman 2009

Brüksel Kadın Sağlığı ve Tüp Bebek Merkezi, Istanbul
Hopital Française Reine Elizabeth, Brussels
Institut Medical Edith Cavell, Brussels

Laparoscopic surgery for endometriomas (892 cases)

• Age :	20-29 :	318
	30-39 :	418
	40-49 :	124
	50-55 :	32
Syptomes:	Infertility :	41%
	Pelvic pain :	24%
	pelvic pain+infertility	23%
	Asymptomatic :	12%

Karaman 2009

Endometrioma diameters

	Patients	%
< 2 cm	168	19
2-5 cm	493	55
6-10 cm	172	19
> 10 cm	59	6
Total	892	

Bilateral endometriomas: 128/892 14

Karaman 2009

Type of the surgery (892)

- Cystectomy : 785
- Ovariectomy : 91
- LH-LAVH : 16

Karaman 2009

Cumulatif pregnancy rate (524 patients)

- Stage 1-2 : P.R. 62%
- Stage 3-4 : 48%
- if r- AFS >70 : 0%

Karaman 2009

Laparoscopic Myomectomy before IVF Treatment



Myomas

- Submucosal Myomas
- Intramural
- Subserosal

Submucosal Myomas

- Improved pregnancy outcome after myomectomy

Pritts 2001

Subserosal Myomas

- Have no influence on pregnancy outcome compared to control group

Elder - Geva - 1998

Effects of Myomas on Fertility in patients undergoing assisted reproduction

- The aim is to evaluate the current data to understand the impact of **intramural leiomyomata** on pregnancy outcome in ART without **cavitary distortion**.

Benecke et al 2005

Patients Selection

- Pregnancy date on IVF
- Intramural myomas with no cavitary distortion
- Control group with no myomata

150 Articles were reviewed
Benecke et al 2005

Results

	Myoma Group	Control Group	Odds ratio (95% CI)
Implantation Rate	12.1% (143/1181)	20.96 (676/3224)	0.64 (0.52-080)
Pregnancy rate Per transfer	30.47 (160/525)	40.45 (661/1634)	0.72 (0.57-090)
Ongoing Pregnancy rate/transfer	26.75% (103/385)	34.94% (537/1537)	0.65 (0.50-0.85)

Benecke 2005

Impact of subserosal and intramural myomas (without endometrial cavity distortion) on the outcome of in IVF-ICSI (245 Patients)

- If myoma $\leq 4\text{cm}$, IVF-ICSI outcomes is similar to those without myomas
- However they recommended surgery, if myoma $\geq 4\text{cm}$

Oliveira et al 2004

Which method should be used to remove intramural myomata?

- Laparoscopic surgery
- Laparotomic microsurgery
- Robotic Laparoscopic Surgery

Laparoscopic Myomectomy

All Patients	315
Patients want to be pregnant	189
Pregnancy	157 (83%)
Miss carriage	19 (12%)
Delivery (23 VD, 103 C/S)	126 (80%)
Uterine rupture	0
On going pregnancy	12 (8%)

Y. Karaman 2010

CONCLUSION of MYOMAS

- Intramural myomata without intracavitary involvement have an impact on pregnancy outcome in ART and surgical removal must be considered especially in patients with previous failed ART cycles.
- Intramural myomata with intracavitary involvement has to be removed.
- Myomectomy can be performed easily by laparoscopic surgery in the hand of the well trained surgeons.
- We await in anticipation a **prospective randomized controlled trails** that assess the effect of the size and position of intramural myoma on fertility in ART



TUBAL SURGERY

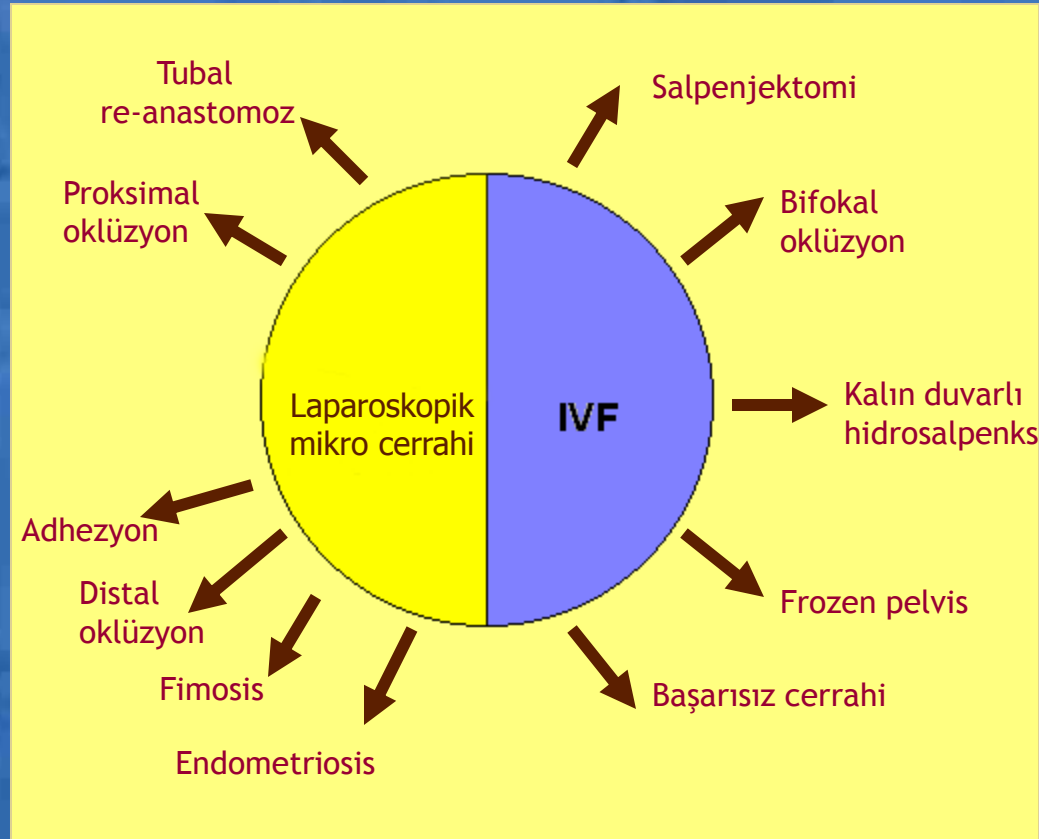
Tubal faktör

- İnfertil kadınlarda insidans: % 25-35
- > %50'den fazlasında etyoloji: PID
- Tubal hastalığın bölgesi tedavi açısından önemli
 - Oklüzyon (organik patoloji)
 - Obstrüksiyon (reversibl, irreversibl)
 - Proksimal (SIN=salpenjitis isthmica nodosum)
 - Orta kısım
 - Distal

Tubal infertilite'de tedavi

- Tubal cerrahi
- ART

Tubal lezyonlarda yaklaşım



Tubal Cerrahi

- Laparotomik makrocerrahi
- Laparatomik mikrocerrahi
- Laparoskopik mikrocerrahi
- Robotik laparoskopik mikrocerrahi

Laparoskopik tubal mikrocerrahi

- Trichips camera
 - Yeterli büyütme ve rezolüsyon
 - Mukozayı değerlendirme = x 25-45
 - Mikrosütür = x 10-15
 - Teleskop yaklaştırma (x 7 büyütme yapar)
- Mikro-cerrahi enstrümanları
- Sütür:
 - 7-0, 8-0 polipropilen-poliprovini

Tubal re-anastomoz endikasyonları

- Proksimal tıkanıklarda **tubal kanülasyonun başarısız kaldığı** durumlar
- Tubal sterilizasyon reversal
- Mid tubal tıkanıklık
- Ektopik gebelik tedavisi sonrası tubal oklüzyon
- Salpingitis isthmica nodosa

Koh CH. Laparoscopic microsurgical tubal anastomosis.
Endoscopic Surgery for Gynecologists. S: 176

Tubal cerrahi distal oklüzyon

- Laparoskopik adhezyolizis
- Laparoskopik salpingoneostomi
- Fimbrioplasti
- Salpenjectomi

Tubal cerrahide prognozu etkileyen faktörler

- Tubalardaki patolojinin derecesi ve yol açan etyolojik faktörler (Tbc.)
- HSG’de longitudinal mukuzal plilerin varlığı
- Salpingoskopik bulgular
- Tubal lezyonun yeri, unifokal-bifokal oluşu
- Yaş
- Operasyon sonrası tüplerin uzunluğu
- Ek patolojilerin varlığı (endometriosis vs.)
- Operasyonun başarısı (cerrahın deneyimi, kullanılan teknik)

Boer-Meisel Klasifikasyonu

- Grade 1
 - Mukoza normal, düzenli kıvrımlar
- Grade 2
 - Orta derecede mukozal değişiklik
 - Normal alanların arasında yer yer mukozanın azaldığı veya bulunmadığı alanların eşlik etmesi
- Grade 3
 - Mukozanın ileri düzeyde bozulması veya yok olması
 - İntratubal sineşinin bulunması

Laparoskopi (Distal tubal hastalık)

	N	Operasyon tipi	Takip süresi	Intrauterin e gebelik sayısı	Ektopik gebelik sayısı	Term gebelik sayısı
Fayez (1983)	14 19	Fimbrioplasti Salpingoneostomi	2 yıl 2 yıl	3(%21) 0(0)	2(%14) 2(%11)	3(%21) 0(0)
Dubuisson (1990)	31 34	Fimbrioplasti Salpingoneostomi	18 ay	8(%26) 10(%29)	3(%10) 1(3)	%23
Canis (1991)	87	Fimbrioplasti Salpingostomi	3 yıl	29 (%33)	6 (7)	
Dubuisson (1994)	81	Salpingostomi	3-60 ay	26 (%32)	4 (%5)	26 (%32)
Audebert (1998)	35	Fimbrioplasti	2-5 yıl	18 (%51)	8 (23)	13 (37)

Laparoskopik lazer cerrahisi 1990-2004

Tubal cerrahi

• Salpingoneostomi	235
• Salpingo-ovariolizis	1085
• Fimbrioplasti	1278
• Tubal re-anastomoz	36

Toplam 2634

CO₂ lazer laparoskopik cerrahi 1990-2004

	Hasta sayısı	İntra-uterin gebelik	Dış gebelik
Salpingoneostomy	235	66 (%28)	19 (%8)
Salpingo-ovariolizis	1085	629 (%58)	78 (%7)
Fimbrioplasti	1278	792 (%62)	64 (%5)
Tubal re-anastomoz	36	21 (%59)	2 (%6)
Total	2634	1508 (%57)	163(%6)

Karaman Y, 2005

The role of tubal reconstructive surgery in the era of assisted reproductive technologies

The Practice Committee of the American Society for Reproductive Medicine

Birmingham, Alabama

Tubal reconstructive surgery has fewer indications in the era of assisted reproductive technologies than in the past, but is still appropriate and effective treatment for properly selected individuals. (Fertil Steril® 2008;90:S250-3. ©2008 by American Society for Reproductive Medicine.)

SUMMARY

- Hysterosalpingography is a useful initial test for the evaluation of tubal patency, but laparoscopy may be necessary to stage pelvic disease accurately.
- The risks for ectopic pregnancy after reconstructive surgery (4% to 10%) and IVF (1% to 13%) are significant and comparable.
- Maternal age, number of children desired, coexisting infertility factors, risks for ectopic and multiple pregnancy, and treatment costs are the key variables to consider when advising couples on the relative advantages and disadvantages of surgical tubal reconstruction and IVF.
- IVF is the treatment of choice for older, reproductive-aged women with significant tubal pathology.
- IVF is the preferred treatment option for women with both proximal and distal tubal disease.
- The extent of tubal disease and pelvic pathology are important factors in determining the prognosis for success after surgical repair.
- Pregnancy outcomes after reversal of tubal sterilization relate to the type of sterilization procedure performed, the site of anastomosis, and postoperative tubal length.
- Selective salpingography or hysteroscopically directed procedures for tubal recanalization are useful methods to confirm the diagnosis of true proximal tubal occlusion.

Proflaktik salpinjektomi

- Bilateral veya unilateral hidrosalpinksin **IVF sonuçlarına olumsuz etki** yapabileceği pek çok çalışmada gösterilmiştir.

Nackley et al. Fertil Steril 1998, 69:373-384

Camus et al. Hum Reprod 1999, 14:1243-1249

- Retrograd akım ile uterin kaviteye akan hidrosalpinks sıvısının **direkt embryotoksik** olabileceği bildirilmiştir.

Mukherjee et al. Fertil Steril 1996, 66:851-853

Beyler et al. Hum Reprod 1997, 12:2724-2728

- Retrograd akım ile uterin kaviteye akan hidrosalpinks sıvısının **implantasyonu bozabileceği** bildirilmiştir.

Meyer et al. Hum Reprod 1997, 12:1393-1398

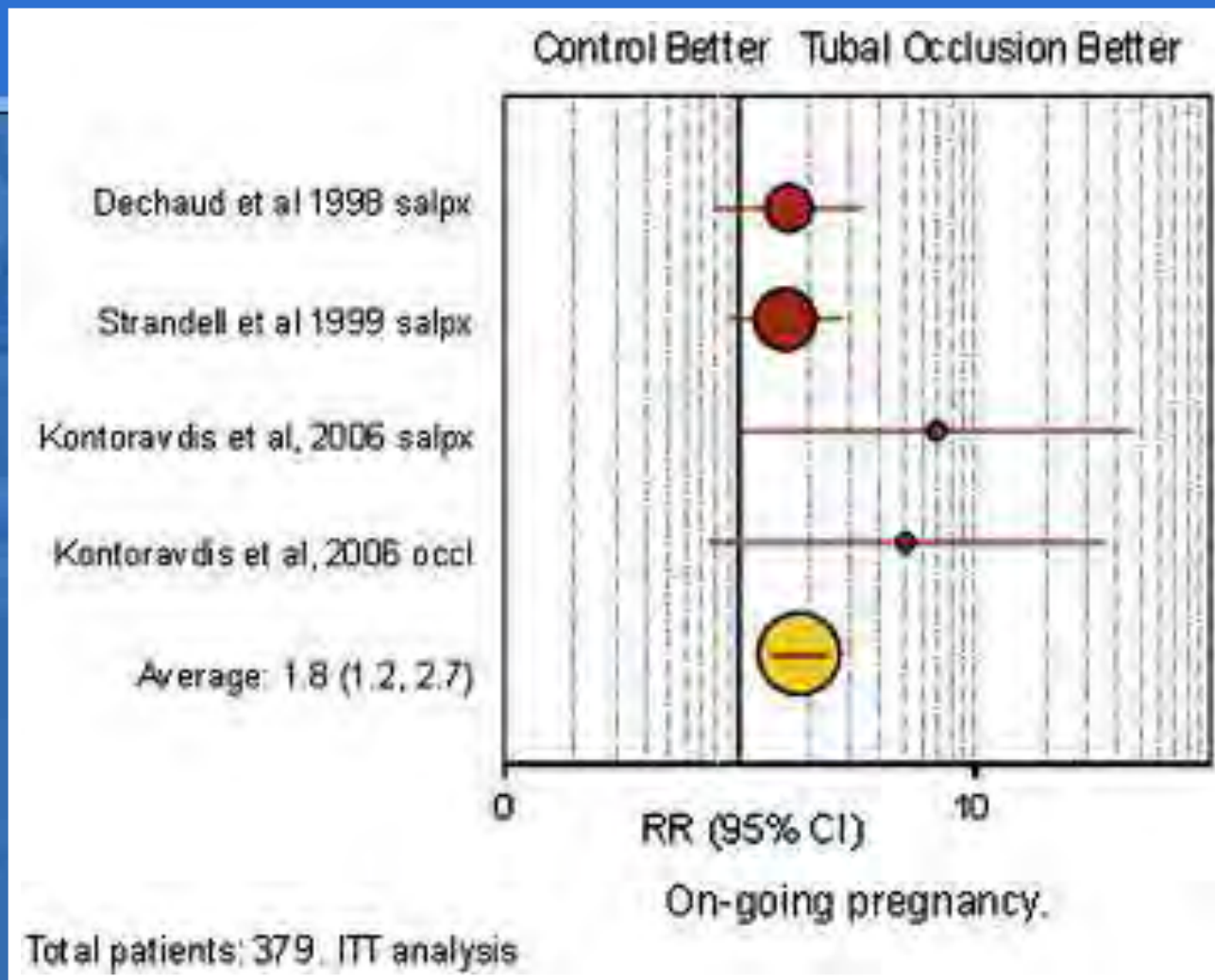
Salpingectomy for hydrosalpinx prior to in vitro fertilization

Practice Committee of the American Society for Reproductive Medicine in collaboration with The Society of Reproductive Surgeons

The American Society for Reproductive Medicine, Birmingham, Alabama

Salpingectomy for hydrosalpinges before in vitro fertilization increases the success rate. (Fertil Steril® 2008;90:S66–8. ©2008 by American Society for Reproductive Medicine.)

Figure 1



SUMMARY AND CONCLUSIONS

1. The live birth rate achieved with IVF among women with hydrosalpinges is approximately one half that observed in women without hydrosalpinges.
2. In women with hydrosalpinges, preliminary laparoscopic salpingectomy or proximal tubal occlusion improves subsequent pregnancy and live birth rates achieved with IVF. For every six women with hydrosalpinges, one more ongoing pregnancy will be achieved if salpingectomy or tubal occlusion is performed before IVF.
3. Data are insufficient to permit recommendations regarding the effectiveness of alternative treatments such as laparoscopic neosalpingostomy, transvaginal aspiration of hydrosalpingeal fluid, hysteroscopic tubal occlusion, or antibiotic treatment.

Tubal cerrahi

Kontr-endikasyonlar

- Frozen pelvis
- Strerilizasyon amacıyla geçirilmiş geniş tubal eksizyon (ampullo-infundibular)
- Yaygın intra-ampuller adhezyonlar (HSG, Falloposkopi, diagnostik LSK)
- Bilateral bifokal tubal hastalık
- Genital Tbc ve sekeli
- Başka infertilite faktörlerinin eşlik etmesi
- İleri yaş

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HYSTEROSCOPY



HYSTEROSCOPIC SURGERY

- Endometrial polyp
- Intrauterine synechiae
- Müllerian anomalies
- Myomas
- T-Y shape uterus

HYSTEROSCOPY before A.R.T. the Aims are:

- to RESTORE THE SIZE and SHAPE of UTERINE CAVITY
- Normal Endometrial function
- and
- Fertility

Recurrent implantation Failure

- Benign endometrial pathologies such as endometritis, endometrial hyperplasia, polyps, synechiae, leiomyomata, uterine Mullerian anomalies, *T-shaped uterus*, genetic abnormalities can influence implantation.
- Specifically, the impacts of intramural lesions without cavity distortion or myomas of <4 cm. on RIF remain controversial .
- Unfortunately hysteroscopy has not been widely adopted as a routine procedure before IVF.

Oliveira et al, 2004.

PATHOLOGIC FINDING in HYSTEROSCOPY before first trial of IVF - ET

	No of patients	Abnormal findings
DOLDI 2005	300	40%
HINCKLEY 2004	1000	38%

ABNORMAL FINDINGS	
Endometrial polyp	32%
Submucous fibroid	3%
Intrauterine adhesions	0,3%
Septum	0,3%
Polypoid endometrium	0,3%
Bicornuate uterus	0,3%

- HSG normal olan ≥ 2 IVF başarısızlığı olan 421 hastada yapılan HSK sonuçları:

- normal: %73.3



- anormal: %26.4

(%15 endometrial polip)

Demirel A, Gurgan T, 2004

- HYSTEROSCOPY, as a routine examinations, should be performed **before the first IVF - ET cycle in all patients**
- THEY FOUND a statistically significant difference in **pregnancy rate** between women who performed hysteroscopy before IVF - ET and who did not performed it.

DOLDI 2005, HINCKLEY 2003

Postoperative adhesiolysis therapy for intrauterine adhesions (Asherman's syndrome)

Fertil Steril. 2008

James K. Robinson, M.D., M.S.,^a Liza M. Swedarsky Colimon, M.D.,^b and Keith B. Isaacson, M.D.^a

^a Minimally Invasive Gynecologic Surgery Center, Newton-Wellesley Hospital, Newton; and ^b Brigham and Women's Hospital, Department of Obstetrics and Gynecology, Boston, Massachusetts

- 24 hasta: önce keskin (primer tedavi), sonra seri künt adhezyolizis (1-3 haftalık intervallerle) + (Est+Prog) uygulanmış.
- Sonuç:
 - %95 hastada menst. kan akımında düzelme
 - %92 dismenorede iyileşme
 - %46 hastada ongoing gebelik veya canlı doğum

HSK adhezyolizis sonrası önleyici tedaviler

- Seri histeroskopik adhezyolizis
- IUD koyulması
- Estro-progestatif tedavi
- Bariyer yöntemler (ACP jel, seprafilm)
- İntrakaviter balon uygulaması (Foley sonda)

- Abortuslar sonrası kaviteye ve servikal kanala **seprafilm**
- HSK sonrası kaviteye **auto-crosslinked hyaluronic acid (ACP) gel**

“postop adhezyon oluşumunu azaltmaktadır”

Guida M. et al., Hum Reprod, 2004

Tsapanos VS. et al., J Biomed Mater Res, 2002

Submüköz myom

- G0: myomun tamamı kavite içinde
- G1: >%50 kavite içinde
- G2: <%50 kavite içinde

Infertilite ve myom

- Fertility outcomes are decreased in women with submucosal fibroids, and removal seems to confer benefit

Pritts EA et al., Fertil Steril 2009

- fertility rates appeared to increase after hysteroscopic myomectomy of type 0 and type I myomas

Shokeir T et al., Fertil Steril

2009

The destiny of myomas: should we treat small (<1.5 cm) submucous myomas in women of reproductive age?

- The real endometrial surface and volume occupied by a submucous myoma
- the high potential of a small myoma to grow during the reproductive age
- its negative impact on reproduction
- malignancy potential

A "wait-and-see" approach is no longer acceptable in women of reproductive age with small submucous myomas, especially if the lesion could be easily and safely removed in an outpatient setting with minimal patient's discomfort.

Bettocchi S et al., Fertil Steril, 2008

- 'Resectoscopic slicing' still represents the 'gold standard' technique for treating fibroids G0, even if several other effective techniques including ablation by
 - neodymium-yttrium-aluminum-garnet laser
 - morcellation
 - office myomectomy have been proposed

Di Spiezio SA et al., Human Reprod Update, 2008

Uterin septum

- 21 women who underwent vaginal and uterine septum resection were compared with those of 15 untreated women
- the rate of term delivery significantly increased ($P<0.05$), and the rate of spontaneous abortion decreased ($P<0.05$) in the treatment group

Lin K et al., Int J Gynaecol Obstet, 2009

- The frequencies of unrecognized uterine pathology revealed by hysteroscopy are 18-50% and 40-43% in patients undergoing IVF with or without RIF, respectively
- Endometrial polyps may be associated with increased miscarriage rates
- Implantation rates are decreased in patients with submucous or intramural fibroids with distorted uterine cavity
- There is controversy on the impact of uterine septum less than 1 cm length on pregnancy outcome in IVF cycles
- pregnancy rates appear to be increased when hysteroscopy is performed after failed IVF cycles

Bozdağ G et al., Reprod Biomed Online, 2008

- 44 septate uterus and otherwise unexplained infertility (group A), and 132 women with unexplained infertility (group B)
- Pregnancy rate (38.6% vs. 20.4%) and live birth rate (34.1% and 18.9%) were significantly higher in group A than in group B
- Hysteroscopic resection of the septum improves fecundity of women with septate uterus and otherwise unexplained infertility

Mollo A et al., Fertil Steril, 2008

- **small partial septum** (78.9% abortion before resection vs. 23.7% in the normal controls, **OR 12.08**)
- **large septum** (83.3% abortion before resection vs. 16.7% in normal controls, **OR 25.00**)
- Similar to a large uterine septum, a small partial uterine septum is an important and hysteroscopically preventable risk factor for spontaneous abortion in pregnancies after IVF and ICSI.

Treatment

- Hysteroscopic metroplasty ± cerclage

IUD + hormonal support + intracavitary balloon

- Assisted reproductive techniques

these patients have a similar number of oocytes
retrieved, fertilized and embryos replaced as patients
with tubal factor infertility

reduce the number of embryos transferred to avoid
the complication multiple pregnancy in the already
compromised uterus

- Anticoagulant therapy (low dose aspirin,
nadroparine calcium....)

T-Shaped Uterus

- It should be noted that classic small T-shaped uterine cavity also has been found in women who were not exposed to DES in utero
 - congenital mullerian malformation
 - uterine infection
 - uterine instrumentation

Rennell CL. AJR Am J Roentgenol 1979

HSG

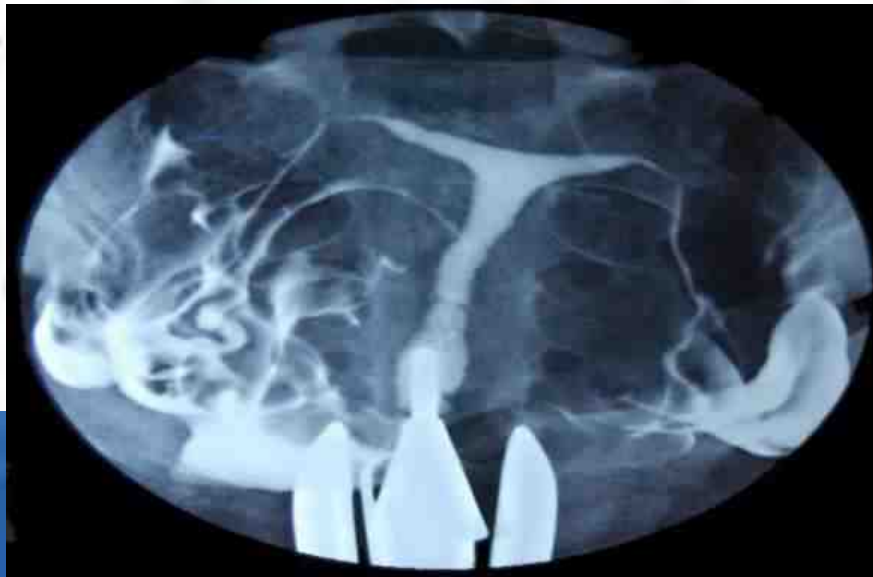
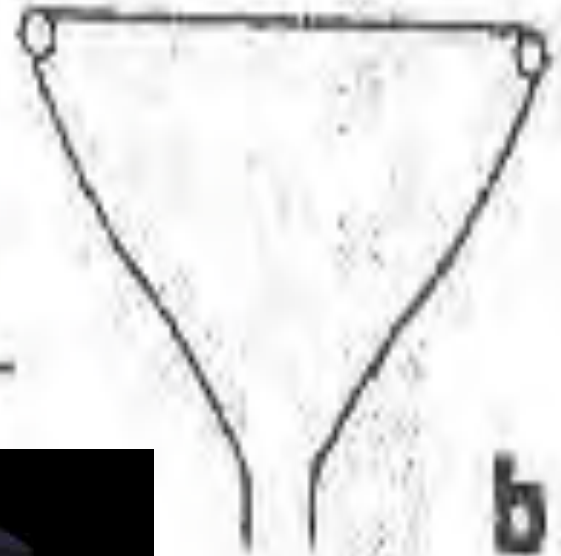
T-Shape



Cylindrical uterine cavity
Bulging uterine side walls



Triangular, symmetric cavity



HSG

T-Shape Post-op



IUD + hormonal support + intracavitary balloon

- Estradiol hemihydrate (8 mg/day) 0 → 6 weeks of the procedure
- Lynestrenol (5 mg/day) → 4 6 weeks
- IUD (multiload) → until 4th week
- Intracavitary balloon → on the 4th week

Intracavitary balloon

- Foley catheter (12f) total of 6 cc serum physiologic for 1 minute after extraction of the IUD



HSG

T-Shape Post-op



T - Shaped Uterus

- Eight women (aged 27-43) with reproductive dysfunction who were diagnosed by hysterosalpingogram and hysteroscopy as having a 'T-shaped' uterus were operated by hysteroscopy.
- 7 of the 8 women showed 4 term pregnancies in 3 women, 1 ectopic pregnancy, and no abortions.

Katz Z. Ben Arie A. Insler V. Beneficial effect of hysteroscopic metroplasty on the reproductive outcome in a T Shaped Uterus. Gynecol Obstet Invest 1996.

BENEFICIAL EFFECT of HYSTEROSCOPIC METROPLASTY on the REPRODUCTIVE OUTCOME in a “T-Shaped” uterus

- 8 patients, 10 spontaneous abortions.
1 ectopic pregnancy
- AFTER OPERATION
 - 4 term pregnancies
 - 1 ectopic pregnancy
 - No abortion

KATZ et al. GYNEC - OBST. INVEST. 1996

Cervical cerclage

- DES exposed cervix may be predisposed to incompetency because of an increase in the ratio of smooth muscle to collagen, structural changes in collagen fibrils and decreased elastin content.
- Although some uncontrolled studies advocating prophylactic cerclage, most authors consider to limit this procedure to standard clinical indications

Michaels et al Obstet Gynecol 1989

Levine et al Am J Obstet Gynecol 1993

Hysteroscopic metroplasty in DES exposed uterus and subsequent reproductive performance

- 8 patients
- Prior to metroplasty
 - recurrent pregnancy loss (6 patients)
 - primary infertility (2 patients)
- After metroplasty
 - 3 term deliveries in 3 women

Hysteroscopic metroplasty in DES-exposed and hypoplastic uterus: a report on 24 cases

- It is an effective procedure in the case of recurrent abortion (88% $\longrightarrow$ 12.5%)
- It improves the rate of term delivery (3% $\longrightarrow$ 87.5%)

Garbin et al. Human Reproduction 1998

Conclusion

- Hysteroscopic metroplasty for T-Y shaped uterus seems to be an operation that **improves the rate of live birth rate** with a history of
 - primary infertility
 - recurrent abortion
 - preterm delivery
- in order to evaluate the efficiency of this technique, **randomised trials** should be undertaken with larger series

Sonuç -1

Hastaya en uygun, en başarılı ve cost-effective tedavi seçenekleri sunulmalıdır.

Bu kararı verirken aşağıdaki faktörler göz önünde tutulmalıdır;

- Kadın yaşı
- Infertilite süresi
- Önceki tedaviler ve uygulamalar
- Ek infertilite nedenlerinin varlığı
- Mevcut patolojinin türü ve derecesi
- Mevcut patolojilerin daha sonraki tedavi ve uygulamalara pozitif/negatif/ etkileri

Sonuç - 2

- İnfertiliteye yol açan tubal patolojilerin büyük bir kısmı laparoskopik cerrahi ile tedavi edilebilmektedir.
- Operasyonlar mümkünse infertilite cerrahisi ve laparoskopik cerrahi konusunda deneyimli ekipler tarafından yapılmalıdır.
- Deneyimli ekipler tarafından yapıldığı takdirde, tubal cerrahi **iyi seçilmiş hastalarda çok iyi sonuçlar** vermektedir.
- Laparoskopik cerrahi için **uygun olmayan veya kötü prognoz** taşıyan hastalar zaman kaybetmeden **direkt IVF'e** yönlendirilmelidir.

Sonuç - 3

Laparoskopik tubal cerrahi için

- Hasta seçimi iyi yapılmalı, <35 yaş olmalı
- Bifokal tübal patoloji olmamalı
- Laparoskopik mikrocerrahi için yeterli enstrümantasyon ve teknik alt yapı bulunmalı
- Laparoskopik cerrahi ve klasik tubal mikrocerrahi konusunda cerrahın yeterli deneyim ve becerisinin olması gerekir.

Sonuç - 4

- Anatomik distorsiyonların yol açtığı infertilite olgularında IVF ve endoskopik cerrahi birbirine rakip değil, aksine birbirini tamamlayıcı tedavilerdir.
- IVF endikasyonu konulan hastalarda da, başarıyı etkileyen en önemli faktörlerden birisi, tedavi öncesi intra-ekstrauterin faktörlerin endoskopik cerrahi ile ne kadar düzeltildiğine bağlıdır.