



ÜREME TIBBİ ve CERRAHİSİ DERNEĞİ



Tubal İnfertilite Tedavi ve Yönetimi

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Ankara Üniversitesi Tıp Fakültesi

İnfertil çifte yaklaşım

- Etyopatogenez
 - Erkek faktör
 - “Tubal faktör”
 - Endometriozis
 - PCOS ve diğer anovulasyon nedenleri
 - Anatomik faktörler
 - Açıklanamayan infertilite
 - Yaş

Tubal İnfertilite Risk Faktörleri

- Enfeksiyon (PID, rüptüre apandisit)
- Endometriosis
- Pelvik cerrahi, pelvik adezyon
- Konjenital anomaliler
- Risk faktörü yok

Tubal İnfertilite Etyoloji

- Risk faktörü olmayan hastalarda klamidya antikorları negatif ise tubal patoloji olma olasılığı <%15
- Klamidya pnömonia varlığında yanlış pozitif sonuç !

Tubal Hastalık Sınıflandırması

Minör	Orta Şiddette	Şiddetli
Proksimal tubal oklüzyon Tubal fibrosis yok	Tek taraflı tubal hasar	İki taraflı ciddi tubal hasar
Distal tubal oklüzyon Tubal distansiyon yok	Sınırlı tubal-overyan dens adezyon	Yaygın tubal fibrosis
HSG ve salpingoskopide sağlam mukoza		Anormal mukozal görünüm
Filmi peritubal -overyan adezyonlar		Yaygın dens adezyon
		Tubal distansiyon >1.5 cm
		Bilateral oklüzyon

Tanı

- HSG
- Salin infüzyon sonografi
- HSG köpük sonografi
- Laparoskopik kromopertubasyon
- Hidrolaparoskopi ve kromotubasyon

HSG

- Kolay ulaşılabilir
- Oklüzyon yerini gösterir
- Uterin kavite ile ilişkili bilgi
- Peritubal adezyon
- Tubal hasar ile ilgili bilgi
- Laparoskopji ile uyum %70

- Ağrı
- Radyasyon



HSG

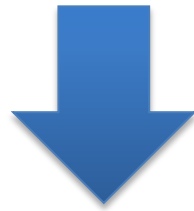
- Sensitivite %84
- Spesifisite %74

İdeal Kontrast Madde

	Yağda çözünen	Suda çözünen
Uterin görüntüleme	Keskin	Daha az keskin
Ampuller ruga	Zor belirlenir	Kolay belirlenir
Vizkozite	Visköz	Az vizköz
Absorbsiyon	Aylar	Saatler
Ağrı	Minimal	Belirgin
Granüloma oluşumu	Az	Çok az
Embolizm	Anaflaksi riski az	Yok
HSG sonrası gebelik	Artar	Değişim yok

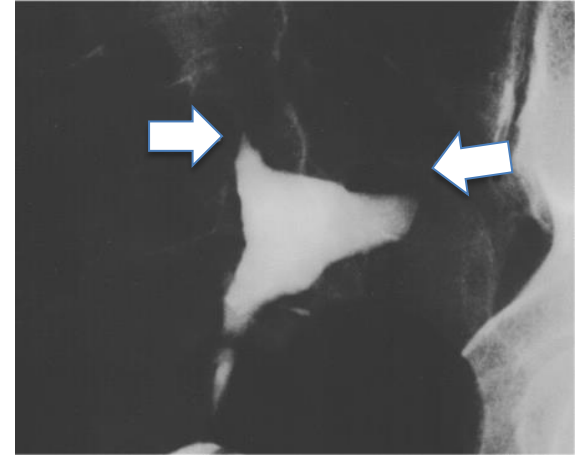
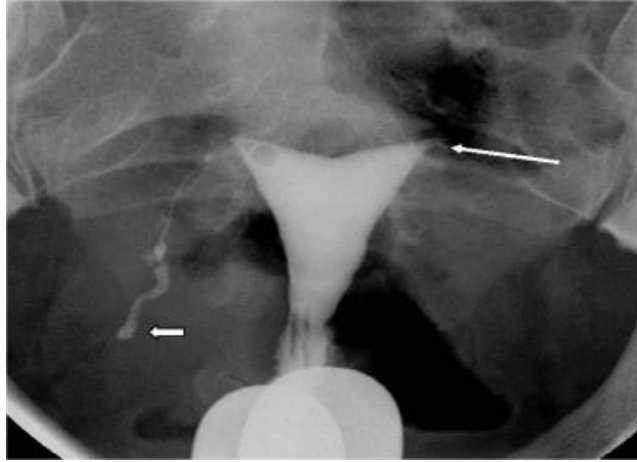
Kontraendikasyon

- Gebelik
- Akut PID
- İyot allerjisi



- HSG sonrası PID riski %1-3.
 - Profilaktik antibiyotik - tetrasiklin

HSG



■ Proksimal tubal oklüzyon

- Tubal hastalıkların 10% -25%'i
- HSG'de izlenen PTO'ların 42% -95%'inde gerçek tıkanıklık yoktur.
- Spazm ?

Proksimal Tubal Oklüzyon

- Fibrosis , SIN
- Endometriozis
- Kornual polipler
- Amorf materyal
- Visköz sekresyonlar
- Stromal ödem



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ORIGINAL ARTICLE

The safety and acceptability of saline infusion sonography versus hysterosalpingography for evaluation of tubal patency in infertile women



Mohamed Rezk ^{a,*}, Mohamed Shawky ^b

Table 4 Test performance parameters of the screening tests.

Screening test	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)	Accuracy (95% CI)	Chi square	<i>P</i> value
SIS	52%	95%	79%	84%	83%	0.91	> 0.05
HSG	38%	96%	79%	80%	80%		

Table 5 Adverse effects of the screening tests.

	HSG	SIS	Chi square	P value
Pain requiring analgesia	72	47	12.78	< 0.001
Fever	12	11	0.209	> 0.05
Shivering	11	10	0.570	> 0.05
Syncope	19	9	18.75	< 0.001
Cervical lacerations	30	5	21.64	< 0.001

Table 6 Patient acceptability of the screening tests.

	HSG	SIS	Chi square	P value
Overall discomfort				
1. Moderate/high/extreme	35	13	4.76	<0.05
2. None or slight	69	91		
Overall satisfaction				
1. Very or somewhat satisfied	78	96	4.501	<0.05
2. Neutral or somewhat not satisfied	26	8		
Would recommend this method to other women				
1. Highly or somewhat agree	70	86	3.16	>0.05
2. Neutral or somewhat disagree	34	18		

The Use of a New Gel Foam for the Evaluation of Tubal Patency

Dominique Van Schoubroeck Thierry Van den Bosch Christel Meuleman
Carla Tomassetti Thomas D'Hooghe Dirk Timmerman

Department of Obstetrics and Gynecology, University Hospitals Leuven, Leuven, Belgium

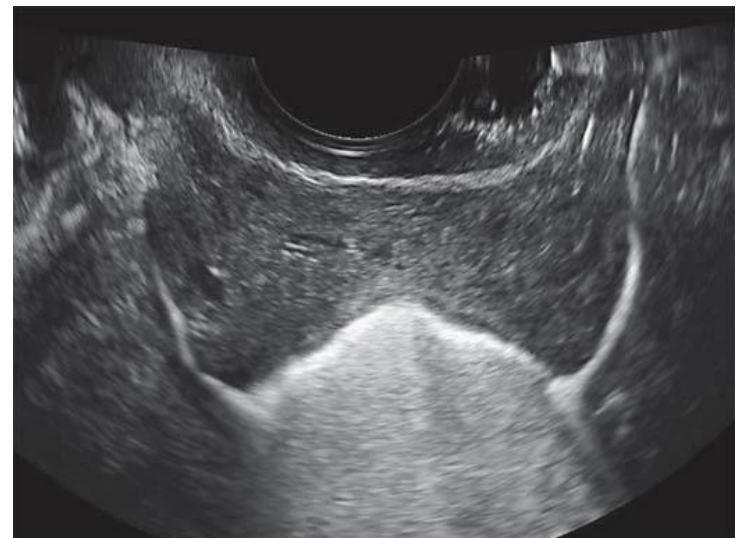
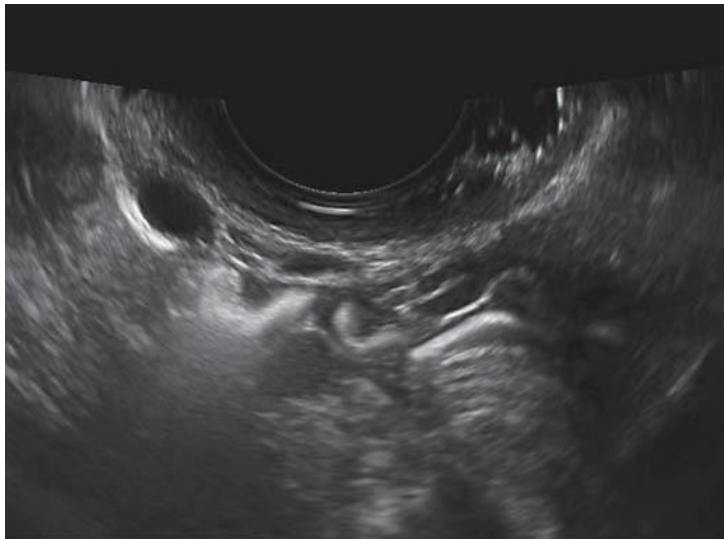
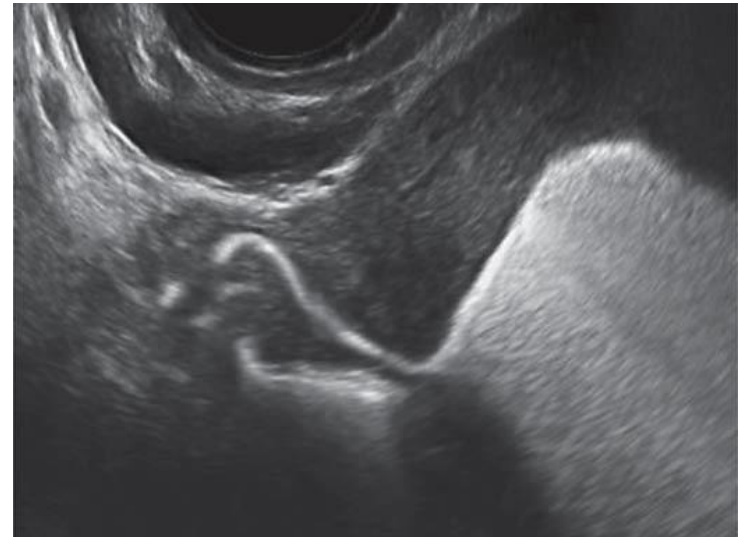


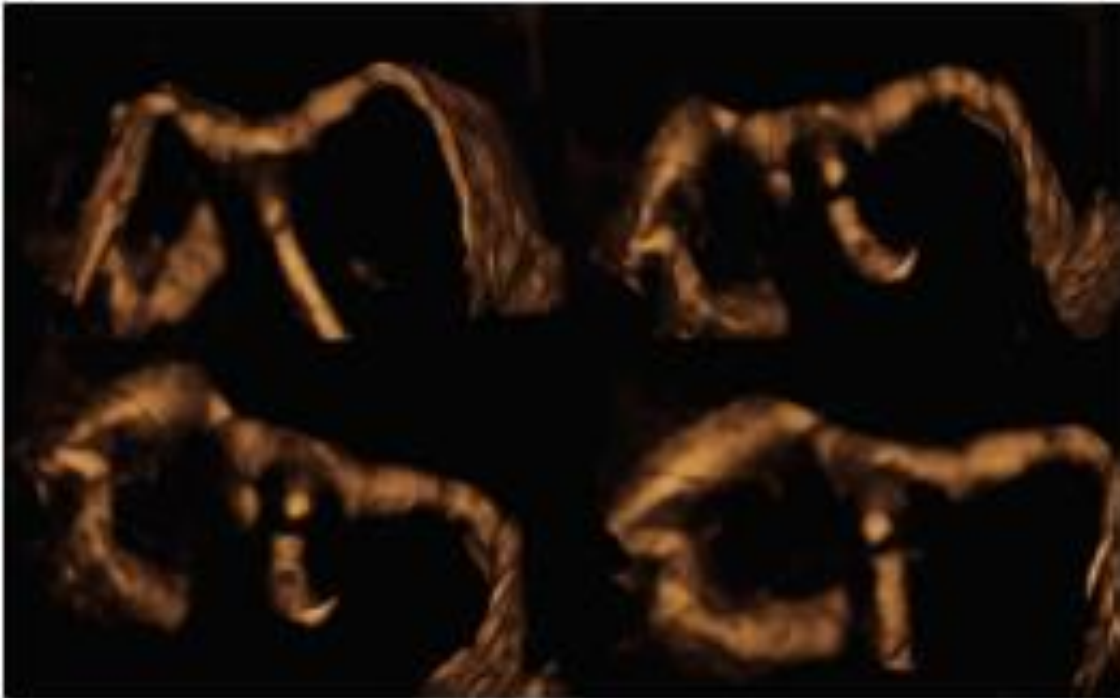
Table 1. Overview of the 4 patients who underwent X-ray HSG, HyFoSy and laparoscopic chromopertubation

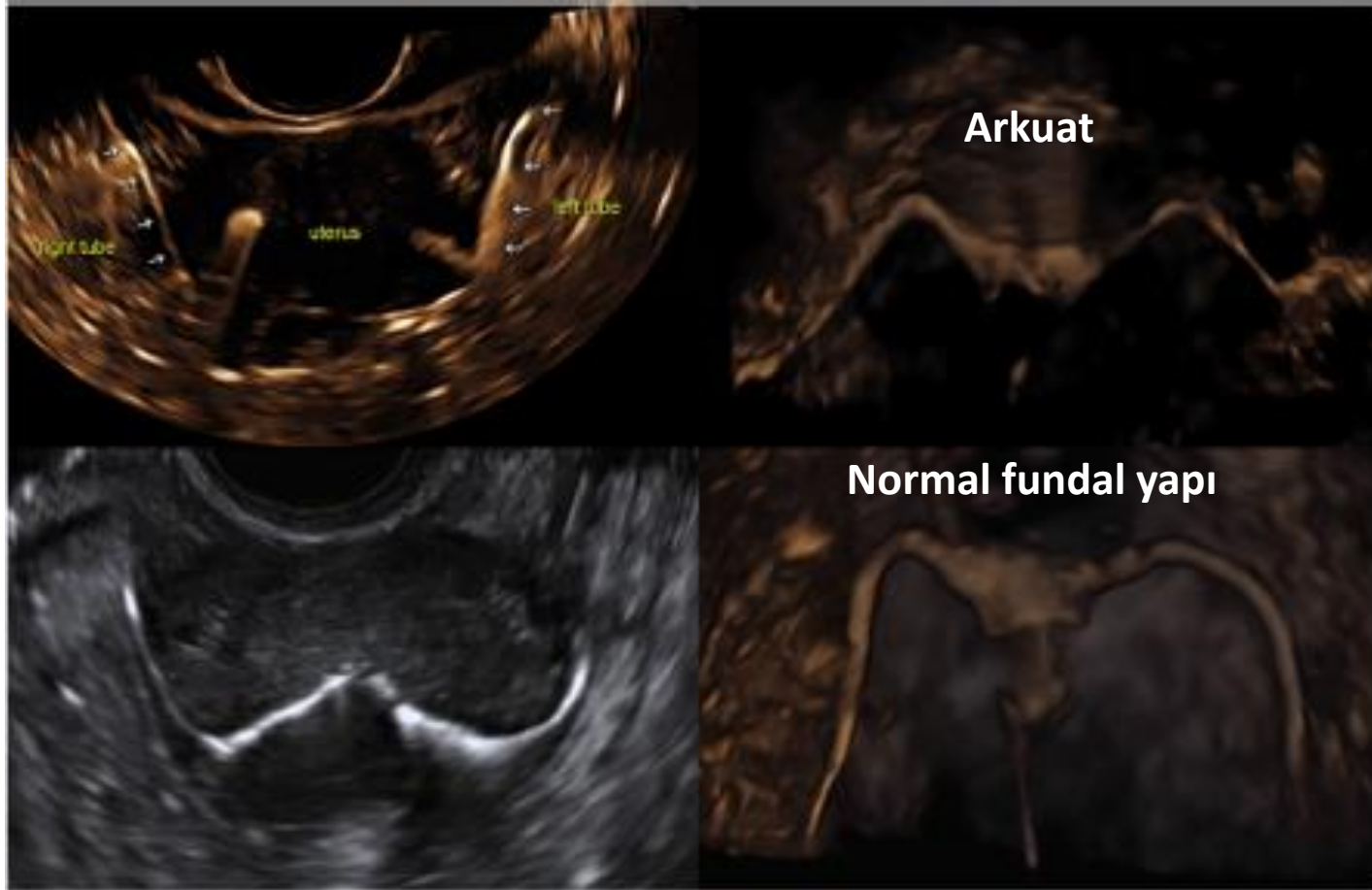
Case	Fallopian tube	HSG	HyFoSy	Lps chromo
1	left right	patent patent	patent patent	patent patent
2	left right	failed ¹ failed ¹	patent patent	patent patent
3	left right	blocked blocked	blocked patent	blocked patent
4	left right	patent blocked	patent patent	patent patent

Original Article

Three-Dimensional Hysterosalpingo Contrast Sonography with Gel Foam: Methodology and Feasibility to Obtain 3-Dimensional Volumes of Tubal Shape

Caterina Exacoustos, MD, PhD, Alessandra Pizzo, MD, Lucia Lazzeri, MD, PhD, Adalgisa Pietropolli, MD, Emilio Piccione, MD, and Errico Zupi, MD*





Laparoskopi

- Altın standart



Tedavi

- Hastanın yaşı
- Over rezervi
- Sperm analizi
- Daha önceki fertilite durumu
- Tubal hastalığın yeri ve şiddeti
- Diğer infertilite faktörlerinin varlığı
- Mikrocerrahi deneyimi
- IVF lab başarısı

Tedavi

- Cerrahi
 - Tubal mikrocerrahi
 - Tubokornual anastomoz
 - Neosalpingostomi, fimbrioplasti
 - Salpenjektomi
 - Laparoskopik adezyolizis
- Tubal kanülasyon
- IVF
- IUI (tek taraflı tıkanıklık)

	Cerrahi	IVF
Başarı	<ul style="list-style-type: none">• Siklus başına	<ul style="list-style-type: none">• Hasta başına
Dezavantajlar	<ul style="list-style-type: none">• Yüksek deneyim gerekir• Cerrahi risk• Yüksek ektopik gebelik riski	<ul style="list-style-type: none">• Hiperstimulasyon• Kötü neonatal ve perinatal sonuçlar• Çoğul gebelik• Uzun takipler
Avantajlar	<ul style="list-style-type: none">• Ek tedavi ve takip gerekli değil• Minimal invazif	<ul style="list-style-type: none">• Sonuçlar genel olarak tutarlı (%32 canlı doğum)

Tek Taraflı PTO vs. Tek Taraflı Distal TO

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DOI: 10.3109/01443615.2013.853030

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healthcare

OBSTETRICS

Impact of unilateral tubal blockage diagnosed by hysterosalpingography on the success rate of treatment with controlled ovarian stimulation and intrauterine insemination

B. Berker¹, Y. E. Şükür¹, K. Kahraman¹, C. S. Atabekoğlu¹, M. Sönmezer¹, B. Özmen¹ & C. Ateş²

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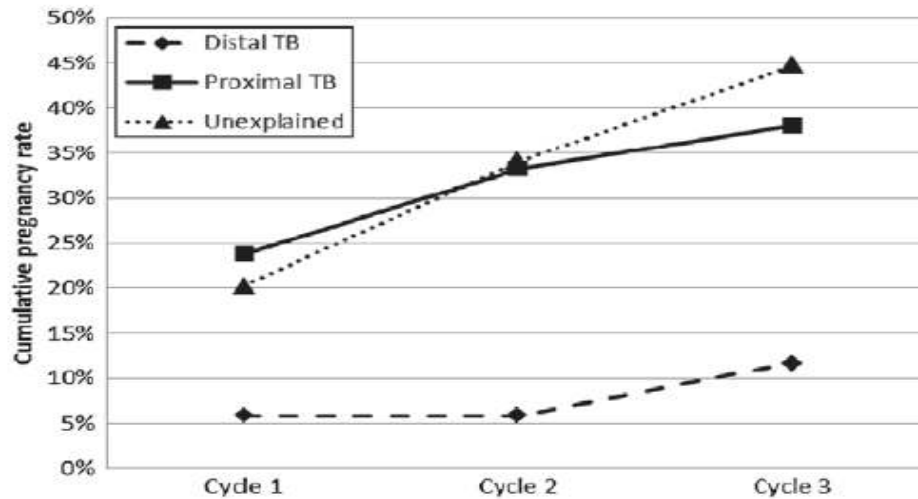


Figure 2. Cumulative pregnancy rates in distal unilateral tubal blockage, proximal unilateral tubal blockage and unexplained infertility.



ELSEVIER



Original Article

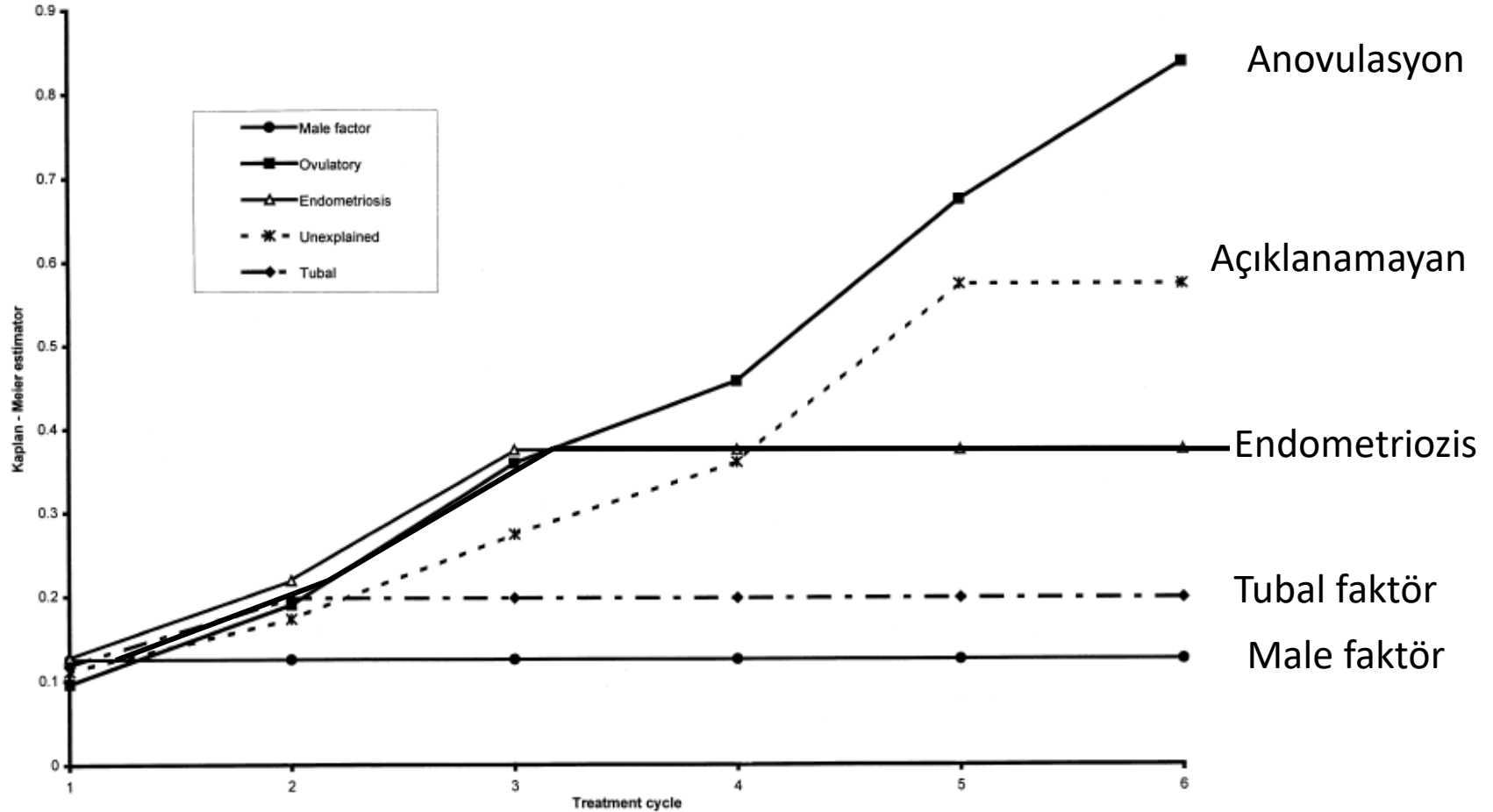
Treatment of infertile women with unilateral tubal occlusion by intrauterine insemination and ovarian stimulation

Ming-Huei Lin^{a,b,d,*}, Yuh-Ming Hwu^{a,b,c}, Shyr-Yeu Lin^a, Robert Kuo-Kuang Lee^{a,d,e}

Clinical outcomes	Unilateral tubal occlusion (<i>n</i> = 133)	Unexplained infertility (<i>n</i> = 570)	<i>p</i>
Days of ovarian stimulation	10.1 ± 2.4	9.8 ± 2.3	NS
Total dose of gonadotropins (IU)	535 ± 252	528 ± 234	NS
Number of follicles (≥16 mm)	2.7 ± 1.6	2.8 ± 1.4	NS
Clinical pregnancy rate (%)	17.3 (23/133)	18.9 (108/570)	NS
Pregnancy rate of proximal tubal occlusion (%)	21.7 (15/69) ^a		
Pregnancy rate of mid-distal tubal occlusion (%)	12.5 (8/64) ^b		

KOH -IUI

Kümülatif gebelik oranları



Tubal kanülasyon

- HSG ile bilateral PTO izlenen 98 hasta
 - 14 hasta \Rightarrow iki taraflı tüpler açık
 - 12 hasta \Rightarrow tek taraflı açık,
 - 72 hasta \Rightarrow tıkanıklık tekrar izlenmiş
- Tubal kanülasyon sonrası
 - %34.5 \Rightarrow bilateral tubalar açık
 - %61.1 \Rightarrow en az bir tuba açık
 - 24 aylık takipte 23 gebelik.

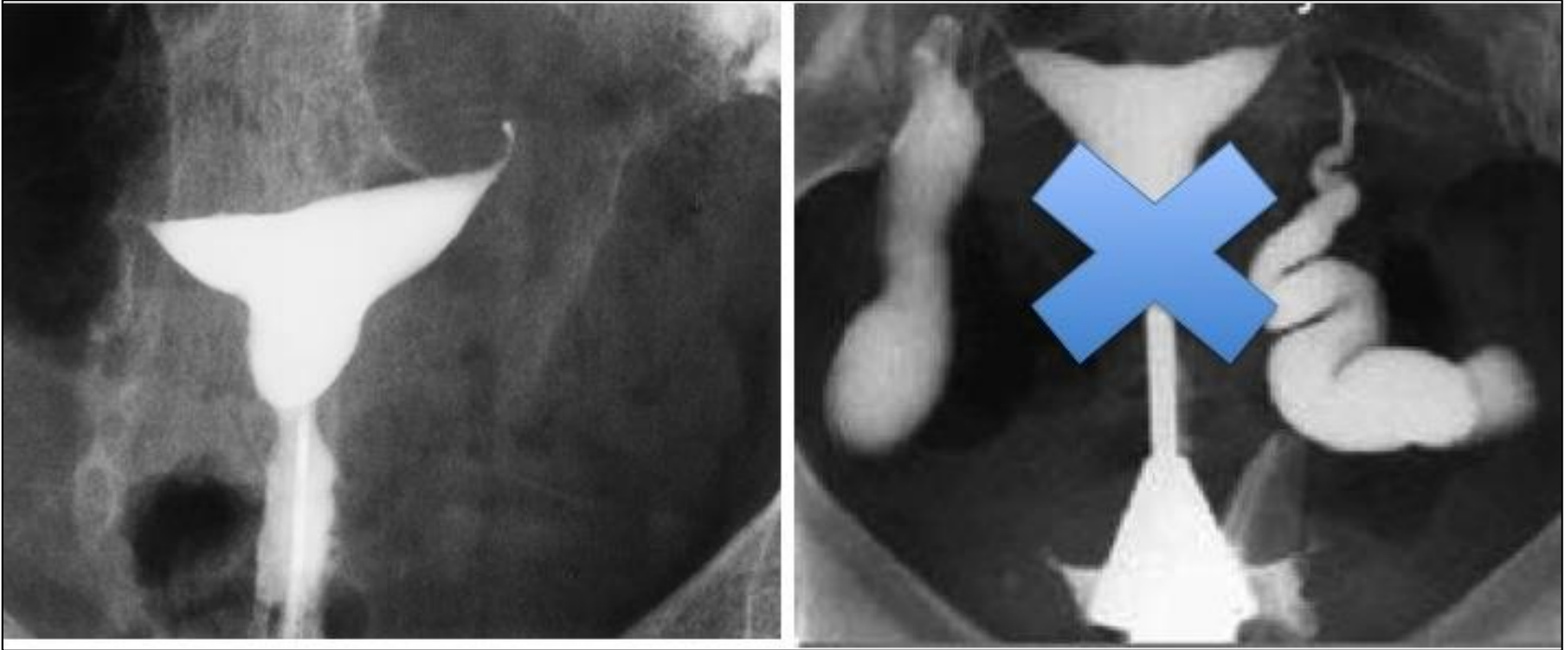


Tubal Kanülasyon - Metaanaliz

Bilateral tubal oklüzyon

- Komplet açılma → %85
- Tüpleri açılan hastalarda gebelik → %50
- Açılan tüplerin kapanma oranı → 1/3
- Tubal perforasyon → %3-11

Proksimal Tubal Okluzyon vs. Distal Tubal Oklüzyon



- Distal tubal okluzyon tubal kanülasyon ile tedavi edilemez

Tubal Kanülasyon vs. Mikrocerrahi

Comparison of pregnancy rates and outcomes after various techniques.

Studies	No. patients	Pregnancy (%) ^a	SAB (%) ^a	Ectopic (%) ^a	Ongoing (%) ^a
Microsurgical (n = 5)	175	58.9 (51.2–75)	6.8 (0–56)	12.6 (0–25)	47.4 (37.5–55)
Hysteroscopic (n = 4)	133	48.9 (29–71.4)	13.8 (0–6.7)	9.2 (0–5.9)	48.9 (29–57)
Fluoroscopic (n = 9)	482	21.4 (6.3–55)	17.5 (2.1–7.8)	12.6 (0–7.8)	15.6 (8.7–40)

Note: Reproduced from Honore et al. (1). SAB = spontaneous abortion.

^a Values are median (range).

Practice Committee of the ASRM. Tubal surgery. *Fertil Steril* 2015.

Mikrocerrahi ile Tubokornual Anastomoz

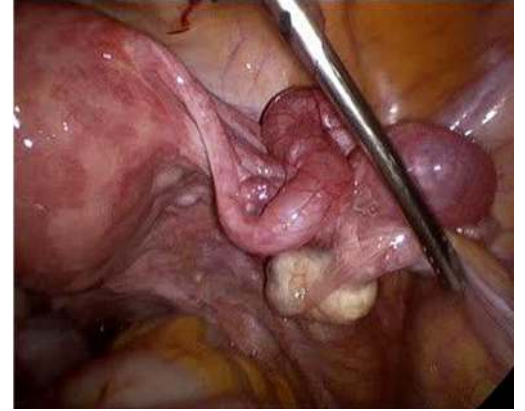
- Canlı doğum oranları
 - 1. yıl → %27
 - 2.yıl → %47
 - 3.yıl → %53
 - Kümülatif gebelik → %49
 - Ektopik gebelik → %4

Patton PE, Fertil Steril 1987
Marana R, Int J Fertil 1998

Tubal Rekonstrüktif Cerrahi vs. IVF

- Sonuçlar benzer
- Cerrahi ile sonuçlar kalıcı
- Kesin tanı imkanı sağlar
- Ovulasyon indüksiyonu komplikasyonları yoktur
- Adezyon ve hasta durumu dikkate alınarak avantajlı olabilir.

Distal Tubal Oklüzyon



- Mikrocerrahi ile salpingoneostomi (L/T) kümülatif gebelik %33 (yıl)
 - İntrauterin %77
 - Ektopik %23
 - Abortus %15
- Mikrocerrahi ile %28,9 L/S ile %30.9 gebelik
- Hafif tıkanıklıkta mikro cerrahi %32,8 L/S ile %39,5

Distal Tubal Oklüzyon

Hafif olgular → iyi prognoz

- Filmi adneksiyel adezyonlar
- Hafif dilate (<1.5-3.0 cm), ince duvarlı, esnek tüpler
- Mukozal katlantıları korunmuş sulu endosalpinks



- Adezyolizis sonrası 12 ayda gebelik oranları → %40
- Tedavi edilmemiş grupta gebelik oranları → %8

Periadneksiyal adezyon

- Laparoskopik salpingoovaryolizis sonrası gebelik oranı %51-62
- Ektopik gebelik oranı %5-%8
- Tubal mukoza sağlam ise gebelik oranı %70 (%80 mukoza sağlam)

Distal Tubal Oklüzyon

Laparoskopik neosalpingostomi ve fimbrioplasti

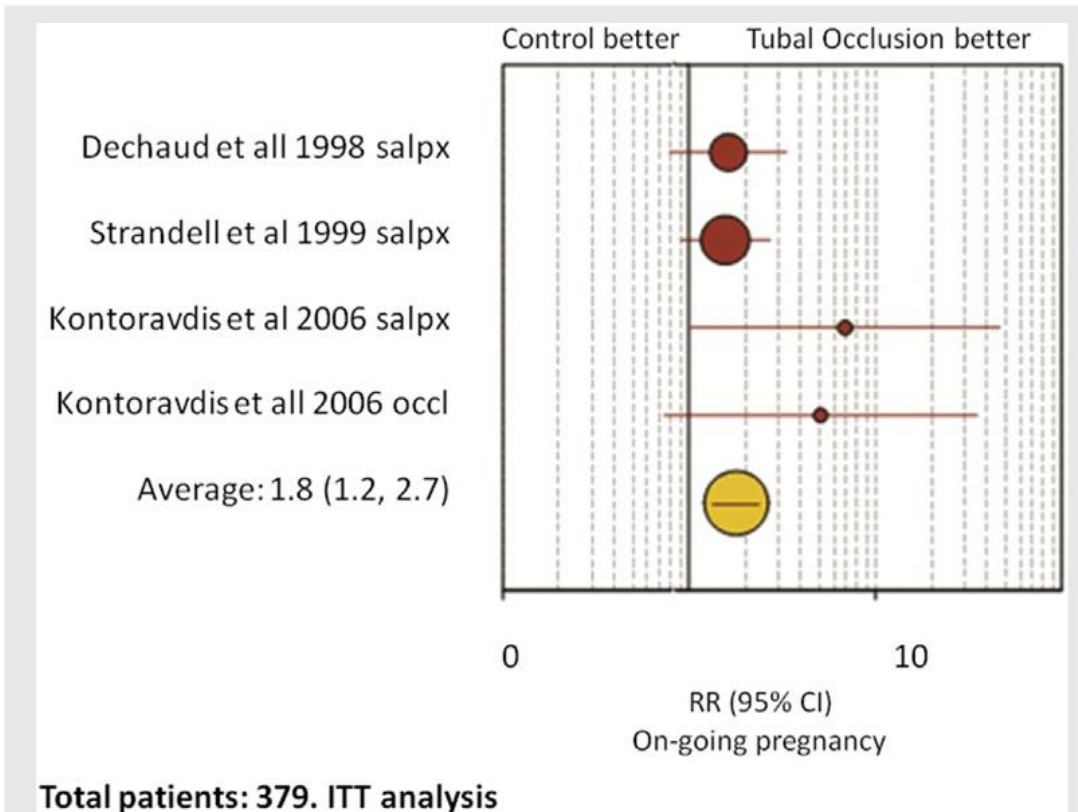
- Hafif vakalar
 - Gebelik %58-77
 - Ektopik gebelik % 2-8

- Şiddetli vakalar
 - Gebelik %0-22
 - Ektopik gebelik 0-17

Distal Tubal Oklüzyon

- DTO da normal mukoza var ise (%35-45) bu hastalarda gebelik oranı %65
- **Mukoza hasarlı ise en iyi yaklaşım salpenjektomi**

Hidrosalpenks ve IVF



Effect of treating hydrosalpinges before IVF. CI = confidence interval; RR = relative risk; ITT = intention to treat; salpx = salpinx; occl = occluded

Practice Committee of the ASRM. Tubal surgery. Fertil Steril 2015.

Spontaneous intrauterine pregnancy after unilateral placement of tubal occlusive microinsert

Kenan Omurtag, M.D., Samuel Pauli, M.D., and Donna Session, M.D.

Department of Gynecology and Obstetrics, Emory University School of Medicine, Atlanta, Georgia

TABLE 1

Women undergoing IVF-ET with Essure microinsert in place.

Study	Hydrosalpinx present?	No. of women	Pregnant	Delivered
(10)	Yes	1	1	Twins, 34 weeks by c-section
(12) ^a	No	2	2	Singleton intrauterine pregnancy NSVD 37 weeks; singleton intrauterine pregnancy NSVD 38 weeks
(14)	Yes	5	0	0
(11)	Yes	6 ^b	4 ^c	Term × 3, route not specified

Note: NSVD – normal spontaneous vaginal delivery.

^a Patient's IVF after permanent sterilization with Essure.

^b One patient did not achieve pregnancy, and another is awaiting confirmation of occlusion.

^c One patient was 3 months pregnant at the time of the report.

Omurtag. Unilateral occlusion of hydrosalpinx. Fertil Steril 2009.

Tek taraflı Hidrosalpenks – Stent : gebelik

Fertil Steril, 2009

ASSISTED REPRODUCTION TECHNOLOGIES

What is the best treatment option for infertile women aged 40 and over?

Sarah Armstrong · Valentine Akande

Table 1 Comparison of ART options for women aged ≥ 40

Treatments compared	Clinical pregnancy/ cycle %	Live birth/ cycle %	Study
Clomiphene	0–4 %	~0 %	Tsafir et al. [25] Liu et al. [30]
IUI with clomiphene	1–4 % 1–4.3 %	<1 % Unreported	Tsafir et al. [25] Dovey et al. [29]
IUI with FSH	3 %	1 %	Tsafir et al. [25]
IVF	16.9 %	13.7 %	Wiser et al. [39]

Article

Assisted reproduction in women over 40 years of age: how old is too old?



Dr Ariel Hourvitz

Ariel Hourvitz obtained his MD degree in 1985 as a graduate of the Sackler Faculty of Medicine in Tel-Aviv. He received his qualification in Obstetrics and Gynaecology in 1998 and then spent 2 years as a research fellow in Dr Eli Adashi's Laboratory in Salt Lake City, Utah, USA. In 2002 he obtained a Master's degree in Health Administration (MHA) *cum laude* from the Faculty of Management, Tel-Aviv University. His current research interests include ovarian physiology and molecular characterization of ovulation.

Ariel Hourvitz^{1,2,3}, Ronit Machtinger^{1,3}, Ettie Maman¹, Micha Baum¹, Jehoshua Dor¹, Jacob Levron¹

Table 5. IVF cycle cost according to age group.

	<i>Maternal age (years)</i>				
	<i><35</i>	<i>42</i>	<i>43</i>	<i>44</i>	<i>≥45</i>
No. of cycles	4883	336	299	154	54
Cost (US\$) of one cycle ^a	2765	2765	2765	2765	2765
Mean no. of total ampoules	33.5	47.9	49.4	49.9	66.9
Mean cost (US\$) of ampoules per patient (@ US\$30 per ampoule)	1004.4	1437	1482	1497	2007
Deliveries/cycle (%)	19.8	4.2	3.3	0.6	
Mean cost (US\$) for a child	18,847	100,047	128,696	710,333	

^aCost of one cycle includes gonadotrophin-releasing hormone agonist, clinic assessment, oocyte retrieval and 50% ICSI.

Sonuç

- Tubal ligasyon sonrası – mikrocerrahi
- Distal tubal hastalık
 - Hafif: Laparoskopi
 - Orta-şiddetli : salpenjektomi - IVF
- Proksimal tubal hastalık
 - Tubal kateterizasyon
- Distal-proksimal hastalık
 - IVF
- Tek taraflı PTO
 - IUI