



ÜREME TIBBİ CERRAHİ EĞİTİM,
ARAŞTIRMA VE UYGULAMA VAKFI



Histeroskopik Septum İnsizyonu, Polip – Myom Rezeksiyonu, Ne Zaman ve Hangi Hastalara?



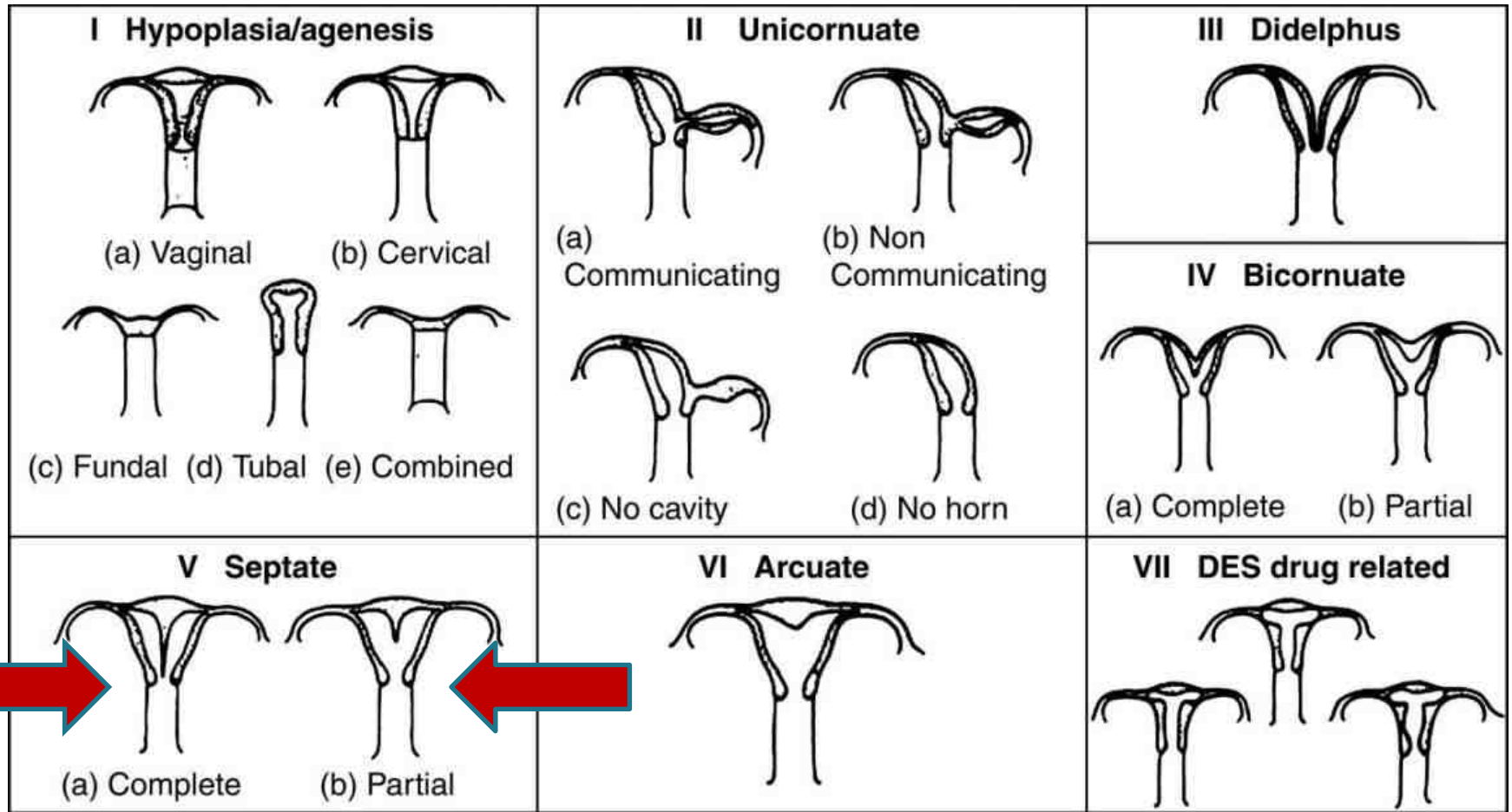
Dr Hüseyin Yeşilyurt

Zekai Tahir Burak Kadın Sağl. Eğt. ve Arş.
Hast

21.02.2015

Mullerian Anomali

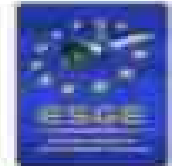
American Fertility Society classification of Mullerian anomalies.



Mullerian Anomalies



ESHRE/ESGE classification Female genital tract anomalies



Uterine anomaly		Cervical / Vaginal anomaly	
Main class	Sub-class	Co-existent class	
U0	Normal uterus	C0	Normal cervix
U1	Dysmorphic uterus	C1	<u>Septate cervix</u>
	a. T-shaped b. infantilis c. Others	C2	Double "normal" cervix
U2	Septate uterus	C3	Unilateral cervical aplasia
	a. Partial b. Complete	C4	Cervical Aplasia
U3	Bicorporeal uterus		
	a. Partial b. Complete c. Bicorporeal septate	V0	Normal vagina
U4	Hemi-uterus	V1	Longitudinal non-obstructing vaginal septum
	a. With rudimentary cavity (communicating or not horn) b. Without rudimentary cavity (horn without cavity / no horn)	V2	<u>Longitudinal obstructing vaginal septum</u>
U5	Aplastic	V3	Transverse vaginal septum and/or imperforate hymen
	a. With rudimentary cavity (bi- or unilateral horn) b. Without rudimentary cavity (bi- or unilateral uterine remnants / Aplasia)	V4	Vaginal aplasia
U6	Unclassified Malformations		
U		C	V

İNFERTİL HASTALARDA UTERİN ANOMALİ SIKLIĞI

Table III. Incidence of uterine malformations in infertile patients

Study	Women <i>n</i>	Diagnosis	Total <i>n</i> (%)
Tulandi <i>et al.</i> (1980)	2240	HSG	123 (1.0)
Sorensen (1981)	134	HSG	132 (23.9)
Raga <i>et al.</i> (1996)	142	HSG/TVS/TDU/Lap	112 (26.2)
Acien (1997)	1200	HSG/TVS/Lap	132 (16.0)
Raga <i>et al.</i> (1997) ^a	1024	HSG/Lap/Hyst	125 (2.4)
Total	3640		124 (3.4)

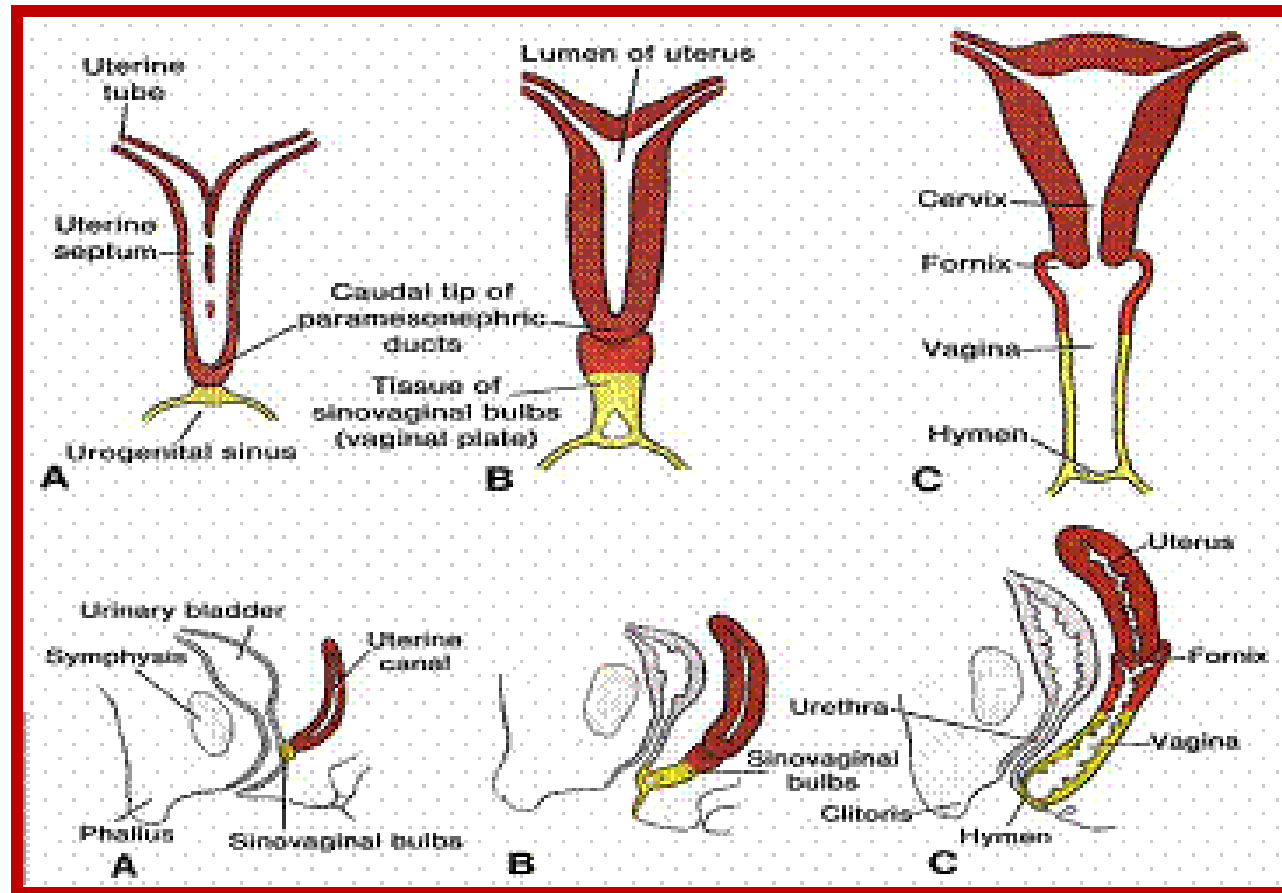
^aIncluding the patients of a previous study from the same group (Simón *et al.*, 1991).

HSG = hysterosalpingography; TVS = transvaginal ultrasonography; TDU = three-dimensional ultrasound; Hyst = hysteroscopy; Lap = laparoscopy.

Reprodüktif Başarısızlığın Mekanizması

- Septum fibroelastik bir dokudur (*Fedele, 1995*)
- Septum fibromusküler yapıdadır, septumda bağ dokusu daha az kas lifleri daha çoktur (*Dabirashrafi, 1995*)
- Septumdaki yetersiz kan akımı implantasyon yetersizliğine yol açar (*Burchell, 1978*)
- *Östrojen ve progesteron reseptör defekti blastokist implantasyonu için yetersizliğe yol açar (Fedele, 1996)*
- Artmış septal myometrium irregüler kontaktilite nedeni olabilir (*Sparac, (2001)*)
- Preterm doğum kısmı servikal yetmezliği olan uterus'da artmış intrauterin basınca bağlıdır (*Simon, 1991*)

Uterine Septum

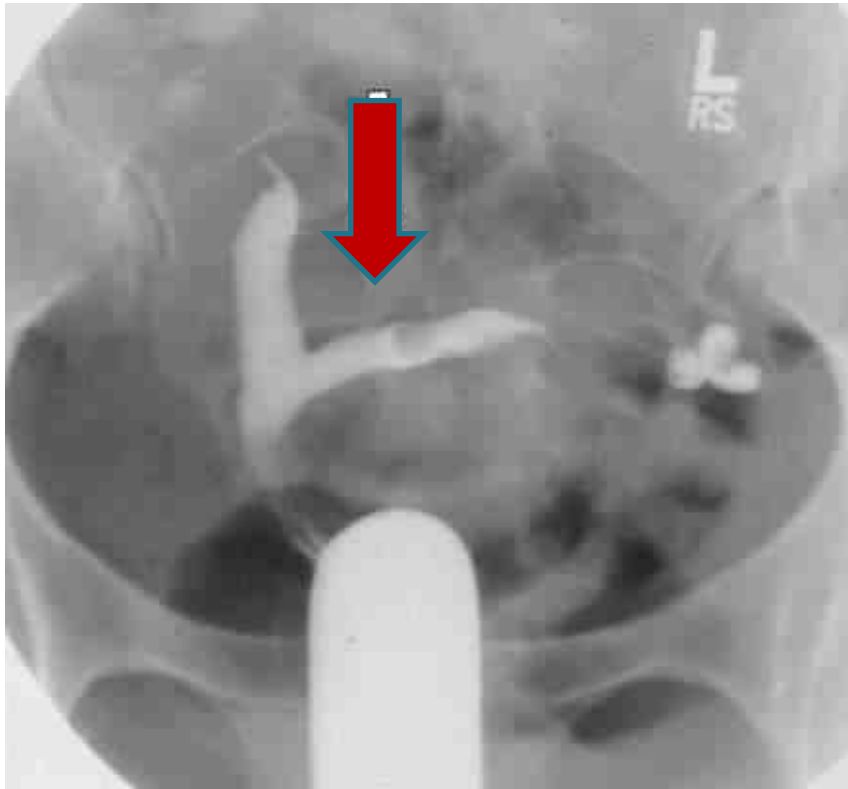


Uterine Septum

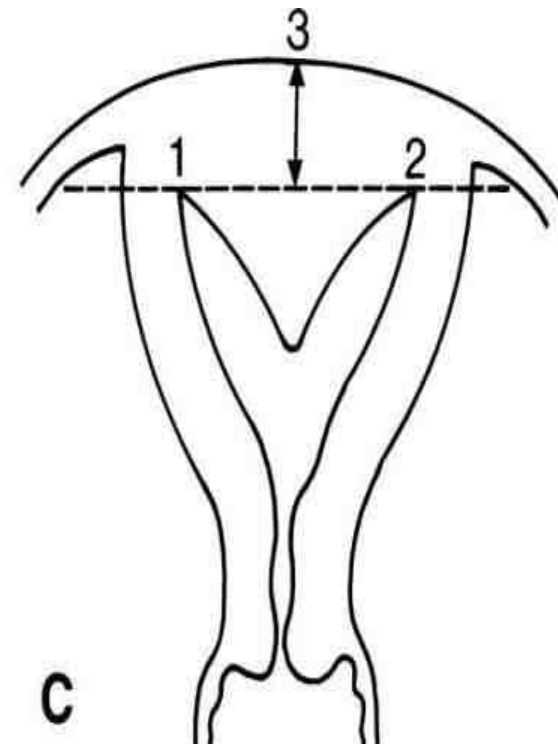
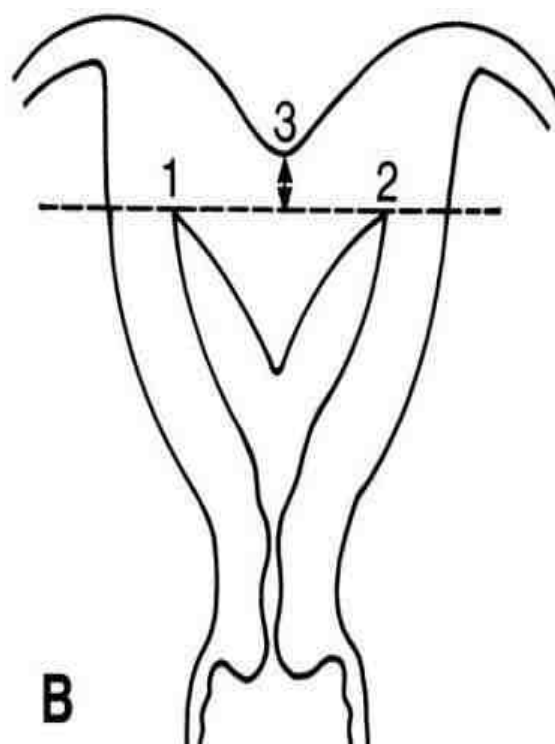
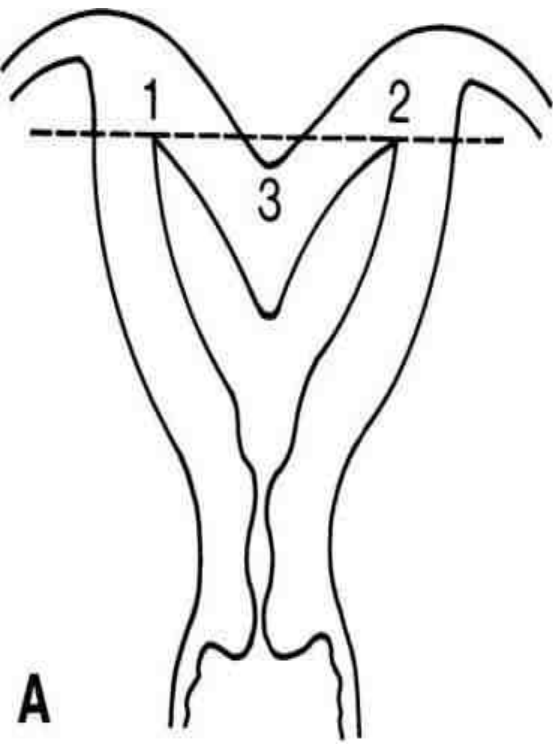
- **Komplet**
- **Parsiyel**



TANI --HSG

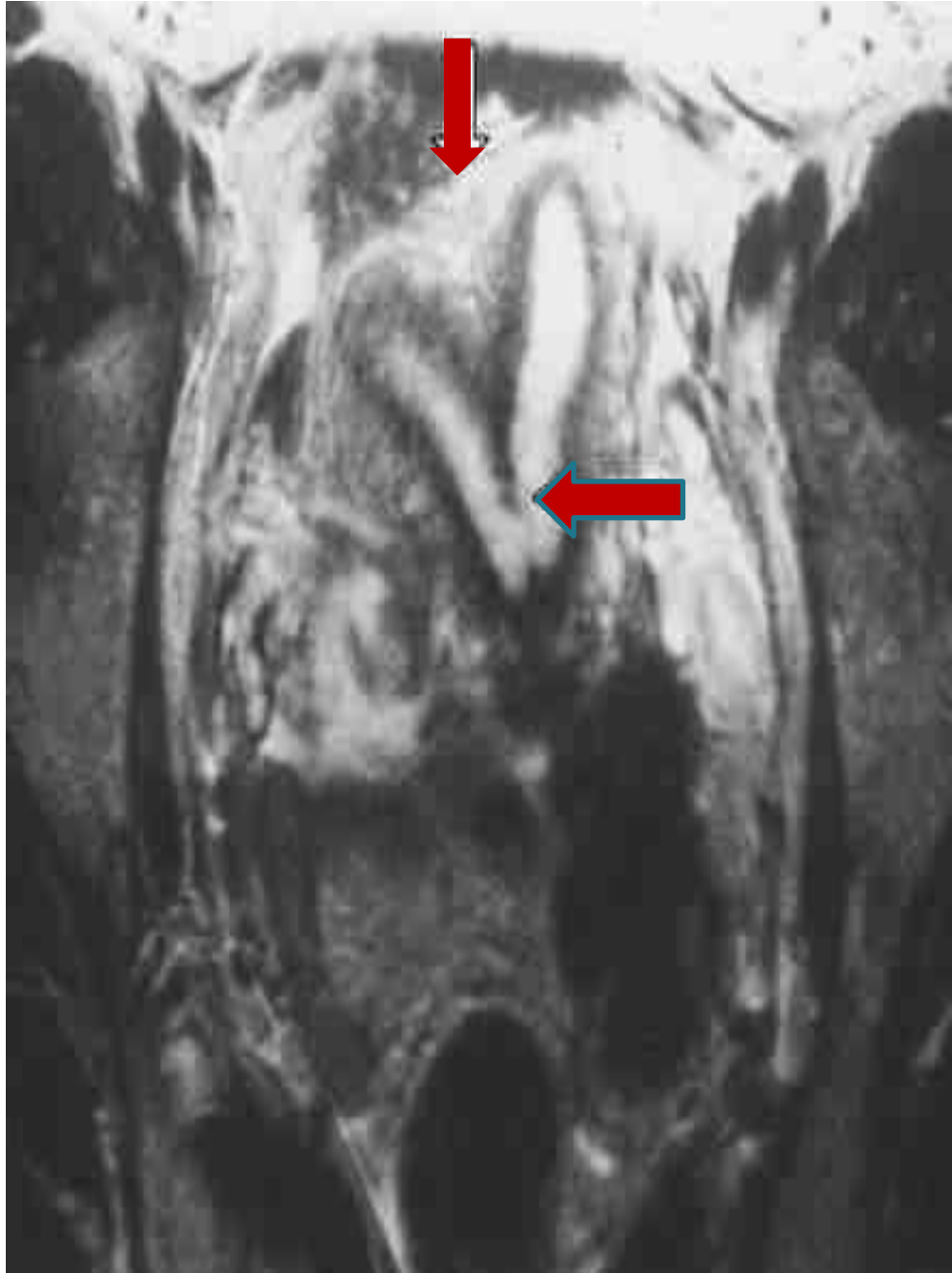


Bicornuate uterus – septum difference



BICORNUATE UTERUS

UTERINE SEPTUM



Histeroskopik Komplet Septum Rezeksiyonu

Septumların % 14' ünü oluřtururlar

Servikal yetmezlięe neden olabilir mi ?

Kalması uterin distosiye neden olabilir mi ?

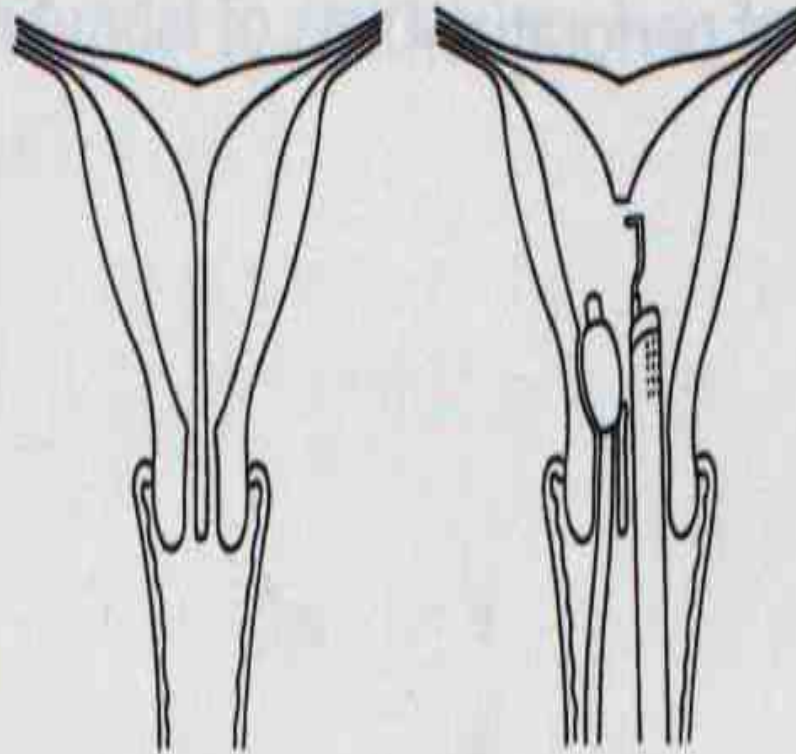
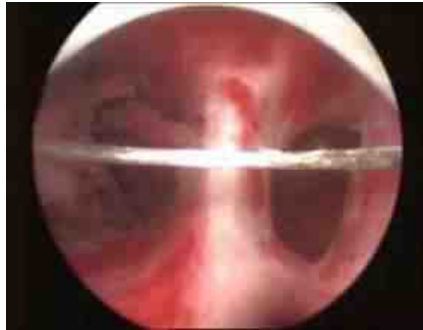


Figure 26: Dissection of the corporal septum with preservation of the cervical septum of the uterus septus completus with the help of the Balloon-technique

Hysteroscopic metroplasty of the complete uterine septum, duplicate cervix, and vaginal septum

Cervical septum resection is suggested for the patient with complete septum

Parsanezhad et al., Fertil Steril 2006



Uterin Septum



- **Reproductive outcome rate decreases**
- **Spontaneous abortion %26- %94**
- **Premature labor %9-%33**
- **Fetal survival %10-%75**
- **Spontaneous abortion after resection %5,9**

Toriano et al., 2004

Septum eksizyonu



Histeroskopik Rezeksiyon Sonrası Yönetim

- IUD: Enfeksiyon, kanama ve lokal inflamasyonla adezyon oluşum riski
- Antibiyotik: Olumlu etkisi kesinleşmemiş
- Hormonal tedavi: Epitelizasyonu hızlandırıcı etkisi ispatlanmamış

Dabirashrafi, 1996

Septal insizyon Sonrası iyileşme

- Postoperatif alınan histeroskopik biyopside:
 - 7. günde epitelizasyon yok
 - 14. günde epitelizasyon adacıkları
 - 1.ayda kesik, yüzeyleri deprese, ince bir endometriyumla kaplı
 - 2. ayda normale yakın, az olguda fundal adezyon mevcut
- 2 sikludan fazla beklemeye gerek yok**

(Candiani, 1990)

Reproductive outcome after resection

Comparison of reproductive outcome before and after hysteroscopic metroplasty for the septate uterus in selected series.

Author (ref.)	Before metroplasty					After metroplasty			
	No. of patients	No. of pregnancies	No. of miscarriages (%)	No. of preterm deliveries (%)	No. of term deliveries (%)	No. of pregnancies	No. of miscarriages (%)	No. of preterm deliveries (%)	No. of term deliveries (%)
Chervenak and Neuwirth (72)	2	3	3 (100)	0	0	2	0	0	2 (100)
Daly et al.* (70)	17	40	34 (85)	5 (12.5)	1 (2.5)	9	2 (22)	1 (11)	6 (67)
De Cherney and Polan* (81)	15	NR	>30	NR	NR	11	2 (18)	0	9 (82)
Israel and March* (71)	12	28	26 (93)	0	2 (7)	2	1 (50)	0	1 (50)
De Cherney et al. (79)	103	NR	>206	NR	NR	>71	>8	1	NR
Valle and Sciarra* (18)	12	42	30 (71)	12 (29)	0	10	2 (20)	2 (20)	6 (60)
Fayez (20)	12	21	19 (90)	2 (10)	0	16	2 (13)	0	14 (87.5)
March and Israel (16)	57	240	212 (88)	21 (9)	7 (3)	56	8 (14)	4 (7)	44 (79)
Perino et al. (33)	24	27	24 (89)	3 (11)	0	15	1 (7)	0	14 (93)
Daly et al. (69)	55	150	130 (87)	13 (9)	7 (5)	75	15 (20)	5 (7)	55 (73)
Choe and Baggish (17)	14	38	31 (82)	6 (16)	1 (3)	12	1 (8.3)	1 (8.3)	10 (83.3)
Fedele et al. (73)	71	>139	>139	NR	NR	65	10 (16)	10 (16)	45 (69.2)
Cararach et al. (74)	62	176	160 (91)	11 (6)	5 (3)	41	12 (29)	0	29 (48)
Pabuccioni et al. (76)	49	108	96 (89)	11 (10)	1 (1)	44	2 (4.5)	2 (4.5)	40 (91)
Valle (77)	115	299	258 (86.3)	28 (9.4)	13 (4.3)	103	12 (12)	7 (7)	84 (81)
Mencaglia and Tantini† (40)	94	NR	>94	NR	NR	62	4 (6)	0	58 (94)
Total	658	1,062	933 (88)	95 (9)	34 (3)	491	67 (14)	29 (6)	395 (80)

Note: NR = not recorded.

* Not included in total to avoid duplication of patients.

† Not included in total because of incomplete data.

Abortion rate decreases from 88% to %4 after resection.

Live birth rate increases from 3% to %80 after resection.

Reproductive outcome after hysteroscopic metroplasty in women with septate uterus and otherwise unexplained infertility

- 61 infertile patient with uterine septum
- After hysteroscopic metroplasty
 - After 11.2 months follow up, 41 % (n:25) pregnancy
 - 18 live birth
 - 7 spontaneous abortion

Hysteroscopic resection of the septum improves the pregnancy rate of women with unexplained infertility: a prospective controlled trial

- Group A

- **132 patient**

Septum +Unexplained infertility



Hysteroscopic
Metroplasty

Group B

44 patient

Unexplained infertility



Expectant
Management

1 year follow up without any treatment

Mollo et al, Fertil Steril 2009

Reproductive outcome.

	Group A	Group B	<i>P</i> value
Patients, n	44	132	
Pregnancies, n (%)	17 (38.6)	27 (20.4)	<.05
Abortions, n (%)	2 (11.8)	2 (7.4)	NS
Preterm deliveries, n (%)	3 (17.6)	1 (3.7)	NS
Term deliveries, n (%)	12 (70.6)	24 (88.9)	NS
Live birth rate, %	34.1	18.9	<.05
Fecundity rate	4.27	1.92	

Molla. Metroplasty in unexplained infertility. Fertil Steril 2009.

Pregnancy and live birth rate is significantly higher in metroplasty group

Removal of a residual portion of a uterine septum in women of advanced reproductive age: obstetric outcome

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BACKGROUND: To learn more about the obstetric outcome after initial septum resection and remnant septum (≤ 1 cm) resection. **METHODS:** In 94 patients with septate uteri who underwent uterine septum resection, the reproductive efficiency was analysed in a prospective observational study. The reproductive outcome was analysed after initial resection and (if required) consecutive procedures. **RESULTS:** A total of 94 women were enrolled in the study; all had had two or more miscarriages. The septum was completely removed during the first hysteroscopy in 58 (62%) cases. A residual septum was observed in 36 (38%) patients. Subsequent operative hysteroscopy was performed in the cases (29/36; 80.5%) involving repeated miscarriage and unsuccessful conception. The minimum observation time was 24 months. The difference in delivery rate after the first hysteroscopy between those with a normalized uterine cavity (26/58; 44.8%) and those with remnants (7/36; 19.4%) was statistically significant ($P < 0.05$). In fact, following the normalization of the uterine cavity, 62.1% (18/29) of the patients delivered, as compared with 19.4% of those (7/36) with a residue and Kaplan–Meyer curves revealed a statistically significant difference ($P < 0.05$). **CONCLUSIONS:** Women with a remnant uterine septum have an increased chance of successful pregnancy with an improved obstetric outcome after normalization of the uterine cavity.

UTERİN SEPTUM OLGULARINDA HİSTEROSKOPIK METROPLASTİ ÖNCESİ GEBELİK SONUÇLARI

Table XII. Pregnancy outcome in patients with septate uterus before hysteroscopic metroplasty

Study	Patients <i>n</i>	Conceiving <i>n</i>	Pregnancies <i>n</i>	Ectopics <i>n</i> (%)	Abortions <i>n</i> (%)	Preterm deliveries <i>n</i> (%)	Term deliveries <i>n</i> (%)	Live births <i>n</i> (%)
Fayez (1986) ^a	19	12	21	0	19 (90.5)	2 (9.5)	0	0
Valle and Sciarra (1986)	12	12	42	0	30 (71.4)	12 (28.6)	0	3
March and Israel (1987) ^a	91	79	240	0	212 (88.3)	21 (8.8)	7 (2.9)	12
Perino <i>et al.</i> (1987) ^a	24	16	27	0	24 (88.9)	3 (11.1)	0	3
Daly <i>et al.</i> (1989) ^a	70	55	150	0	130 (86.7)	13 (8.7)	7 (4.7)	10
Choe and Baggish (1992) ^a	19	18	41	3	31 (81.6)	6 (15.8)	1 (2.6)	4
Grimbizis <i>et al.</i> (1998) ^a	57	33	78	2 (2.6)	69 (88.4)	2 (2.6)	5 (6.4)	NM
Total	292	225	599	2 (0.3)	515 (86.4)	59 (9.8)	20 (3.3)	32/521 (6.1)

^aIncluding infertility patients.
NM = not mentioned.

UTERİN SEPTUM OLGULARINDA HİSTEROSKOPIK METROPLASTİ SONRASI GEBELİK SONUÇLARI

Table XIII. Pregnancy outcome in patients with septate uterus after hysteroscopic metroplasty

Study	Patients <i>n</i>	Conceiving <i>n</i>	Pregnancies (+ ongoing) <i>n</i>	Ectopics <i>n</i> (%)	Abortions <i>n</i> (%)	Preterm deliveries <i>n</i> (%)	Term deliveries <i>n</i> (%)	Live births <i>n</i> (%)
DeCherney <i>et al.</i> (1986) ^a	72/72	67	67 (+3)	0	~8 (11.9)	1 (1.5)	58 (85.6)	58 (85.6)
Fayez (1986) ^a	19/19	16	16	0	2 (12.5)	0	14 (87.5)	14 (87.5)
Valle and Sciarra (1986)	12/12	10	10 (+3)	0	2 (20.0)	2 (20.0)	6 (60.0)	8 (80.0)
March and Israel (1987) ^a	91/66	57	56 (+7)	0	8 (14.3)	4 (7.1)	44 (78.6)	48 (85.7)
Perino <i>et al.</i> (1987) ^a	24/24	16	11 (+5)	0	1 (9.1)	0	10 (90.9)	10 (90.9)
Daly <i>et al.</i> (1989) ^a	70/66	54	84 (+4)	0	17 (20.2)	5 (6.0)	62 (73.8)	65 (77.4)
Choe and Baggish (1992) ^a	19/14	13	12 (+3)	0	1 (8.3)	1 (8.3)	10 (83.4)	10 (83.4)
Fedele <i>et al.</i> (1993)	102/?	66	66	0	10 (15.2)	10 (15.2)	45 (68.2)	55 (83.3)
Grimbizis <i>et al.</i> (1998) ^a	57/42	30	44	1 (2.3)	11 (25.0)	2 (4.5)	30 (68.8)	NM
Total ^a	466/315	329	366	1 (0.3)	60 (16.4)	25 (6.8)	279 (76.2)	268/322 (83.2)

^aIncluding infertility patients.

NM = not mentioned.

Endometriyal Polipler ve Endoskopik Giriřimler



POLİP ÖZELLİKLERİ

- **1 cm veya kaviteyi dolduran büyüklükte**
- **% 20 multipl**
- **İnsidans %7-8 yaşla artar**
- **Genellikle fundus arka duvar ve kornual yerleşimli**
- **Hiperplastik, atrofik veya fonksiyonel yapıda**
- **Hiperplazi, polipoid adenokarsinoma, adenofibroma ve adenosarkoma ile karışabilir**

Polip-İnfertilite ilişkisi

-Fertilize ovumun implantasyonunu engelleme

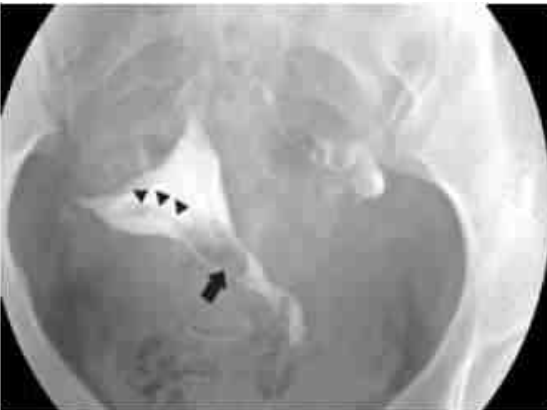
- Endometriumu bozarak
- Vasküler kompresyon

-Mekanik obstrüksiyon

- Fallopian tüpler
- Servikal kanal
- Uterin kavite

-Uterin kavite distorsiyonu ?

- Uterin yabancı cisim



Mordechai G, Fertil Steril 1995, 64(4)

Polip-gebelik sonucu Tekrarlayan düşükler

- Uterin kan akımında bozulma
- Uterin irritabilite
- Plasenta ve fetusun büyümesine uygun alanın olmaması
- Uygun implantasyonun olmaması

Prematür eylem



Endometriyal polipler-infertilite

IUI öncesi histeroskopik olarak poliplerin alınması diagnostik histeroskopi ve polip biyopsisine göre klinik gebelik oranını arttırır (OR 4.4, 95% CI 2.5 to 8.0, P < 0.00001, 204 women, high-quality evidence)

Bosteels, Cochrane Database Syst Rev.

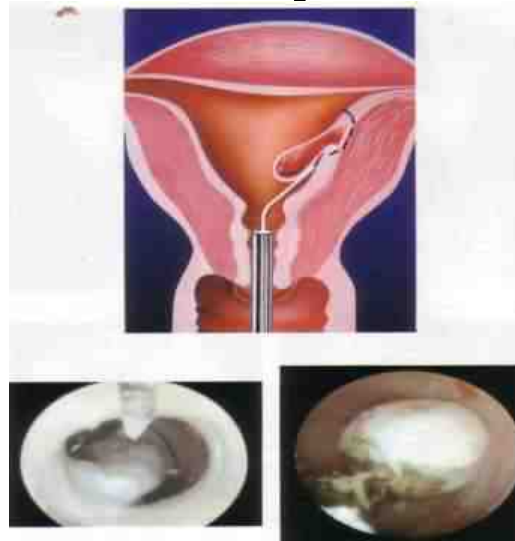
Endometriyal polipler-infertilite

- IUI öncesi histeroskopik olarak poliplerin alınması diagnostik histeroskopi ve polip biyopsisine göre klinik gebelik oranını arttırır (OR 4.4, 95% CI 2.5 to 8.0, P < 0.00001, 204 women, high-quality evidence)

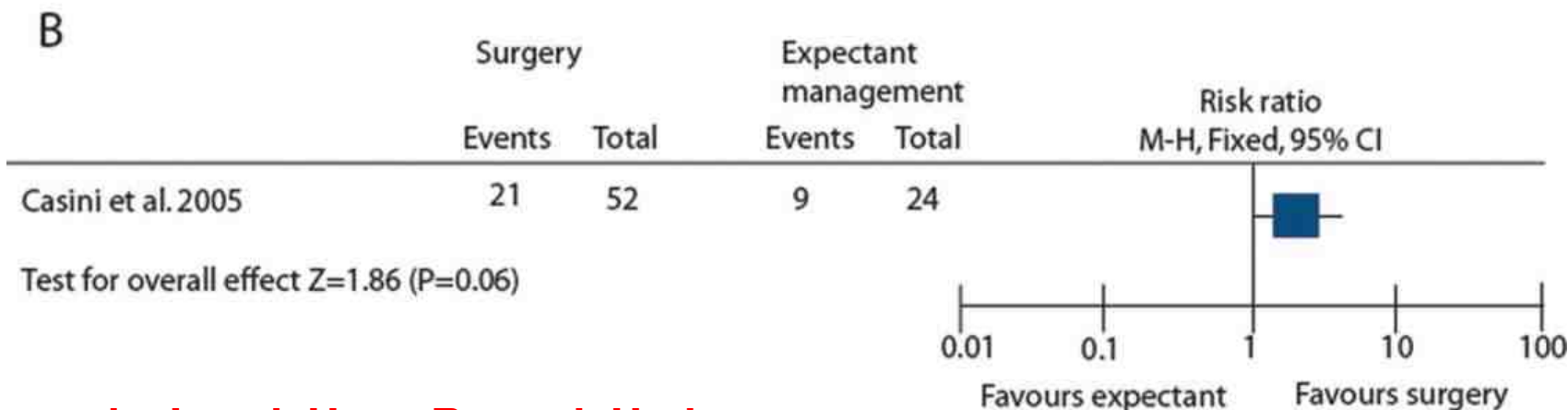
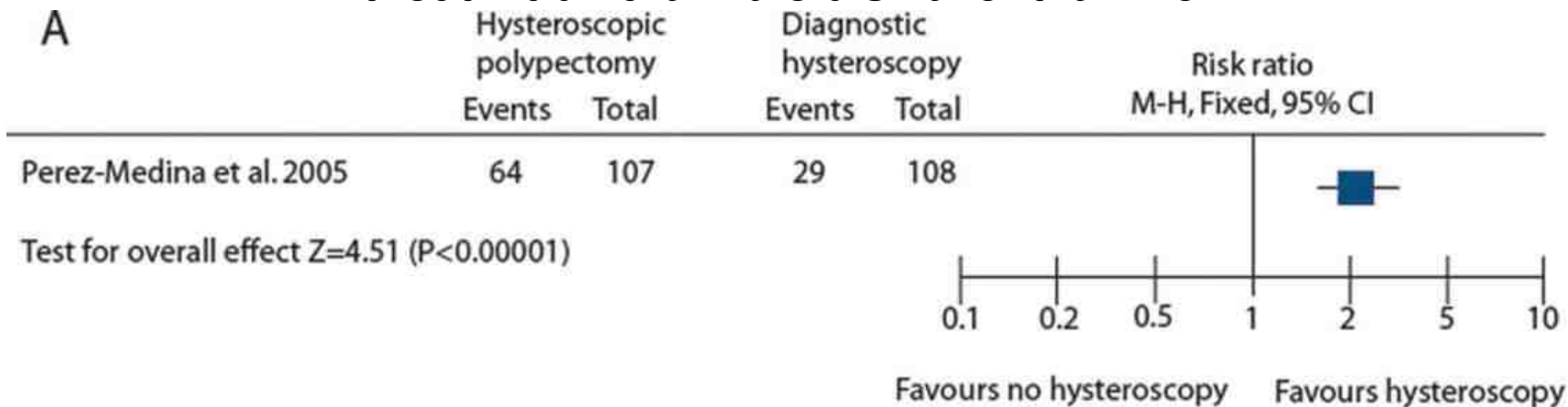
Bosteels, Cochrane Database Syst Rev.2013

Treating suspected uterine cavity abnormalities by hysteroscopy to improve reproductive outcome in women with unexplained infertility or prior to IUI, IVF, or ICSI. Bosteels et al Gynecol Surg. 2013

- **Treating suspected uterine cavity abnormalities by hysteroscopy to improve reproductive outcome in women with unexplained infertility or prior to IUI, IVF, or ICSI. Bosteels et al Gynecol Surg. 2013**



(A) Hysteroscopic polypectomy versus hysteroscopy and biopsy in subfertile patients with ultrasonographically detected endometrial polyps undergoing IUI. (B) Myomectomy versus expectant management in subfertile patients with one knot* and/or one submucous fibroid with or without intramural fibroid smaller than 4 cm.



Bosteels J et al. Hum. Reprod. Update 2010;16:1-11

human reproduction update

Pregnancy rates after hysteroscopic polypectomy depending on the size or number of the polyps

Stamatellos I et al., Arch Gynecol Obstet. 2008

- **İnfertil hastalarda sayı ve büyüklüğüne bakılmaksızın endometriyal polip rezeksiyonu sonrası gebelik oranları artar**

Location of endometrial polyp and pregnancy rate in infertility patients Yanaihara A et al., Fertil Steril. 2008

Özellikle uterotubal yerleşimli polip eksizyonu sonrası gebelik oranları anlamlı şekilde artar

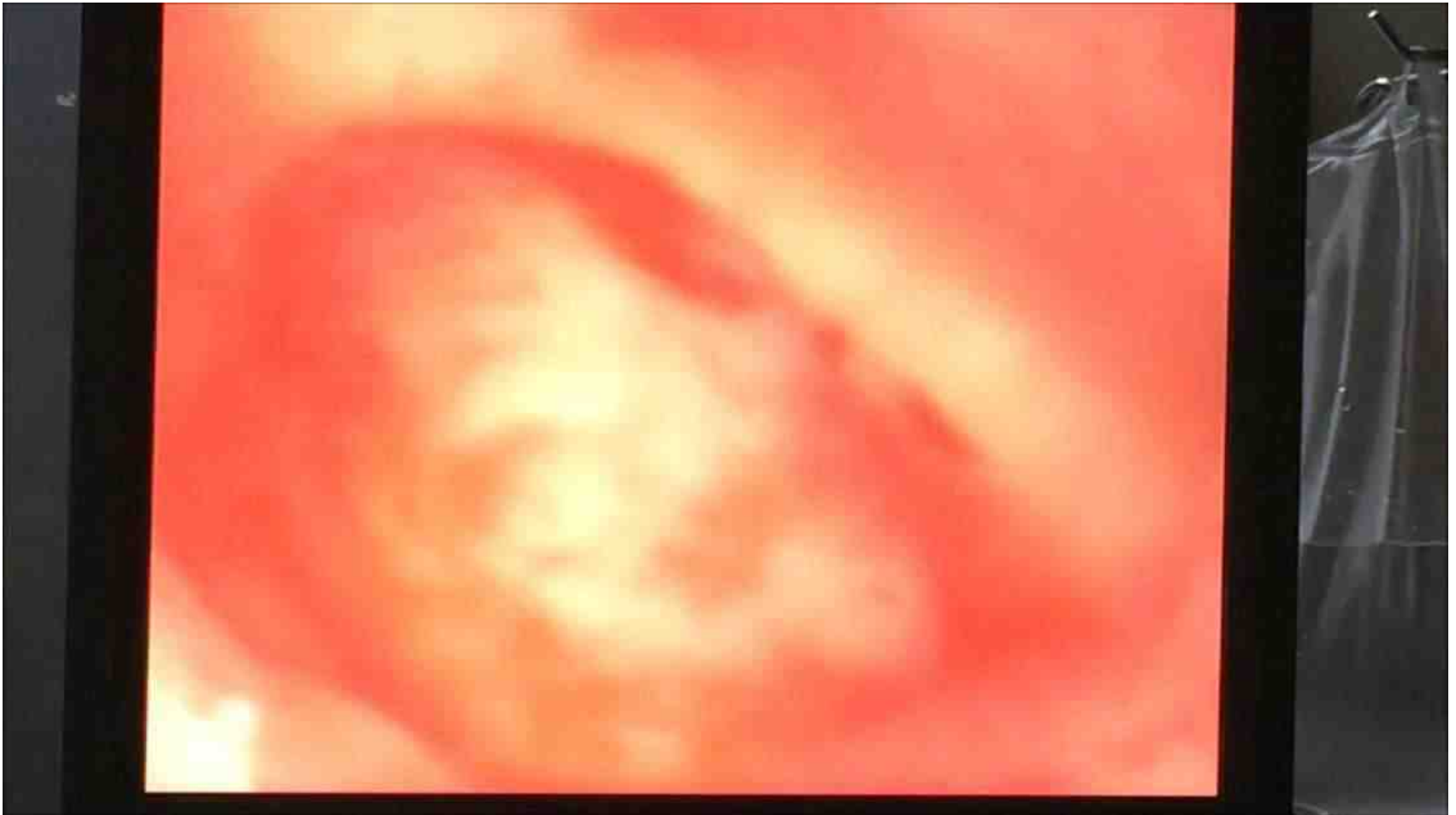
Hysteroscopic polypectomy without cycle cancellation in IVF cycles

Madani T et al., Reprod Biomed Online. 2009

IVF siklus n : 9

- Polip rezeksiyonu-embryo transfer aralığı: 2-16 gün**
 - Gebelik (+) : 4**
 - Gebelik (-) : 4**
 - Blighted ovum : 1**
-
- IVF siklusunda erken proliferatif fazda H/S polipektomi yapılabilir**

Endometrial polip



The effectiveness of hysteroscopy in improving pregnancy rates in subfertile women without other gynaecological symptoms: a systematic review. Human Reprod 2009

- **En az 2 başarısız IVF-veya ICSI denemesi olan hastalarda ART öncesi diagnostik veya operatif histeroskopi uygulanması fertilitte başarısını arttırabilir.**
- **Polip, myom, uterin septum veya intrauterin adezyonu olan hastalarda histeroskopik cerrahinin fertilitte üzerine olumlu etkisini gösteren yayınlar var ama daha çok RKÇ'ya gerek var**
- **Asemptomatik hastalarda histeroskopi first-line bir tetkik olmamalı**

USG



HİSTEROSCOPIK MYOMEKTOMİ



**Leiyomyomlar en sık görülen
benign pelvik tümörlerdir.**

**Üreme çağındaki kadınların
%25-50'sinde görülmektedir.**

En sık 30-50 yaş

SUBMUKOZ MYOM KLİNİK

- 1 -Menoraji ve anemi
- 2 -İnfertilite
- 3 -Tekrarlayan gebelik kaybı
- 4 -Prematürite
- 5 -Dismenore

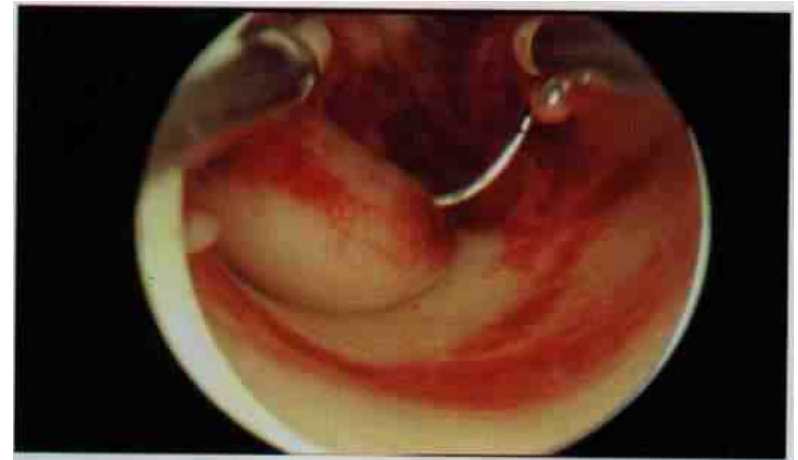


Figure 46: Submucous myoma grade extent 0 / ESH (whole myoma situated in the cavity – easy resection possible)

Myomlar ve İnfertilite

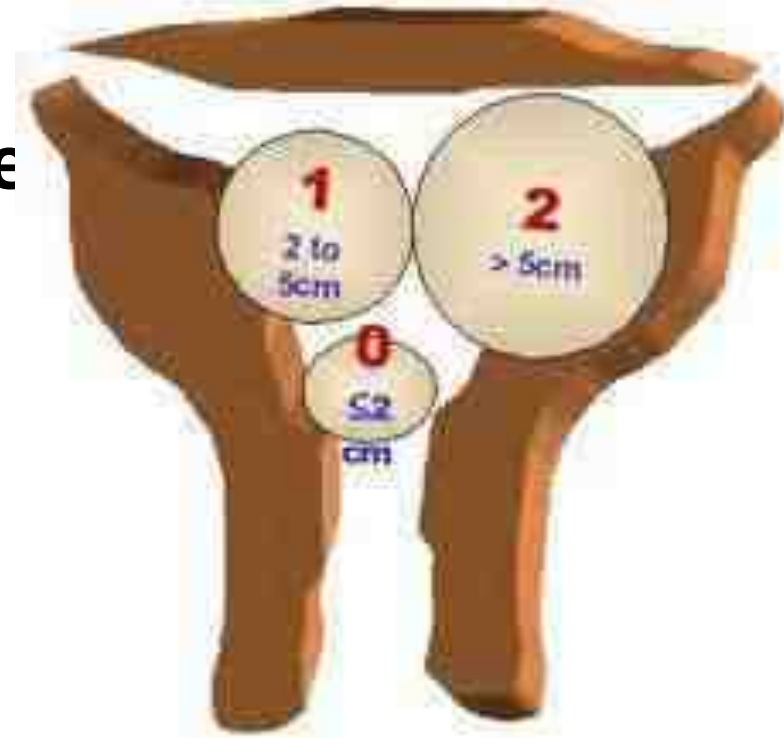
- Subseröz myomların fertilite üzerine etkisi yok gözükmemekte
 - Intramural (IM) myomlar fertiliteyi azaltıp spontan abortus oranlarını arttırabilir, bunlarda myomektominin fertilite arttırıcı etkisine ait objektif bir delilimiz yok
 - Submüköz myomların kavitedeki lokalizasyonu sonohisterografi, histeroskopi veya MR'la saptandığında rezeksiyonu fertiliteyi arttırır.
 - Myomların tıbbi tedavisinin infertilite tedavisinde yeri yoktur.
- “Consensus statement of Australasian subspecialists in reproductive endocrinology and infertility (the ACCEPT group) 2011”

Submüköz myom sınıflandırma

G 0: pedinküllü myom, total olarak kavitede

G1: <50%den azı kavitede

G2: >50%den fazlası kavitede



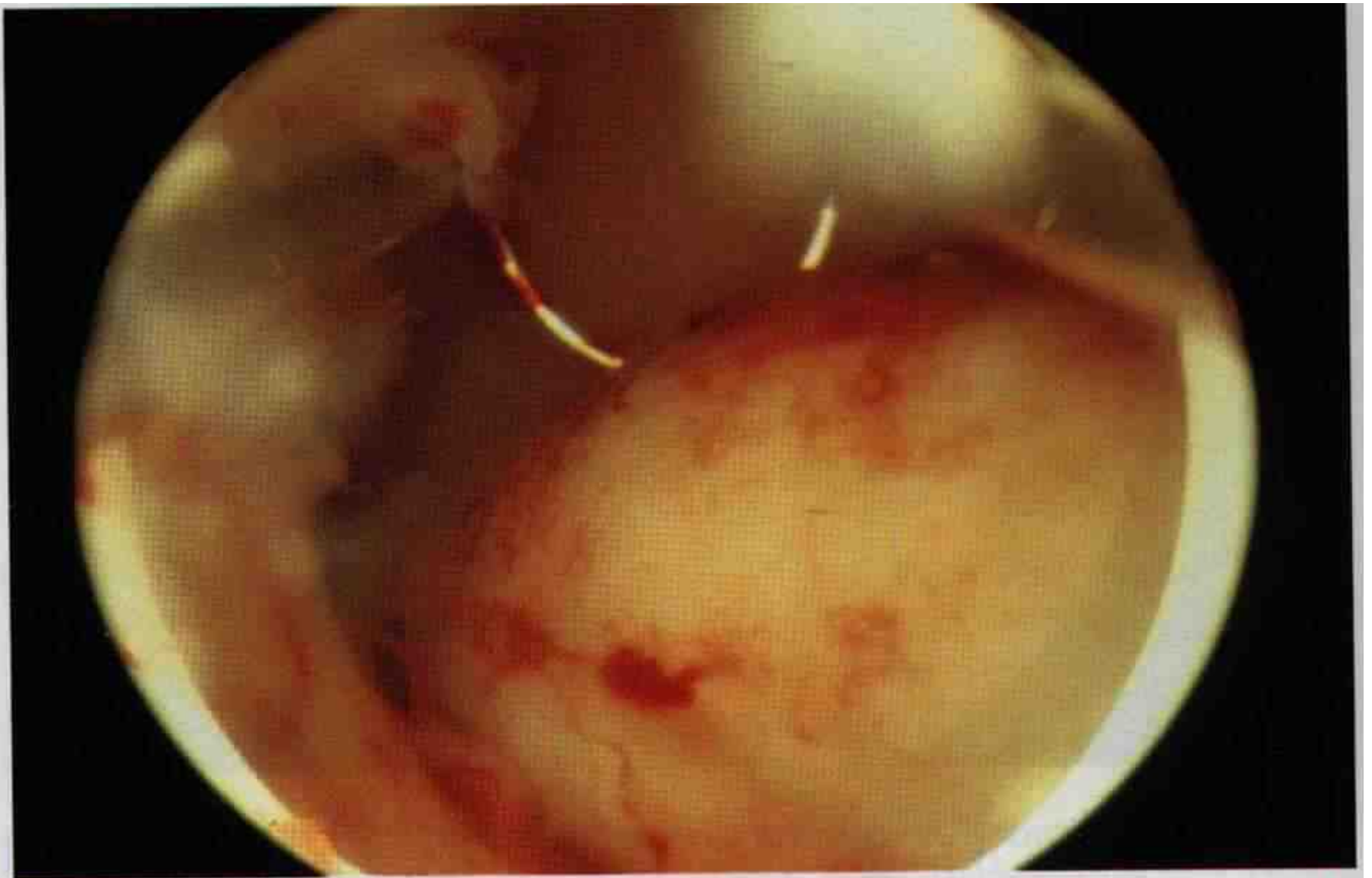


Figure 47: Submucous myoma grade extent 1 / ESH
(intramural portion < 50%)

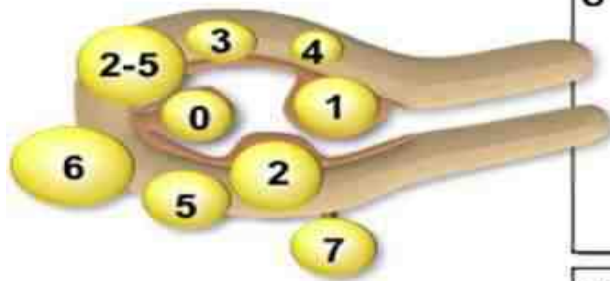
FIGO classification of submucous leiomyomas

Polyp
Adenomyosis
Leiomyoma
Malignancy & hyperplasia

Submucosal
Other

Coagulopathy
Ovulatory dysfunction
Endometrial
Iatrogenic
Not yet classified

Leiomyoma Subclassification System



SM- Submucosal	0	Pedunculated Intracavitary
	1	<50% Intramural
	2	≥50% Intramural
O - Other	3	Contacts endometrium; 100% Intramural
	4	Intramural
	5	Subserosal ≥50% Intramural
	6	Subserosal <50% Intramural
	7	Subserosal Pedunculated
	8	Other (specify e.g. cervical, parasitic)
Hybrid Leiomyomas (impact both endometrium and serosa)	Two numbers are listed separated by a hyphen. By convention, the first refers to the relationship with the endometrium while the second refers to the relationship to the serosa. One example is below	
	2-5	Submucosal and subserosal, each with less than half the diameter in the endometrial and peritoneal cavities, respectively.

STEPW Sınıflaması

STEPW submucous fibroid classification.

	Size (cm)	Topography	Extension of the base	Penetration	Lateral Wall	Total
0	< 2	Low	< 1/3	0	+ 1	
1	> 2 a 5	Middle	>1/3 - 2/3	< 50%		
2	>5	Upper	>2/3	> 50%		
Score	+	+	+	+	+	

Score	Group	Complexity and therapeutic options
0 to 4	I	Low complexity hysteroscopic myomectomy.
5 to 6	II	High complexity hysteroscopic myomectomy. Consider GnRH use? Consider Two-step hysteroscopic myomectomy.
7 to 9	III	Consider alternatives to the hysteroscopic technique

Lasmar. New classification of submucous myomas. Fertil Steril 2011.

Feasibility of a new system of classification of submucous myomas: a multicenter study

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Roger Keller Celente, C.D., M.Sc., Ph.D.,^e and Artilio Di Spiezo Sardo, M.D., Ph.D.^f*

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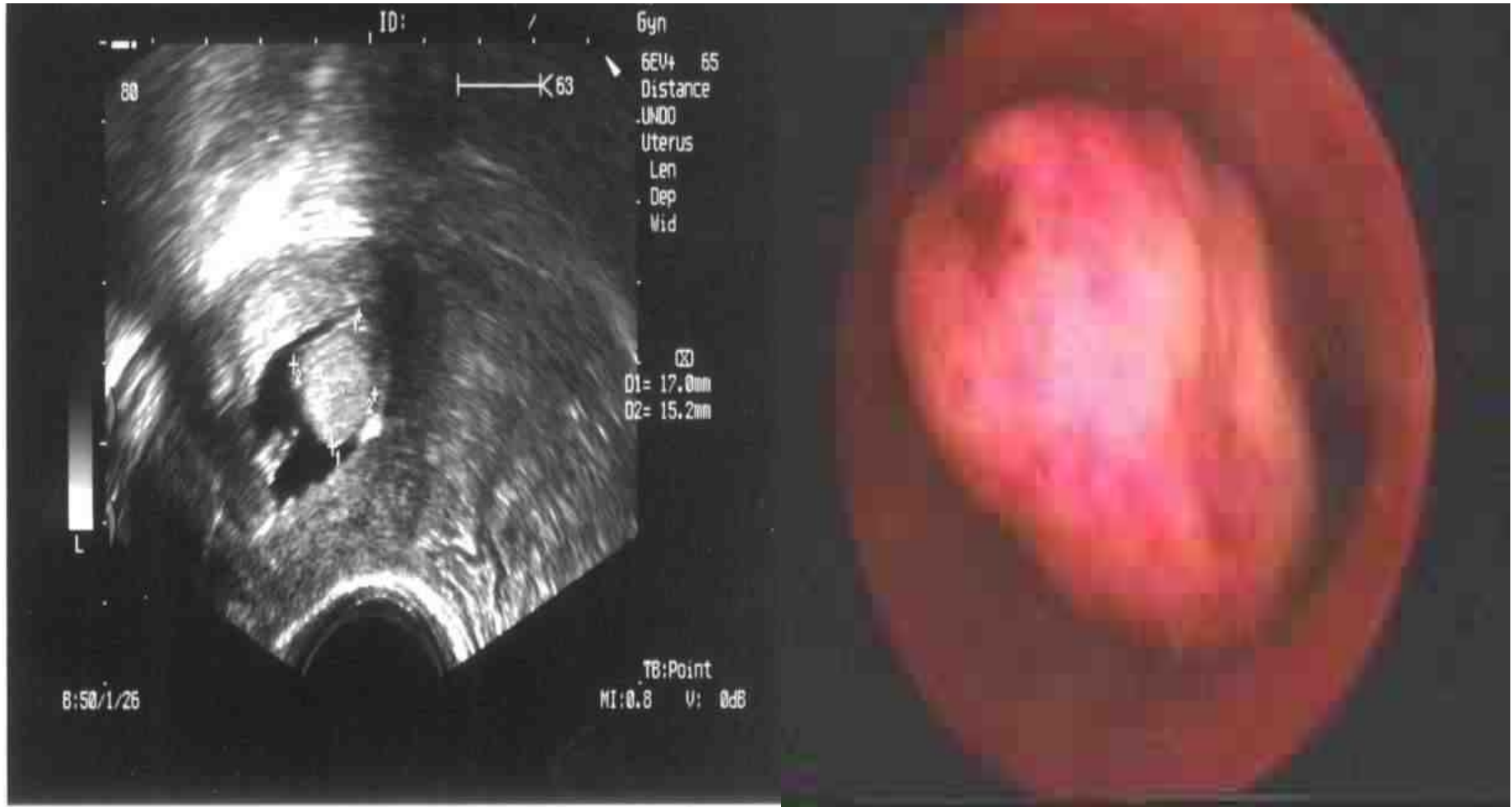
- Size Skor ≤ 4
- komplet eksizyon başarılı
- Skor >4
- **STEPW' Sınıflaması**
- %77.2 komplet eksize edilebilmiş
- **Topography**
- **Extension**
- **Penetration**
- **Wall**
-

**Management of uterine fibroids in the patient pursuing assisted reproductive technologies. Ezzati et al.
Womens Health 2009**

- **Submuköz kaviteyi bozan myomlar ART sonuçlarını olumsuz etkiler, gebelik ve canlı doğum oranlarını %70 azaltır (HOX gen ekspresyon bozukluğu implantasyonu olumsuz etkiler)**
- **Intramural myomlar kaviteyi distorte etmeseler bile gebelik ve canlı doğum oranlarını %30 azaltır**
- **Subseröz myomların ART sonuçları üzerinde etkisi yoktur.**

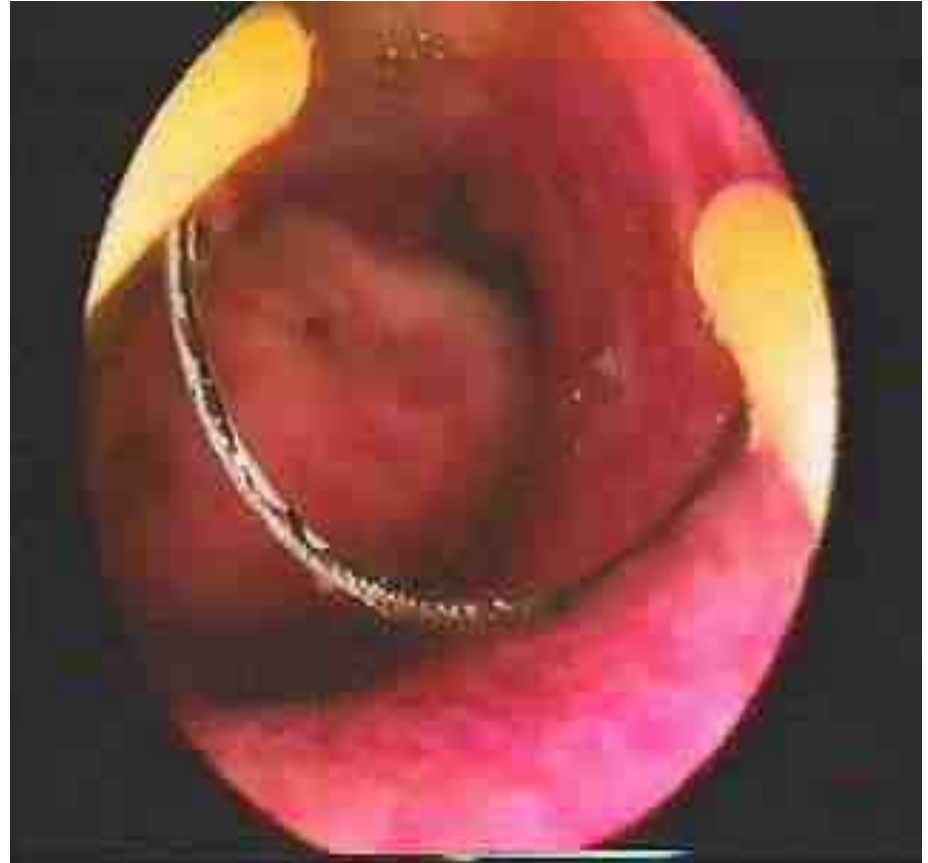
TV USG

H/S



H/S Myomektomi / teknik

- GnRH-a ?
- 0-12 teleskop
- Cutting loop(150w)



H/S Myomektomi / teknik

- sıvı monitorizasyonu (1,5 lt)
- Post op 2 . ay TVS
- Recurrens follow-up TVS
2 /yıl

H/S Myomectomy

- **>3cm ve intramural komponent fazla ise 2 aşamalı**
- **Cerrahın deneyimi!!**

H/S MYOMEKTOMİ- TEKNİK

 H/S makaslar

 Myoma rezektoskop

 Nd:YAG lazer

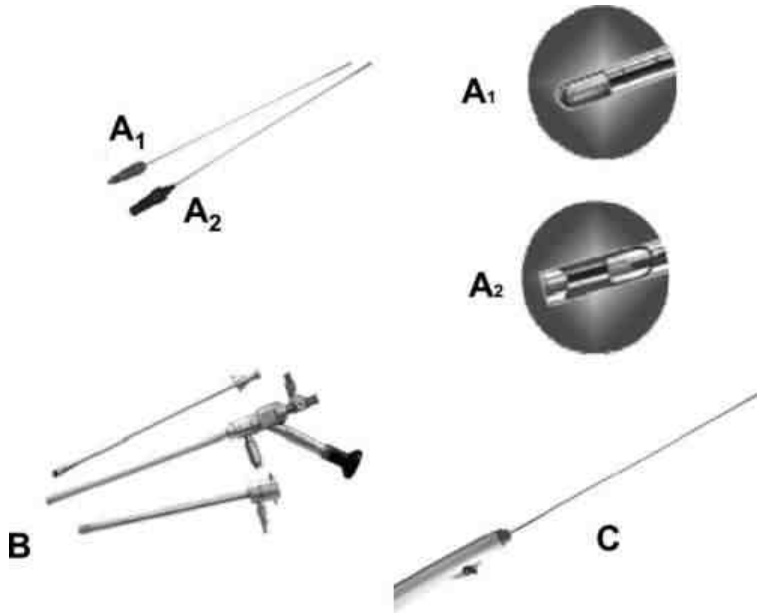
 Monopolar elektrokoter

 Bipolar elektrooter

 Elektrocerrahi vaporizasyon

Histeroskopik Morselatör

Polip ve myomların çıkarılmasında kolaylık sağlamakta



**Resection of
Submucous
Myomata**

Histeroskopik myomektomi sonrası

- Gebelik oran artar (%43) (Goldberg Fertil Steril 1995, Bernard Eur J Obstet Gynecol Reprod Biol 2000)**
- Açıklanamayan infertiliteye göre gebelik oranı daha yüksek (63 % vs 28 %) (Shokeir et al Fertil Steril 2010)**
- En etkin olduğu grup tek, en fazla %50'si kavitede olan (Tip 0,1) <3cm olan myomlarda etkili (kavite <12 hafta)**