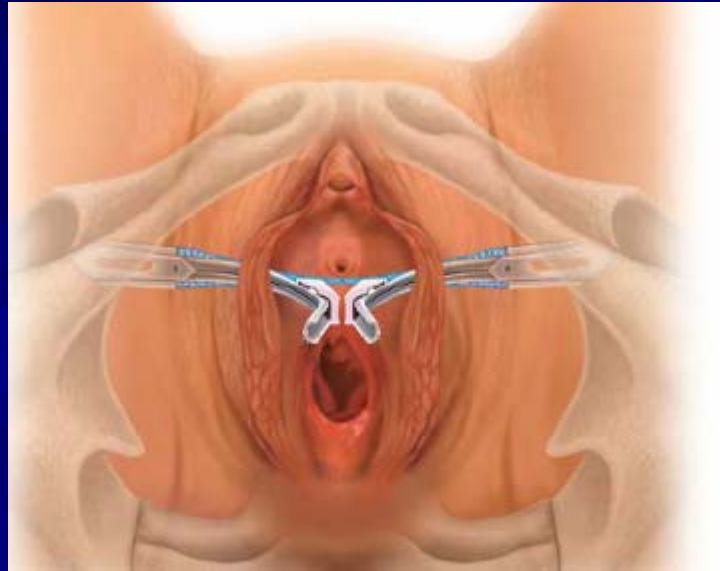


Kadın SÜİ tedavisinde Minimal İnvazif Yaklaşımlar



Doç. Dr. Rahmi Onur
Fırat Üniversitesi Tıp Fakültesi
Üroloji AD-Elazığ

The Standardisation of Terminology of Lower Urinary Tract Function: Report from the Standardisation Sub-committee of the International Continence Society

Paul Abrams, Linda Cardozo, Magnus Fall, Derek Griffiths, Peter Rosier, Ulf Ulmsten, Philip van Kerrebroeck, Arne Victor, and Alan Wein

Üriner İnkontinans

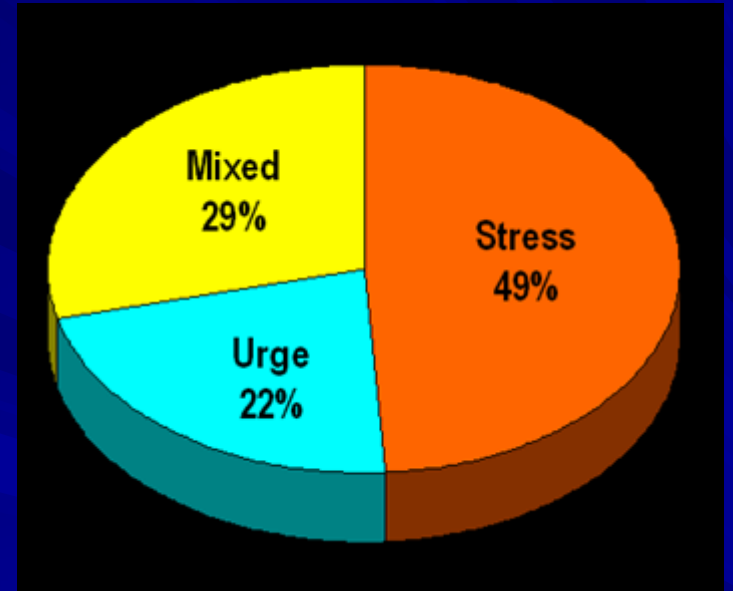
- “ Egzersiz veya eforla, öksürme ya da hapşırma ile idrar kaçırma”
- “ Objektif olarak gösterilme” şartı YOK!

Prevalans

- SÜİ prevalansı:
 - ABD'de 29 milyon kadın
 - Nullipar: % 12-52

Ülkemizde sıklık ne?

- % 12-53
- SÜİ +/- MÜİ: % 46



Tedavi

KİM TEDAVİ EDİLMELİ ?

- SÜİ : “Çok az bile olsa”
- Karışık tipte: SÜİ > UÜİ
- Tedavi isteyen
- Riskleri kabul eden
- TAK göze alan
- “Uygun hasta” : yaş, kilo, doğum sayısını tamamlamış,.... vb

Cerrahide hedeflenen

Anatomik düzeltme



Normal Sfinkterik ünite
lokalizasyonuna alma

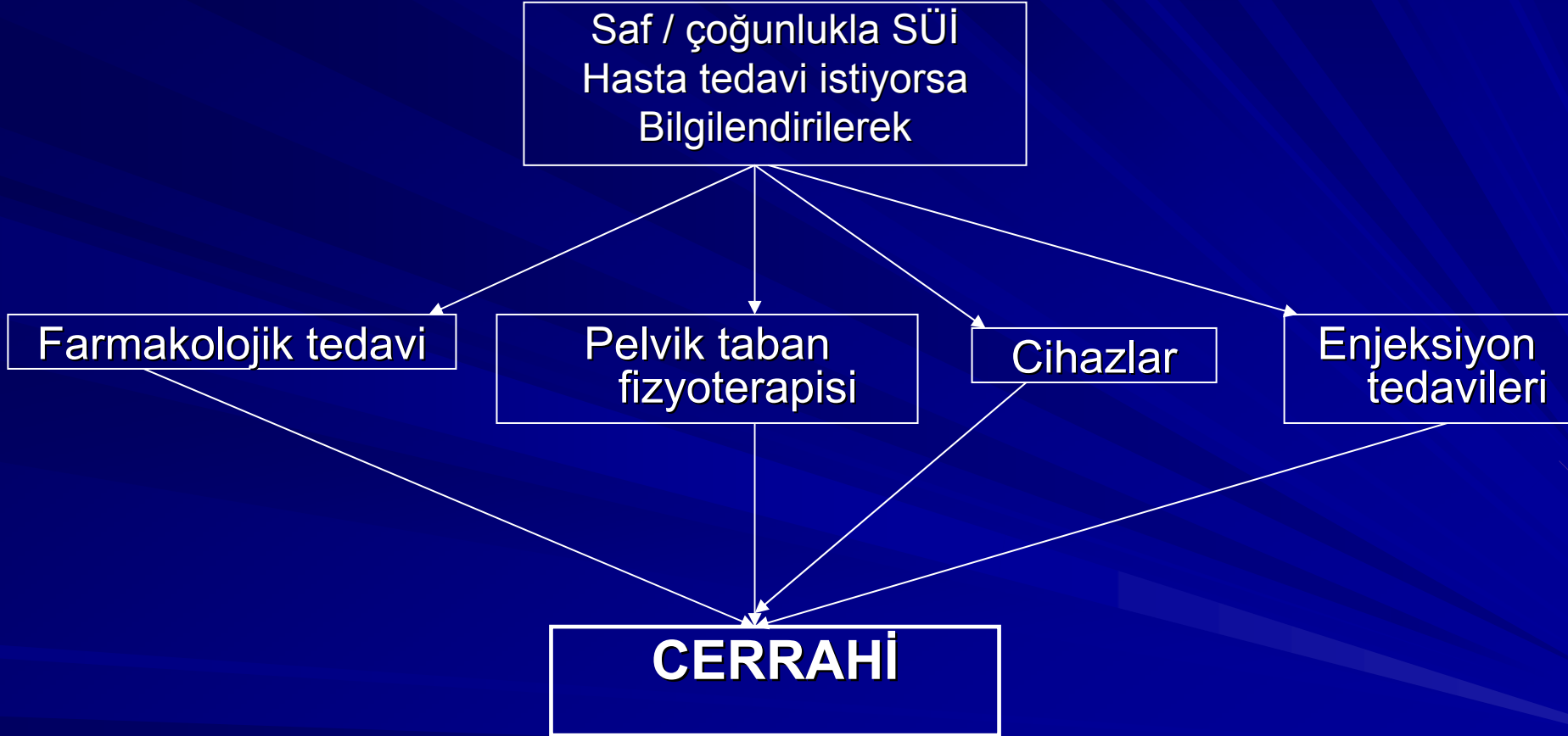
Sfinkterik yetmez.



Kompresyon &
Kapanma

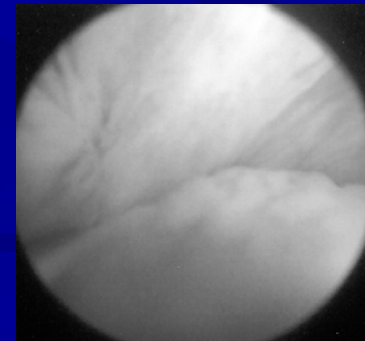


Tedavi



SÜİ: Enjeksiyon tedavileri

- Çabuk
- Kolay
- Kısa dönemde etkin



Recommendations for surgical treatment of SUI

Surgical procedure	GR
• Anterior colporrhaphy	NR
• Transvaginal BNS (needle)	NR
• Burch procedure: open	A
• Burch procedure: laparoscopic (by experienced laparoscopic surgeon only)	B
• Paravaginal	NR
• MMK urethroplasty	NR
• BN sling: autologous fascia	A
• Sub-urethral slings (TVT)	A
• Urethral bulking agents	B

Table 2
Studies reporting the efficacy of collagen, carbon-coated zirconium beads and silicone in the treatment of SUI

Reference	Agent ^a	SUI patient population	Follow-up	Outcome parameter	Success rate (cure + improved)	Level of evidence ^b
Bent et al. [22]	Collagen (n = 58)	Urethral hypermobility (Type I, IIA or IIB [Blaivas classification]) [78]	12 months	Cure: Stamey grade 0 Improvement: decrease of at least one Stamey grade	66%	IV
Winters et al. [79]	Collagen (n = 58)	ISD (ALPP <60 cm H ₂ O) (n = 49) Urethral hypermobility (Q-tip) (n = 37) Previous incontinence surgery (n = 31)	2 months	Cure: 'no leakage at all' or ≤1 pad per day	79.3%	IV
Groutz et al. [31]	Collagen (n = 63)	Urodynamically confirmed sphincteric incontinence Mixed incontinence (41%) Concomitant urethral hypermobility (n = 8) Previous incontinence surgery (n = 18)	Mean 12 months	Objective outcome score Cure: no SUI by a diary, <8 g leakage by pad test and patient considers herself cured Improvement: good or fair	40%	IV
Corcos and Fournier [80]	Collagen (n = 40)	Type I (n = 8), Type II (n = 20), Type III (n = 12) (Blaivas classification) [78]	49 months	Cure: symptomatic dryness, negative pad test and no VLPP leakage Improvement: patient satisfaction, and >50% improvement in VLPP and pad test	70%	IV
Cross et al. [81]	Collagen (n = 139)	ISD (ALPP <60 cm H ₂ O) No urethral hypermobility	Median 18 months	Substantial improvement: ≥70% reduction in daily pad usage or grade 0 incontinence	74%	IV
Khullar et al. [39]	Collagen (n = 21)	USI Previous incontinence surgery (43%)	2 years	Cure: pad test leakage <1 g Improvement: ≥50% decrease in pad test leakage	57%	IV
Smith et al. [82]	Collagen (n = 94)	ISD (ALPP <65 cm H ₂ O)	Median 14 months	Cure: dry as reported by the patient Socially continent: ≤1 pad/day	67%	IV
Faerber et al. [83]	Collagen (n = 12)	Type I (VLPP >60 cm H ₂ O)	Mean 10.3 months	Cure: not defined	100%	IV
Herschorn et al. [23]	Collagen (n = 187)	SUI (n = 181) Neurogenic incontinence (n = 6) Detrusor overactivity (n = 31) Previous incontinence surgery (63%)	Mean 22 months	Cure: no incontinence symptoms or pad use on questioning Improvement: any decrease in grade of incontinence	75%	IV
Kreder and Austin [84]	Collagen (n = 22)	ISD (ALPP <60 cm H ₂ O or open bladder neck at rest) Majority had failed previous incontinence surgery	Mean 22 months	Cure: 'completely continent or rarely requiring a pad' Improvement: 50% decrease in pads/day	40%	IV
Richardson et al. [85]	Collagen (n = 42)	ISD (LPP <60 cm H ₂ O)	Mean 46 months	Cure: incontinence grade 0 Improvement: incontinence improved by 1 or 2 grades vs. baseline	83%	IV
Monga et al. [30]	Collagen (n = 29)	Proven USI All had prior unsuccessful incontinence surgery	24 months	Subjective cure: dry Improvement: change from daily to intermittent incontinence	68%	IV
O'Connell et al. [86]	Collagen (n = 44)	ISD (median LPP = 56 cm H ₂ O) Concomitant urethral hypermobility (n = 2)	Up to 7 months	Cure: no pads Improvement: <2 pads	63%	IV
Herschorn et al. [87]	Collagen (n = 31)	SUI (n = 29) Neurogenic incontinence (n = 2) Previous incontinence surgery (n = 18)	Mean: 8.4 months (cured) 4.5 months (improved)	Cure: 'no incontinence at all' Improvement: ≤2 pads/day and/or improvement of >1 incontinence grades	90.3%	IV

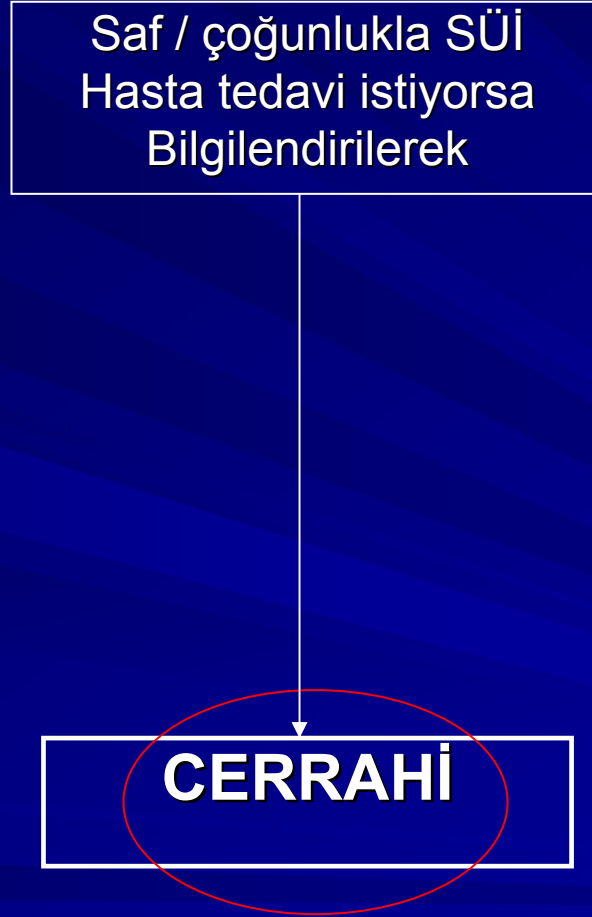
Tedavide: Enjeksiyon

- ISY
- Kollajen, karbon partikülleri, silikon
- Tekrarlanmalı, kısa süreli etki, cerrahiden daha az başarı

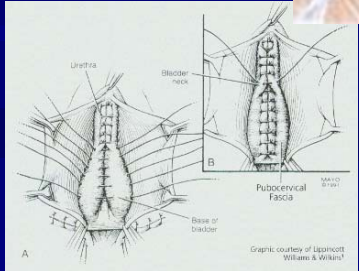
<i>Urethral bulking agents</i>		
• Urethral bulking agents show similar symptomatic improvement with both placebo and autologous fat	1	
• Less effective than conventional surgery	2	
• No evidence to show that any bulking agent is more effective than another	2	
• No data to compare urethral bulking agents with non-surgical treatments or with other minimal-access surgical techniques	2	
• Women should be aware that efficacy of ureteral bulking agents decreases with time, repeat injections may be necessary, and efficacy is less than that of other surgical techniques		B

Yüksek anestezi riski taşıyan yaşlı hastalar ve daha önce cerrahi uygulanmış ancak başarısız olmuş ve tam tedavi yerine düzelme bekleyen hastalarda önerilebilir

Tedavi



SÜİ Cerrahisi: Tarihsel Süreç



Ön onarım

Retropubik cerrahiler

İğne askılar

Otolog/allograft askılar

Kemik askılar

Orta-üretra slingler
e.g. SPARC™, TVT™

Biyolojik askılar

Trans-obturator tape

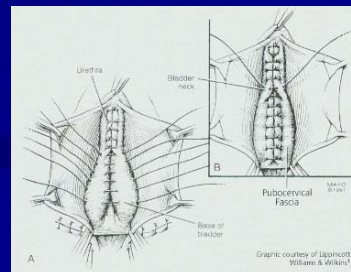
SÜİ Cerrahisi: Süreç

	B	E	G
Basitlik (B)			
Etkinlik (E)			
Güvenlik (G)			
Retropubik cerrahiler	✓	✓	✓
Ön onarım	✓		✓
İğne askılar	✓		
Otolog/allograft askılar		✓	✓
Kemik askılar	✓	✓	✓
Tension-free synthetic slings e.g. SPARC™, TVT™	✓	✓	✓
Biyolojik askılar	✓	✓	✓
Trans-obturator tape	✓	✓	✓

Kadın SÜİ Tedavisinde Ön Onarım :

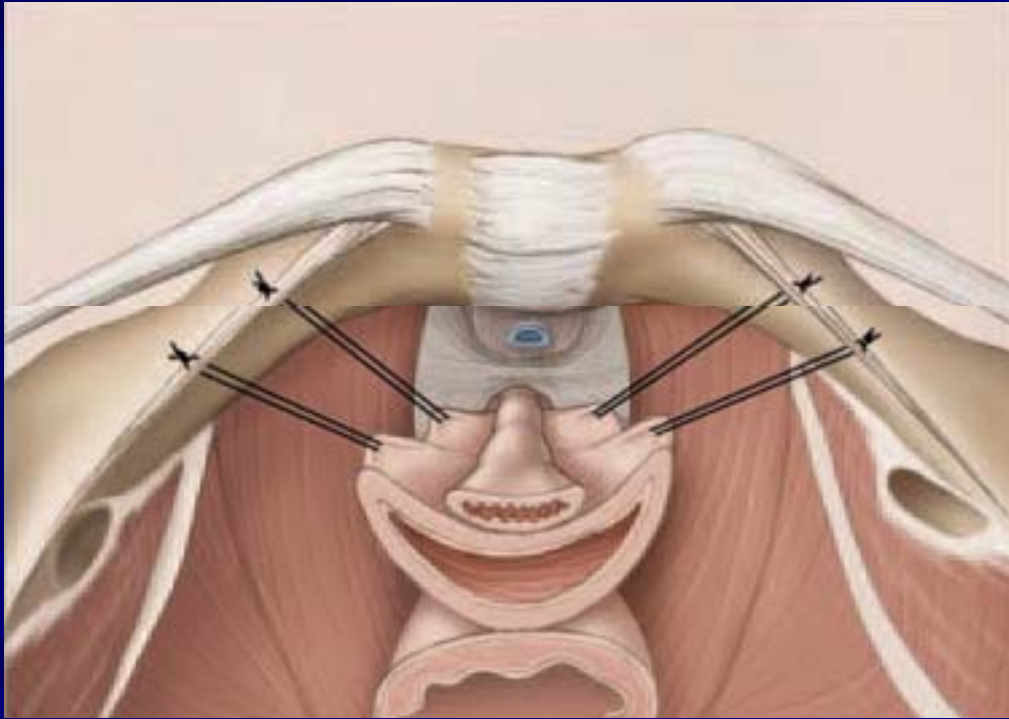
Table 8: Surgery for UI in women

Surgical approach	LE	GR
Anterior colporrhaphy		
• Outcome of anterior colporrhaphy is comparable to needle suspension, but less effective than open colposuspension. The effectiveness deteriorates substantially with time	2	
• Anterior colporrhaphy is not recommended as treatment of SUI alone		A



Tedavi: Burch – retropubik kolposüspansiyon

■ ISY + Hiper mobilite, hiper mobilite



- altın standart
- Açık, Laparoskopik
- Histerektomi
- Sakrokolpopeksi
- Prolaps

Tedavi: Pubovajinal sling

- Altın standart
- Otolog doku, **mesane boynuna** askı, retropubik alanda az gerilimle bağlama
- uzun dönem etkili – 15 yıl % 85 başarı
- otolog doku
- Sentetik meş???



THE LANCET

Volume 367, Issue 9504, 7 January 2006-13 January 2006, Pages 57-67

Linda Brubaker ve ark.,



The NEW ENGLAND
JOURNAL of MEDICINE

Rogers R.

**Burch kolposüspansiyonu ve pubovajinal
sling cerrahilerinin “altın standart”**

Surgical treatment for female stress urinary incontinence: what is the gold-standard procedure?

Maurizio Serati • Stefano Salvatore • Stefano Uccella •
Walter Artibani • Giacomo Novara • Linda Cardozo •
PierFrancesco Bolis

- 2005 yılından sonra literatür: daha az invazif yöntemler
- International Consultation on Incontinence (2005):
 - Enjeksiyonlar,
 - Orta-üretra gevşek slingleri
 - Burch

ÖNCELİK YOK

EAU GUIDELINES -2009

Surgical approach	LE	GR
<i>Open colposuspension</i>		
• Similar success compared to mid-urethral retropubic slings	1	
• Similar success compared to bladder neck slings	1-2	
• Similar success compared to transobturator slings	2	
• Risk of voiding dysfunction is higher than with TVT	1	
• Risk of voiding dysfunction is less than with slings	1	
• Prolapse after colposuspension is more likely than after TVT	1	
• The risk of de-novo DO is the same as after TVT	1	
• Mitrofanoff urethroplasty, BNS suspension, and paravaginal repair are not recommended for treatment of SUI alone		B
• Open colposuspension is an effective, long-lasting treatment for primary SUI		A
<i>Laparoscopic colposuspension</i>		
• Laparoscopic colposuspension is comparable to open colposuspension when performed by experienced laparoscopic surgeons	1-2	
• Equal or higher cure rates compared to TVT	1-2	
• Shorter operating time and faster recovery compared to TVT	1-2	
<i>Mid-urethral tapes</i>		
• TVT® is more effective than SPARC® tape	2	
• IVS® has similar efficacy as TVT®, but a higher complication rate	2	
<i>Mid-urethral tapes vs other procedures</i>		
• TVT® is equally effective as colposuspension and traditional sling operations	1-2	
• Operation time, hospital stay and return to normal activity is shorter with TVT® than with colposuspension	1-2	
• Post-operative voiding problems and need for prolapse surgery are more common with colposuspension	1-2	
<i>Retropubic tapes vs transobturator tapes</i>		
• Similar efficacy up to 12 months		
• Similar complication rates in Finnish study	1	
• Relative risk of bladder injury increased by 6-fold for retropubic sling		
• Relative risk of urethral injury increased by 4-fold for transobturator sling		

Kadın SÜİ tedavisi-2010

Recommendations for surgical treatment of SUI

Surgical procedure	GR
• Anterior colporrhaphy	NR
• Transvaginal BNS (needle)	NR
• Burch procedure: open	A
• Burch procedure: laparoscopic (by experienced laparoscopic surgeon only)	B
• Paravaginal	NR
• MMK urethroplasty	NR
• BN sling: autologous fascia	A
• Sub-urethral slings (TVT)	A
• Urethral bulking agents	B

Kadın SÜİ: tedavi alternatiflerinde değişim

- 2008: non-sistemik PubMed incelemesi
- Burch, fasyal slingler ve TOT'la ilgili çalışmalar
 - Burch: 66
 - PVS, IVS: 39

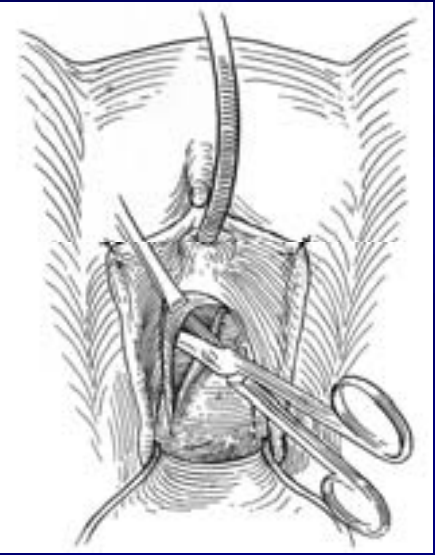
 - TVT / TOT: 458

Mid-üretral slingler

- 3 yol: Transvajinal, abdominal, transobturator
- Kısa, etkili
- Makropor, polipropilen, monofilaman
- Meş uzun dönemde etkin ve güvenli
- Obstrüksiyon ve işeme bozukl. az



Tedavi: Mid-üretral slingler: TVT



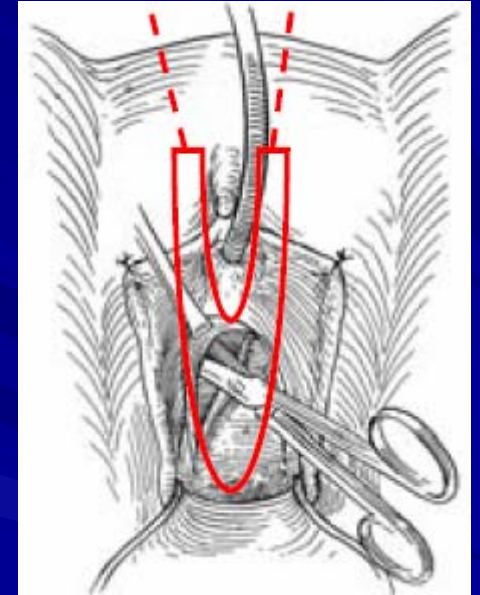
- Ulmstein 1996

Sub-üretral hamak: “Gevşek”,

- hemen etkili

- üretral hipermobilitite

- İSY



TVT vs Burch ve PVS

■ 9 RKÇ: TVT vs Burch

- Tüm başarı tanımlamalarına göre:
- TVT \geq Burch
- 11 yıllık sonuçlar: başarı devam ediyor
- Mesane perforasyonu TVT'de daha fazla

TVT vs Burch

Ward & Hilton:

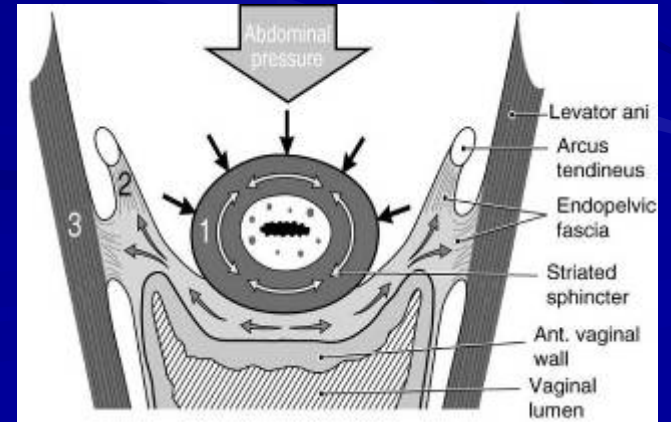
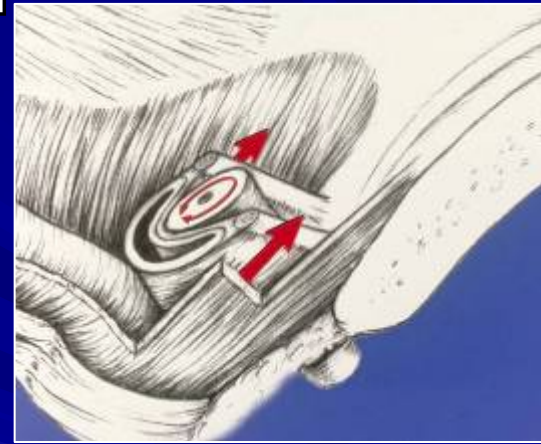
- 344 SÜİ'li kadın: TVT veya Burch
- 2 yıl takip
- 1 saatlik pet testi ile değerlendirme
- TVT : % 81
Burch : % 80

TVT vs Burch: Meta-analiz

Reference	Cases	Follow-up, mo	Definition of overall cure	Overall cure rate
Liapis 2002 [23]	TVT 36 Colposuspension 35	24	NR	84% 86%
Persson 2002 [31]	TVT 38 Lap. colposuspension 32	12	NR	NR
Ward 2002 [39]*	TVT 175 Colposuspension 169	6	NR	NR
Ustun 2003 [36]	TVT 23 Lap. colposuspension 23	11.3 13.5	No referred leak at interview, negative stress test, no urodynamic SUI	82.6% 82.6%
Paraiso 2004 [30]	TVT 36 Lap. colposuspension 36	12	NR	NR
Valpas 2004 [37]	TVT 70 Lap. colposuspension 51	12	NR	NR
Ward 2004 [40]*	TVT 175 Colposuspension 169	24	NR	NR
Bai 2005 [15]	TVT 31 Colposuspension 33	12	No referred leakage at interview and negative stress test	87% 87.8%
El-Barky 2005 [20]	TVT 25 Colposuspension 25	3-6	Not reported	72% 72%
Foote 2006 [22]	SPARC 49 Lap. colposuspension 49	24	No leak and VAS < 2	77.4% 81.4%

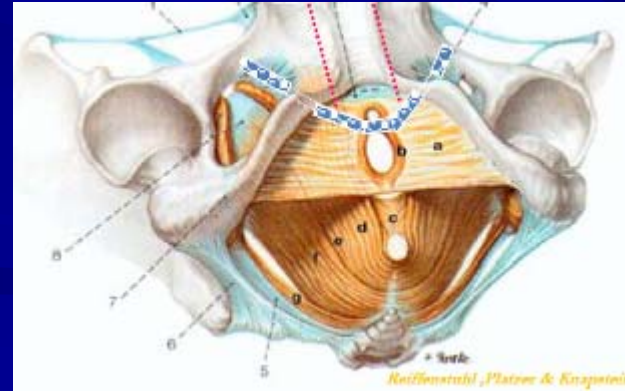
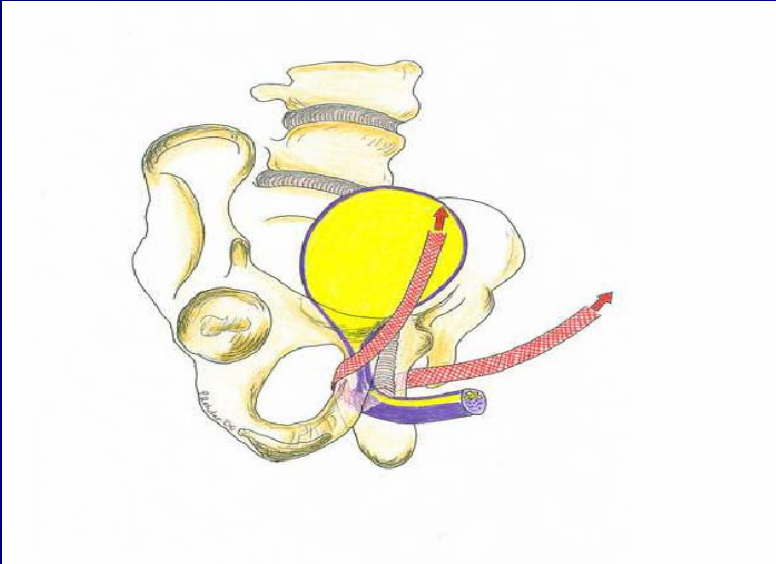
Mid-üretral slingler: TOT

- Son iki dekatta: Üretropelvik ligaman
 - Petros ve Ulmsten: Integral teori
 - De Lancey: Hamak teorisi
- Ulmsten: TVT
- Delorme ve de Leval: TOT



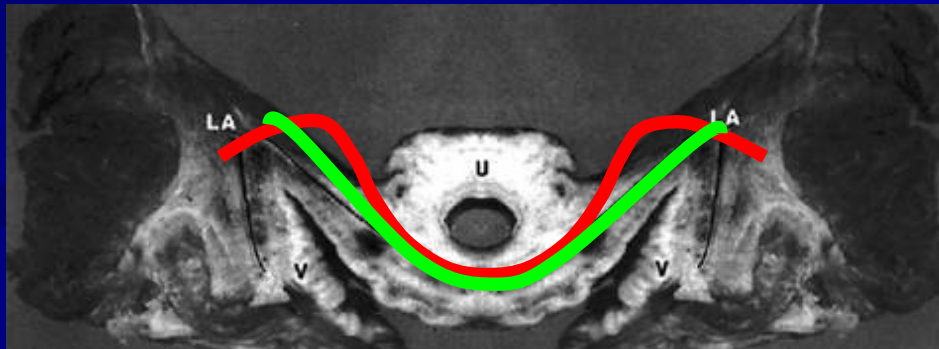
Tedavi: Mid-üretal slingler: TOT, TVT-O

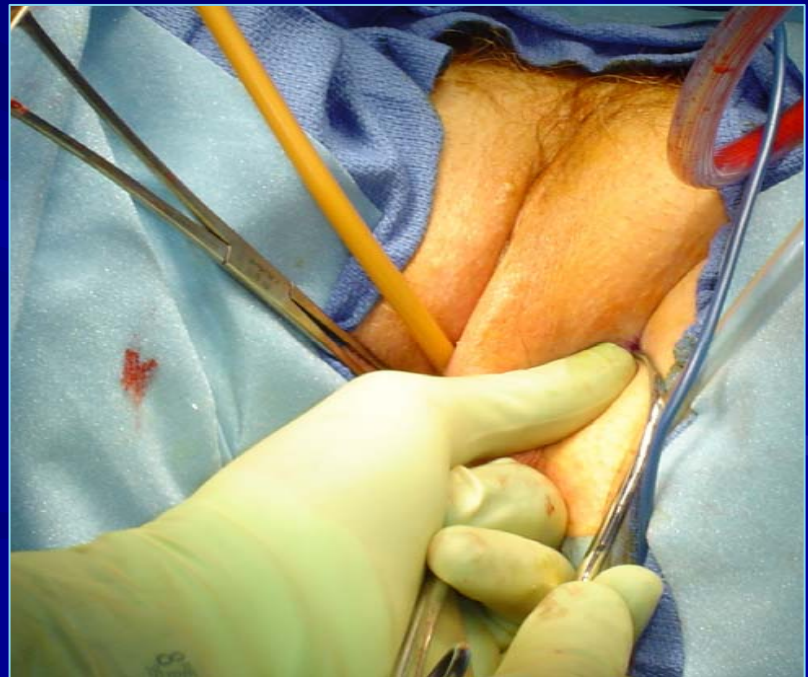
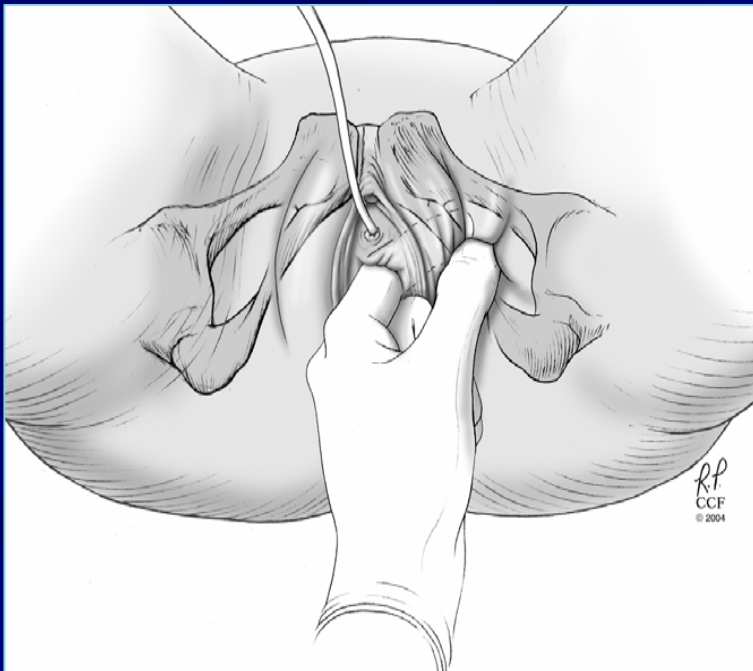
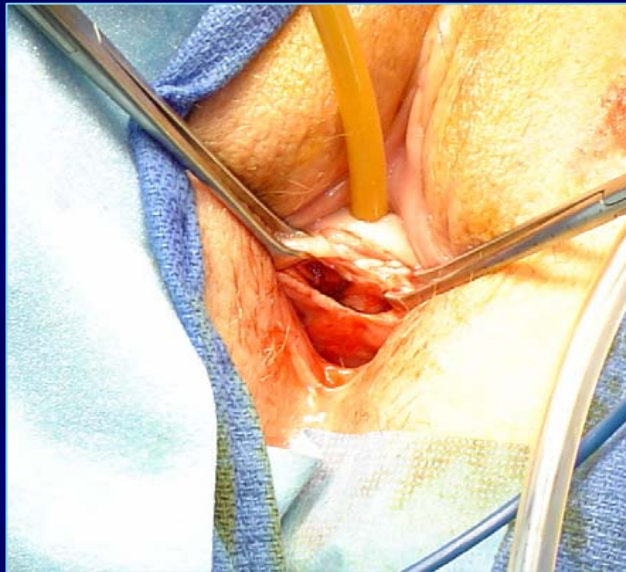
- Obturator kanal
- Daha az kanama,
- Daha az bağırsak, mesane yaralanma, ve obstrüksiyon riski
- Sinir ve damar yapılarından 1,5- 2 cm uzaklık



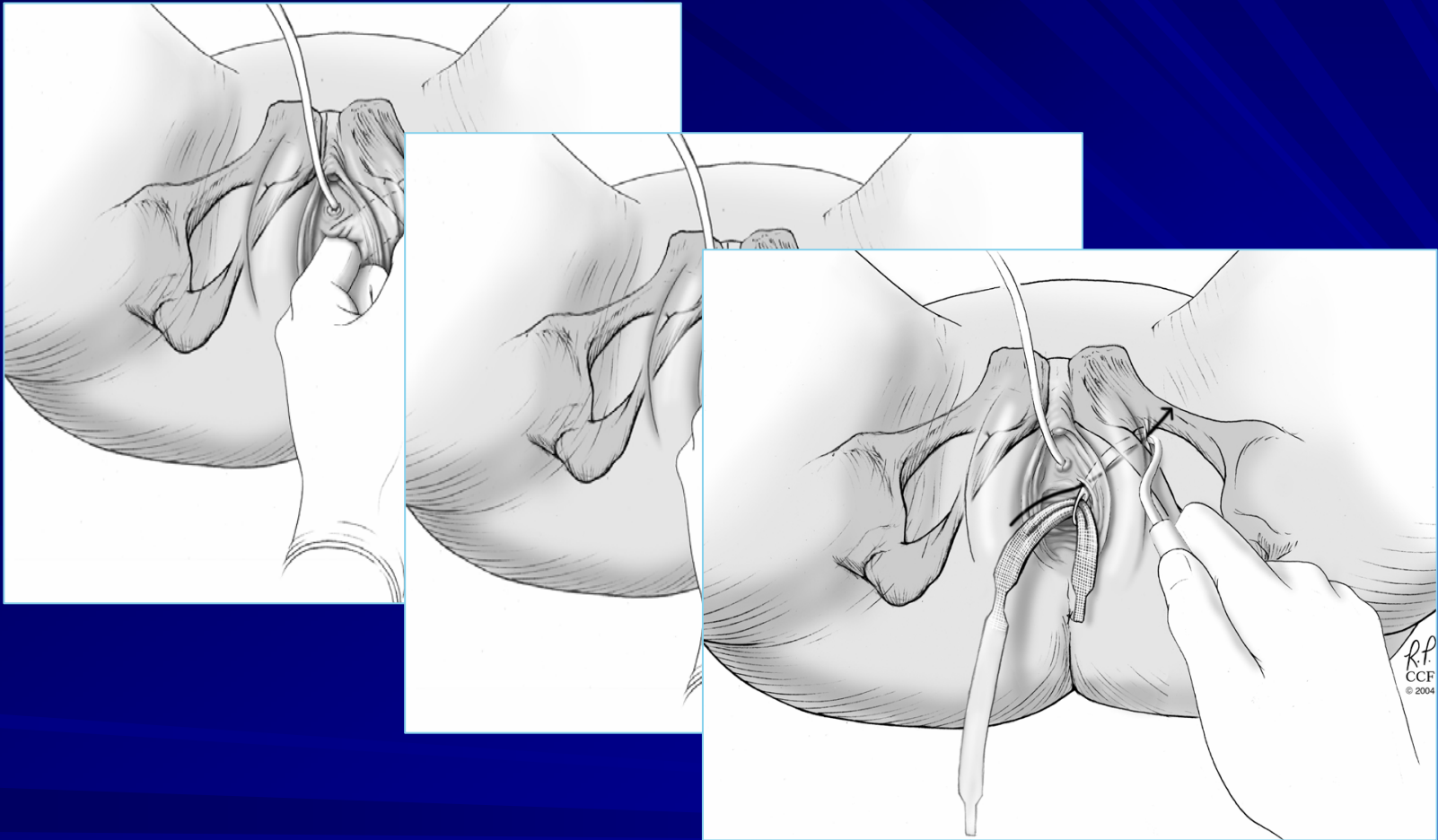
Tedavi: TOT

- Kısa süre: 12-14 dk.
- Sistoskopi gerekmiyor
- Güvenli
- Öğrenme eğrisi kısa
- Başarı: % 80.5- % 95

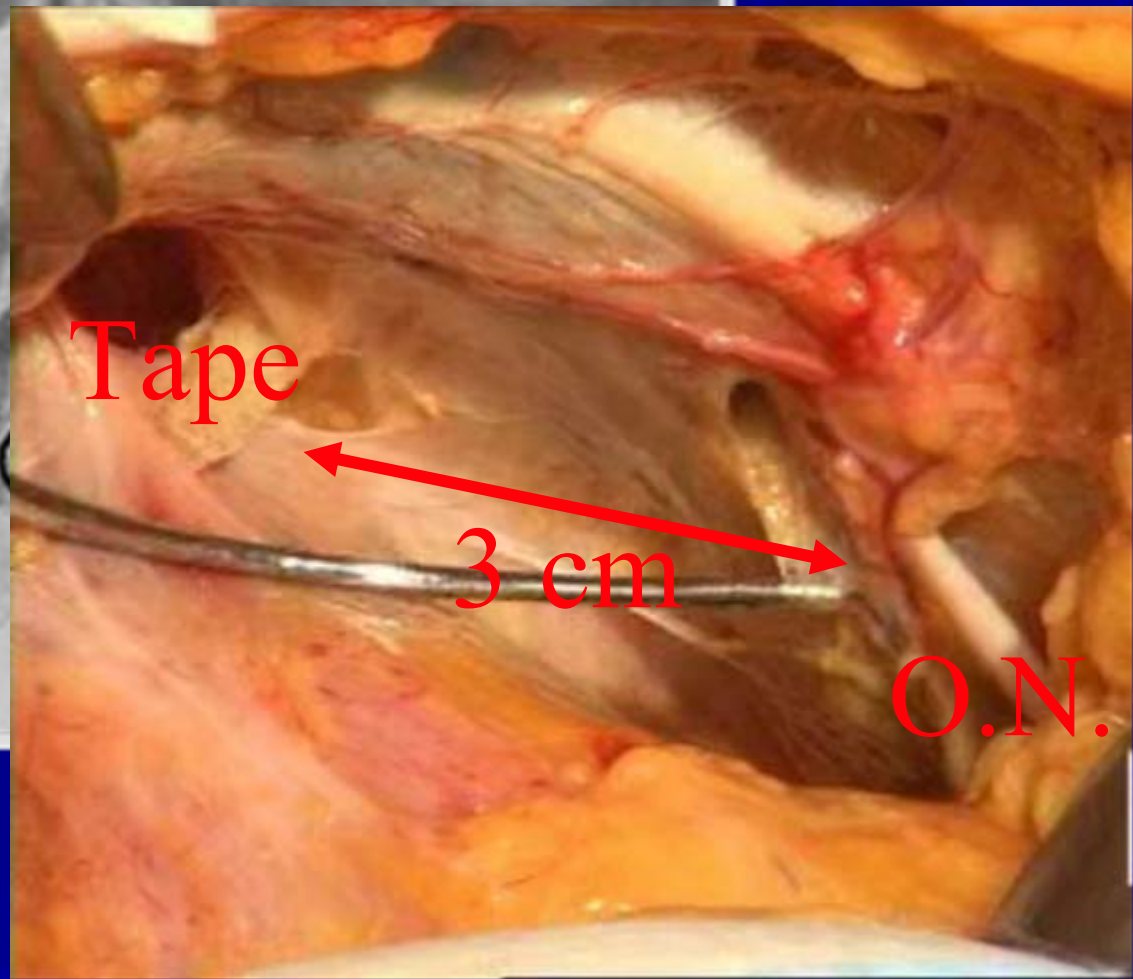
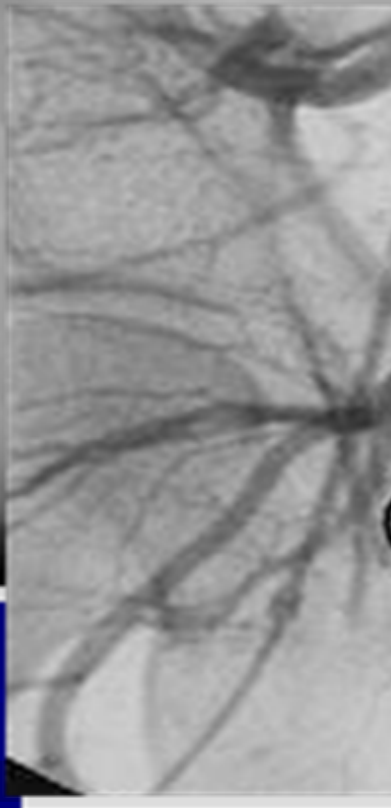
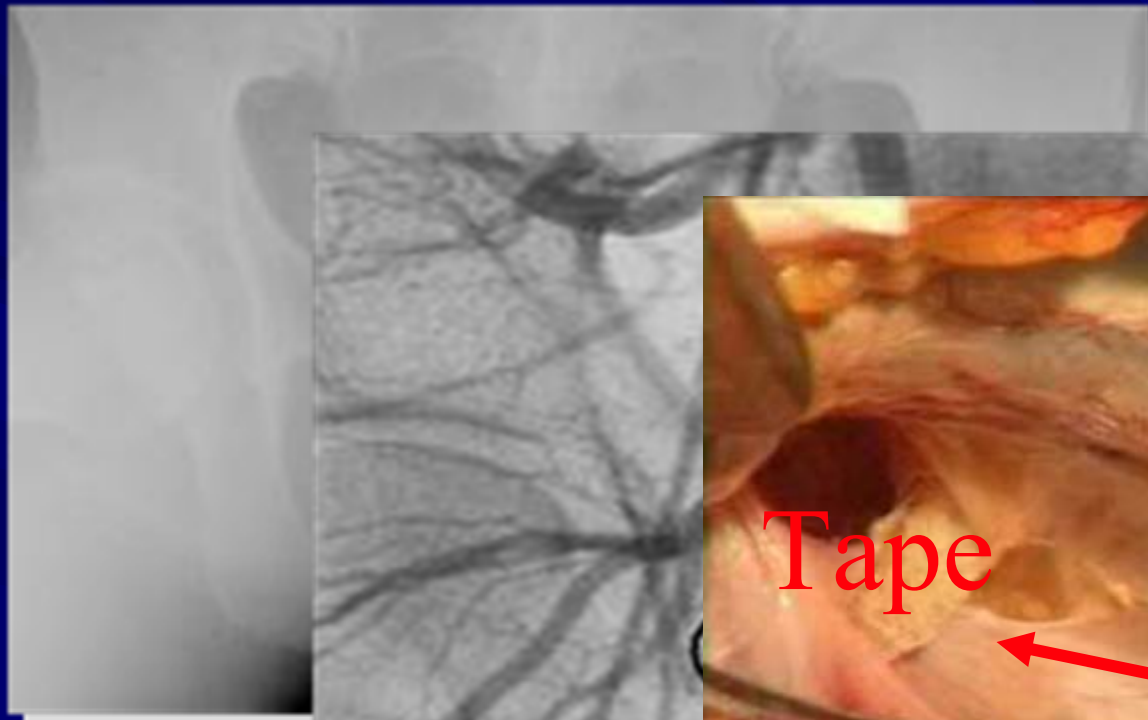




Pinch Manevrasi and TOT



T.O.T. : obturator sinir



TOT sonuçları: (Dr Delorme)

- 567 hasta
435 SUI
132 SUI + prolaps
Takip : 3 ay- 5 yıl
- Düşük morbidite
2 mesane hasarı, 1 üretra hasarı
- Düşük post-op ağrı
5 hastada 1hf-1ay obturator sinir ağrısı.
- SÜİ'li hastalarda
% 89: kuru
% 11 düzelme veya başarısız
% 3de novo urgency

Tedavi: TOT

- n: 479
- Obstrüksiyon: % 1- 19
- De novo urgency:: % 0-%6.3
- Mesane – üretra yaralanması: % 0- %2
- Kanama: % 0- % 2
- Erozyon: % 0- % 1



TOT: Başarı

Table 4 Stress urinary incontinence (SUI) cure rates after the TVT-O procedure

Reference	Number of patients	SUI cure rate (%)	Follow-up (months)
Liapis et al. [66]	43	90	12
Neuman [62]	300	97	12
Debodinace [64]	50	94	12
Lim et al. [78]	100	95	12
Zullo et al. [75]	37	89	12
O'Connor et al. [77]	43	65*	6
Meschia et al. [52]	117	89	6
Rinne et al. [74]	131	93	12
Zhu et al. [76]	27	93	24
Sola et al. [71]	96	100	6
Chen et al. [55]	54	85	9
Jakimiuk et al. [50]	35	89	12
Charalambous et al. [67]	50	94	12
Descazeaud et al. [68]	82	85	12
Liapis et al. [30]	61	87	12
Waltregny et al. [44]	91	89	36
Lee et al. [65]	60	87	12
Murphy et al. [70]	232	87	16
Lee et al. [54]	50	86	12
But et al. [81]	60	93	4
Long et al. [69]	68	88	12
Mora Hervas et al. [99]	90	91	12
Yang et al. [72]	17	88	12
Araco et al. [73]	100	83	12
Collinet et al. [51]	984	90	3
Feng et al. [61]	88	95	12
Total	3,109	±90%	3-36

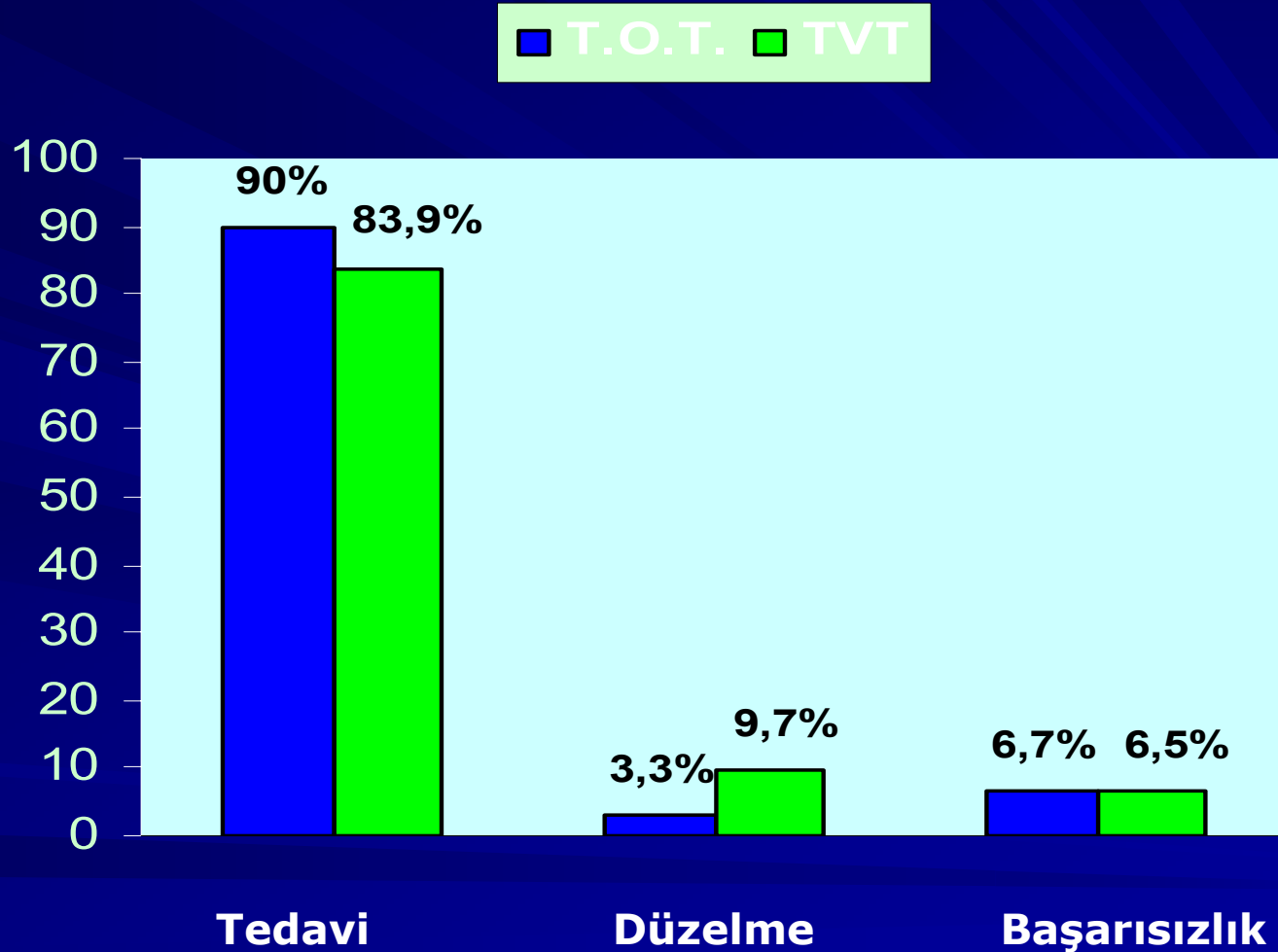
Total : 3109 olgu

• 3-36 ay takip

• % 84-%94

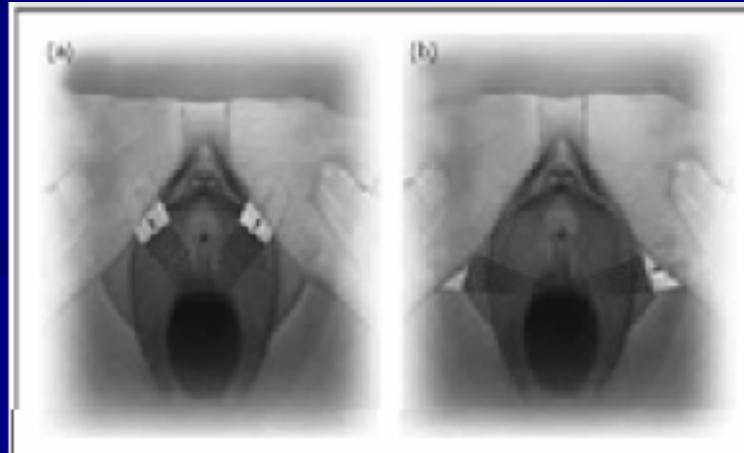
• ort. % 90

Objektif tedavi oranları



3. jenerasyon orta üretra slingleri

- İntegral teori :TVT
- TVT-secur, Mini-arc, vs, vs
- Prolen meş: 1.1 cm x 8 cm



Mini-slingler = minimal-sentetik subüretral slingler

- Daha az diseksiyon
- İğne geçişi yok, daha az süre
- Daha az kompleks
- Daha az komplikasyon
- Kısa teyp
- Lokal anestezi



Minimal invazif sling

- Oliviera R, et al:

15 TVT-secur

%71 başarı, %14 düzelme, %15 başarısız

Ağrı: %2.3, retansiyon:%1,

de novo urgency: %6, ağrı: -, hematom: %1.



- Mescia et al. 2009, Lee et al. 2010,

Tartaglia et al. 2009, Neuman M, et al 2009

Krofta et al. 2010, Khandwala et al 2010

%52-%100

Single incision mini-sling versus a transobutator sling: a comparative study on MiniArc and Monarc slings.

De Ridder D, Berkers J, Deprest J, Verguts J, Ost D, Hamid D, Van der Aa F.

■ 131 SÜİ'li kadın hasta, 1 yıl takip

	<u>75 Mini-Arc,</u>	<u>56 TVT</u>
Süre:	11 dk.	19 dk.
Komp.	-	-
Başarı	% 85	% 89

EAU, AUA bildirileri:

- TVT secur: 642 kadın
- Ort. Yaş: 54
- Ort. 6. ay takipte (+) stres testi: %11
12. ay sonunda: %12.5 başarısızlık
- 1 yılın sonunda başarı: % 87.5
- 3 mesane perforasyonu, 2 retansiyon

Short-term assessment of a tension-free vaginal tape for treating female stress urinary incontinence

Rui Oliveira, André Silva, Rui Pinto, João Silva, Carlos Silva, Miguel Guimarães, Paulo Dinis and Francisco Cruz

- 107 hasta
- Ort. Süre: 12 dk.
- Komplikasyon (-), 1 hastada 1 hf süreli geçici retansiyon.
- 15 ay takip: % 85 kuru/düzelme

Sub-üretral mini-slingler, minimal invazif slingler

- Ajüst (BARD)
- TVT-Secur (Gynecare)
- Contasure needless (Neomedica)
- Mini-Arc (AMS)
- Vesica-Kit
- TFS : Tissue Fixation System

-Küçük meş yapı

-Uzun süre kalacaklar mı?

-Fiksasyon yeterli mi?

- Teyp güçlü olacak mı?

Tedavi: Kime hangi sling?

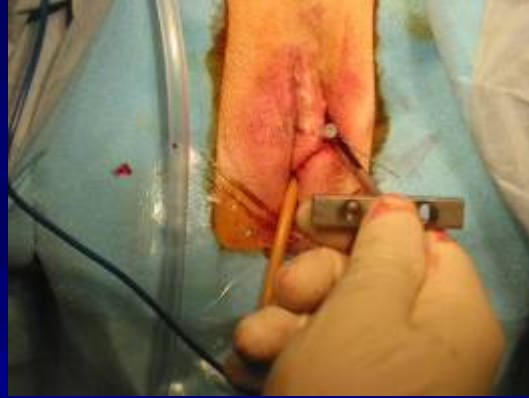
- SÜİ + hipermobilite: Burch, TVT, TOT
(orta üretral slingler)
- SÜİ: (-) hipermobilite: PVS, enjeksiyon (??)
- Prolapsta gizli SÜİ: Tümü
- Önceki tedavi başarısız
Erozyone meş : PVS, enjeksiyon (???)
VVF, divertikülle birlikte

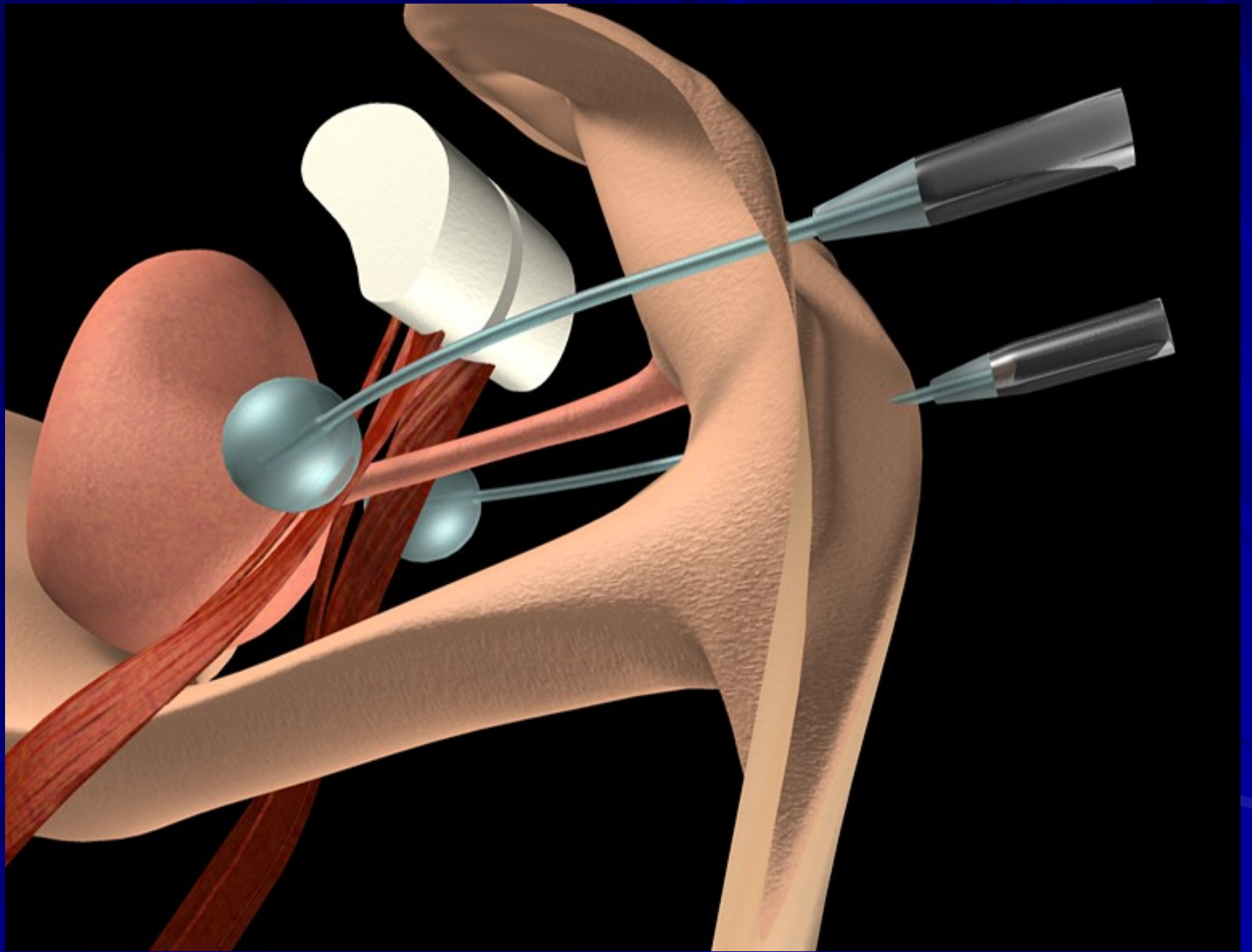
Kadın SÜİ

- Yeni
- Minimal invazif
- Etkili

ACT®

Mesane boynu balon uygulamaları- ayarlanabilir SÜİ tedavisi





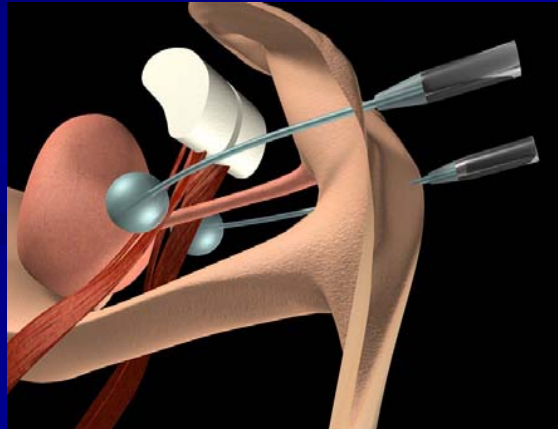
Adjustable continence therapy for recurrent female stress urinary incontinence from severe intrinsic sphincter deficiency

Kocjancic E.¹, Crivellaro S.², Jones L.¹, Ranzoni S.³, Bonvini D.³, Grosseti B.², Frea B.²

¹University of Illinois at Chicago, Dept. of Urology, Chicago, United States of America, ²Azienda Ospedaliero Universitaria, Dept. of Urology, Udine, Italy, ³Ospedale Maggiore Della Carita, Novara, Italy



- Rekürren SÜİ, Komplike SÜİ, Şiddetli SÜİ
- Ayarlanabilir SÜİ tedavileri
- 57 hasta, ort. 58 ay takip



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	Baseline (n=57)	12 Month (n=52)	24 Month (n=52)	36 Month (n=51)	48 Month (n=41)	60 Month (n=34)	72 Month (n=29)
IQoL	27.2 (SD 15)	65.9 (SD 17)	70.4 (SD 16)	70.4 (SD 16)	76.1 (SD 17)	78.4 (SD 17)	78.6 (SD 18)
Pad Usage	5.6 (SD 2.28)	1.61 (SD 2.10)	1.24 (SD 1.45)	1.14 (SD 1.84)	1 (SD 1.72)	0.65 (SD 1.10)	0.41 (SD 0.78)
PGI		2.33 (SD 1.04)	1.98 (SD 0.92)	1.78 (SD 0.86)	1.88 (SD 1.29)	1.76 (SD 1.0)	1.62 (SD 0.94)

- % 68 kuru, % 87: iyileşmiş
- % 14 cihaz çıkarılması (migrasyon)
- % 3.5 erozyon
- % 8.8 bozulma

Tedavi: Sonular

- TVT, uzun dnlem sonuları ve daha az invazif oluu ile Burch uygulamalarını azalttı.
- TVT ve PVS,; baarı oranları aynı
- TVT ve TOT; benzer baarı oranları
- Mid-retral slingler: daha az riskli

Tedavi: Sonular 2

- Mesane, kolon yaralanmaları ve kanama:
TOT'da daha az
- Kollajen enjeksiyonları cerrahiden daha az başarılı
- Nüks SÜİ: Burch, PVS ve TVT ???
- % 50-90 başarı

Tedavi: Sonular 3

- TVT: 15 yıllık gemiř
- Kalıcı, etkin tedavi, minimal komplikasyon
- TOT'da benzer başarı
- Daha az invazif
- Mini-slingler
- Kk hcre transferleri

İnkontinans ve doku mühendisliği

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