



MANAGEMENT OF RECURRENT SUI

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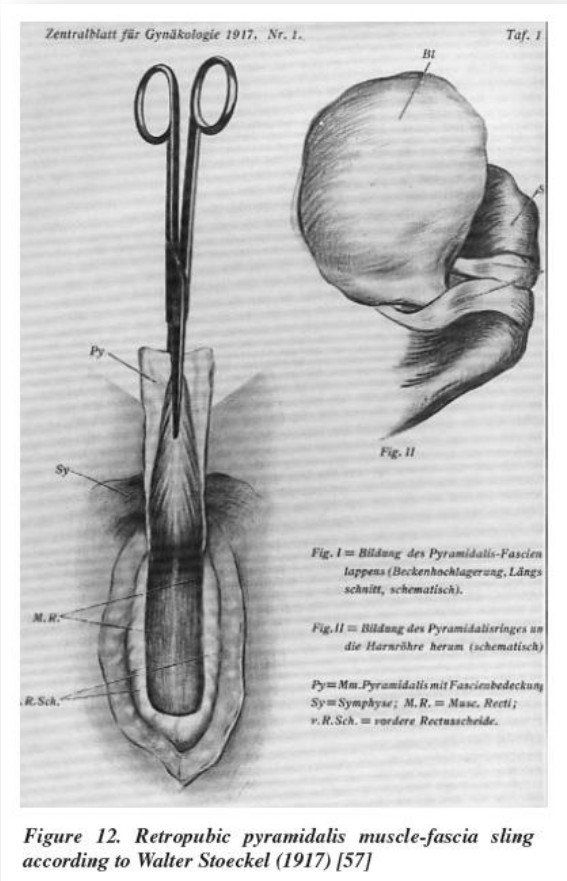
PROCEDURES FOR STRESS URINARY INCONTINENCE

- History & Evolution
- Principles & Rationale
- Evidence & Critique
- Complications & Management
- Public (Press & Women's views)
- Recommendations

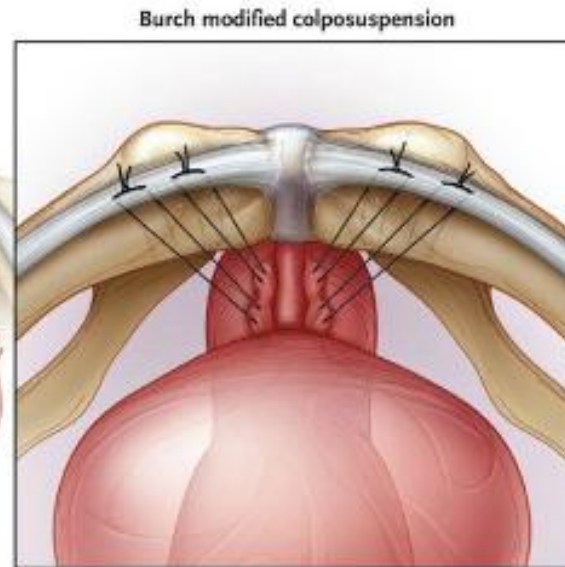
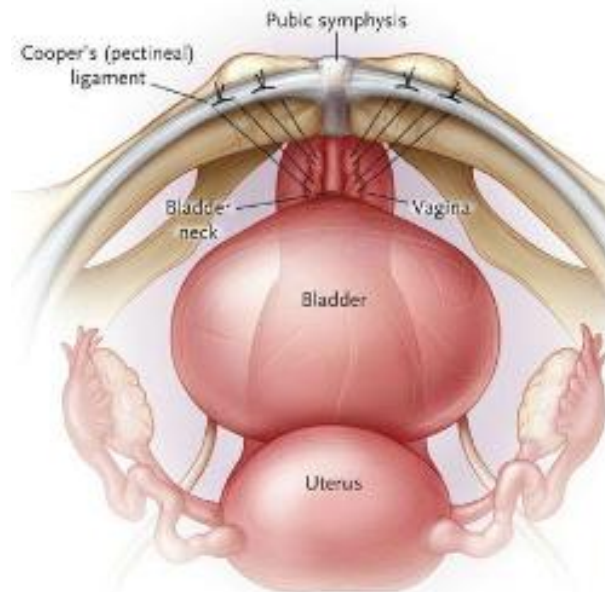


HISTORY...

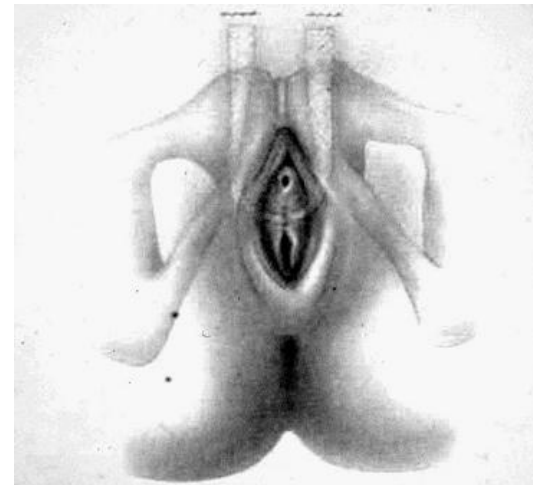
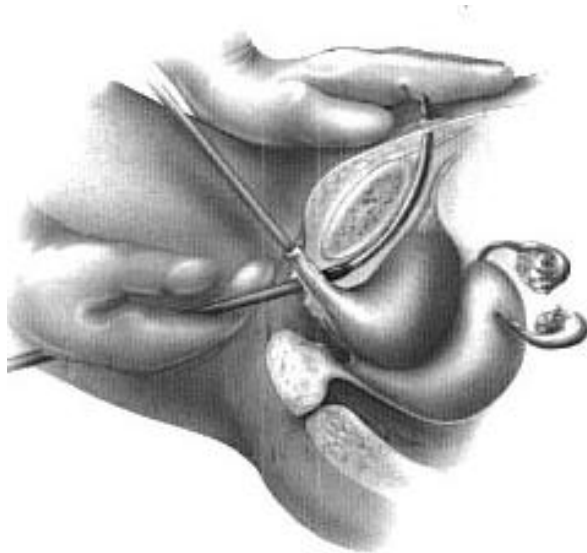
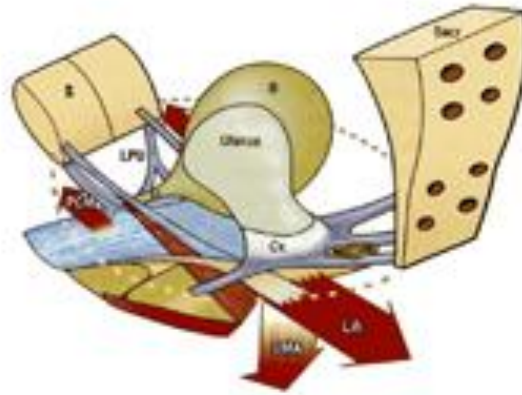
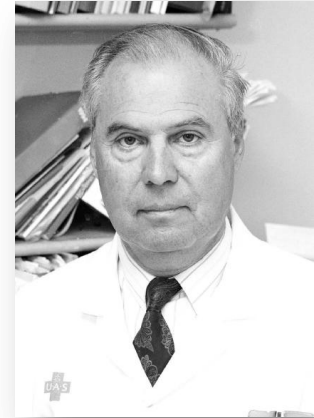
- 1961 - Burch colposuspension
- 1995 - Ulmsten&Petros TVT
- 2001 - Delorme TOT out-in
- 2003 - De Leval TVT-O in-out
- 2006 - Single incision slings



JOHN C. BURCH, MD (1900-1977)

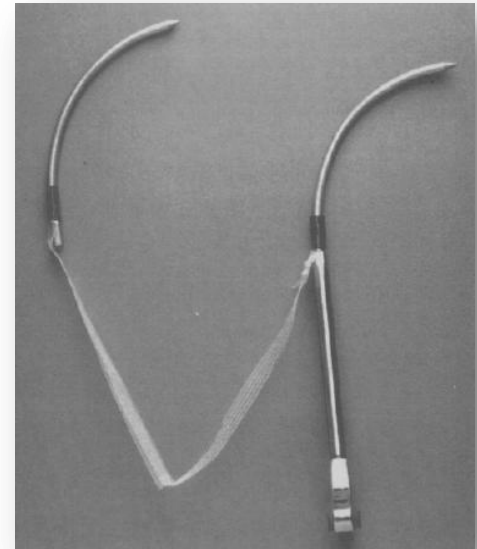


ULMSTEN & PETROS MID 90's



AN AMBULATORY SURGICAL PROCEDURE UNDER LOCAL ANESTHESIA FOR TREATMENT OF FEMALE URINARY INCONTINENCE

- Ulmsten et al Int Urogynecol J 1996; 7, 81-86
- 75 pts
- 2 yrs FUP
- 84% cured
- 8% significantly improved



A PROSPECTIVE MULTICENTER RANDOMIZED TRIAL OF TENSION-FREE VAGINAL TAPE AND COLPOSUSPENSION FOR PRIMARY URODYNAMIC STRESS INCONTINENCE: TWO-YEAR FOLLOW-UP

Ward & Hilton, AJOG, 190, 2, 2004, 324-331

Cure rates	TVT	Burch
Subjective	79%	78%
Objective (pad test)	81%	80%



SURGICAL PRINCIPLES

- Pubo-urethral fixation of mid-/distal urethra
- Repositioning of bladder neck
- Improvement of coaptation of urethral endothelium



EPIDEMIOLOGY

- Prevalence of SUI 1:5
- Half of all incontinent women are affected by SUI
- Treatment fails in 10–20% of women
- In the USA, 120 000 women undergo surgery for UI each year
- The expected absolute numbers of women with failures and recurrences as well as recurrent procedures are high



available at www.sciencedirect.com
journal homepage: www.europeanurology.com



European Association of Urology



Female Urology – Incontinence

Surgical Treatment of Recurrent Stress Urinary Incontinence in Women: A Systematic Review and Meta-analysis of Randomised Controlled Trials

Wael Agur^{a,*}, Mohamed Riad^a, Silvia Secco^b, Heather Litman^c, Priya Madhuvrata^d,
Giacomo Novara^b, Mohamed Abdel-Fattah^e

- TVT and TOT: similar patient-reported & objective cure rates
- Both interventions had a comparable risk of further surgical procedures.
- No significant difference between Burch and RP-TVT (1 RCT) in patient-reported improvement (OR: 0.33; 95% CI, 0.01–8.57) or objective cure/improvement (OR: 0.52; 95% CI, 0.13–2.05)



AOGS REVIEW ARTICLE

The surgical management of recurrent stress urinary incontinence: a systematic review

KOSTIS I. NIKOLOPOULOS¹, CORNELIA BETSCHART² & STERGIOS K. DOUMOCHTSIS¹

- wide spectrum of surgical interventions reported for secondary or tertiary treatment of SUI.
- lower success rate compared with those reported following primary procedures



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KOSTIS I. NIKOLOPOULOS¹, CORNELIA BETSCHART² & STERGIOS K. DOUMOCHTSIS¹

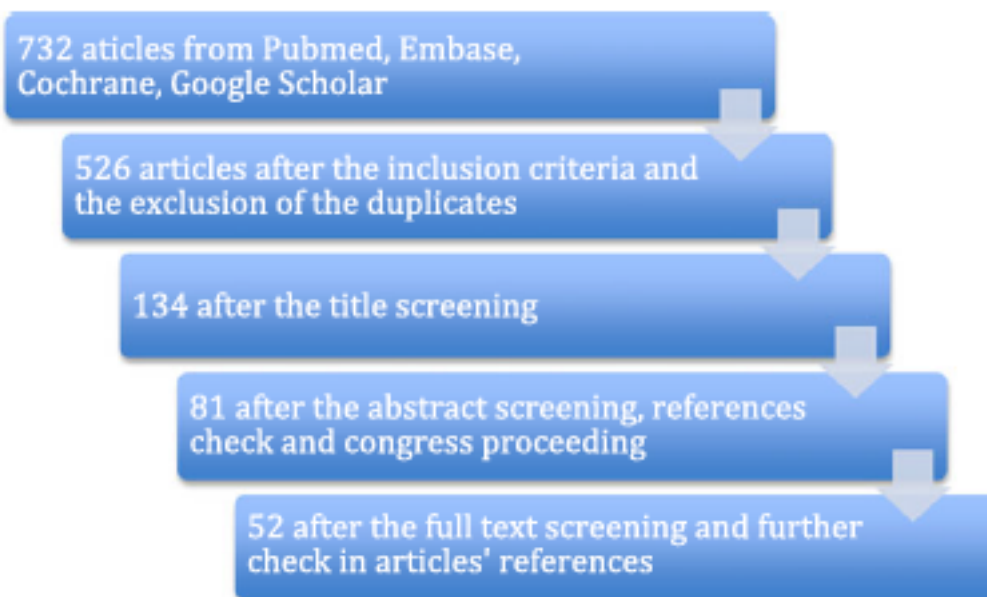


Figure 1. Selection process for the review of secondary incontinence procedures in recurrent stress urinary incontinence.

BURCH COLPOSUSPENSION

- 7 studies on Burch for rSUI (276 cases)
 - 76% success rate (95% CI 5.04) (15–21)

Nikolopoulos, Betschart & Doumouchtsis 2015

- Burch should be avoided after >1 previous operation



BURCH COLPOSUSPENSION

Author Year	Design / cohort size	Index procedures	Internal validity	Outcome measures	Success rates	Complication rates	FUP
Amaye-Obu 1999	R/S 26 cases	<ul style="list-style-type: none"> • Burch • AVR • Sling • MMK 	.40% were excluded Not consecutive	cough stress test.	<ul style="list-style-type: none"> • 81% after 1 procedure • 25% following 2 procedures • 0% after 3 procedures 	<ul style="list-style-type: none"> • Bladder laceration (1 pt) • Intraoperative hemorrhage (2pts, 4%) • UTI: 1 • DO 2 (8%) 	2 yrs
Nitahara 1999	R/S 60 cases	Burch At least 1 suspension procedure (range 1 to 8, mean 2.7).	R/S 85% completed the study FUP 3-15 yrs	Standardized questionnaire Success: > 80% satisfaction and the use of ≤1 daily.	96,5% satisfaction rate 0,15 pad daily.	NR	6,9 yrs



MUT AFTER FAILED BURCH

Author Year	Design / cohort size	2ry procedure	Internal Validity	Outcome measures	Success rates	Complication rates	FUP
Sivaslioglu 2011	P/S 29 cases (initial cohort of 262)	TVT (79,3%)/ TOT(20,7%)	Small numbers Follow-up?	Cough & Pad	<ul style="list-style-type: none"> 62.1% TVT 57.1% TOT, 7 pts had a tertiary TOT, 4 cured (57.1%). 	None	NR
Syao Y 2011	24 cases	TVT	small number retrospective.	UPP (cough). <ul style="list-style-type: none"> Cure: Improve ment Failure 	overall success rate: 70,8%	<ul style="list-style-type: none"> Bladder injuries 25% UTI 33.3% De novo UUI 20.8% Urinary retention 4% TVT migrated 4% 	57 M

REPEAT MUT

Author Year	Design / cohort size	Index procedure s	Secondary procedure	Internal validity	Outcome measures	Success rates	Complication rates	FUP
Sabadell 2011	P/S & R/S 23 cases	TOT	TVT	Partly R/S small numbers	cough stress test pt satisfaction	75%	Bladder perforation (8.7%). De novo urgency (21.7%),	36 M
Kobi Stav 2010	R/S 77 cases	TVT/TOT	TVT/TOT	Small numbers (n=29,TOT as repeat surgery Compared to TVT	Subjective cure:	TVT after TVT 67% TVT after TOT 74% TOT after TVT 53% TOT after TOT 40%	De novo urgency (30%) De novo UUI (22%)	40 +-19 M
Van Baelen 2009	R/S 21 cases	TOT	TVT(5), TOT (16)	No clinical objective measures	ICIQ	53% cured 5% improved	Infection (n=1) De novo urgency (n=2)	17 M
Lee KS 2007	R/S 29 cases	TVT/TOT	TVT/ TOT	small numbers short-term follow up.	stress cough test	75,9% cured 6,9% improved overall 92,3% TVT 62,5%TOT(n=0.089)	bladder perforation (1 pt, 3.4%). De novo urgency 13.0%. VD in 10.3%.	18,1+- 8,4 M
Moore 2007	R/S 5 cases	TOT	TVT	Very small sample size and short FUP	1-h pad test UPP (cough)	100%	NR	17 M
Liapis 2009	31 cases	TVT, TOT	TVT	lack of multivariate analysis small number	cough stress test pad test	Cured 75%, Improved 6,5%	bladder perforation: n:1 (3.2%) Bleeding : n:1 (3.2%) de novo UUI :3 (9.6 %) urgency :13% dysuria: 16.1% VD 17% UTI 6.4%.	18,6 M
Tsivian 2007	R/S 12 cases	TVT (n=9) TOT (n=1) IVS (n=2)	TVT (n=5) TOT (n=3) IVS (n=4)	Small sample size.	subjective	91,7%	Rolled tape (1 pt) De novo urgency(n=3)	23.2 M (14-44)
Smith 2011	80 cases	TOT/TVT	TOT/TVT	Absract.	NR	55% TOT x 12 more likely to fail than the TVT	NR	1 year

REPEAT TAPE, TVT AS A SECOND PROCEDURE

- Jordi Sabadell (2011)
overall success rate: 75%
- Stav (2010)
TVT after TVT 67%
TVT after TOT 74%
- Moore RD (2007)
100% success

REPEAT TAPE, TOT AS A SECOND PROCEDURE

- Stav et al (2010)
TOT after TVT 53% cured
TOT after TOT 40% cured
- Lee KS et al (2007)
62,5% cured
- Smith et al (2011): “TOT is 12 times more likely to fail than the TVT as a secondary procedure”.



AFTER FAILED MIDURETHRAL SLINGS...

Repeat tape

- Success rates: 40-100%.
- Sample sizes (5 - 80 cases)
- Repeat RP approach - 71% vs repeat TO – 48%.
- De novo urgency (30% vs 14%, $p<0.001$) and de novo UUI (22% vs 5%, $p<0.001$) more frequent in the repeat group compared with the primary group. (Stav 2010)

Laparoscopic Burch

- Objective and subjective cure rates were 54.5% and 92.9%, (n=6, 24.5 months)

Open colposuspension for failed MUS

- Objective and subjective cure rates 77 and 85% (n=13, 12 months)

Giarenis et al 2012

Bulking

- Cure rate: 34.8%
- “benefit”: 92%
- satisfied with the treatment: 77% (n=23, 10 months)

Lee HN et al (2010)



TAPE AFTER FAILED BULKING INJECTIONS

- Cayrac M (2010) 11 cases
- Altman D et al (2009) 7 cases
- 81-100% subjective cure rates
- Short term follow up (9,9 and 2,9 months respectively)



LAPAROSCOPIC TWO-TEAM SLING PROCEDURE

- Retrospective study
- A suburethral polypropylene mesh was introduced vaginally and sutured to Cooper's ligaments
- Objective success was reported by 22/24 (91.7%)

Hassonah et al, 2013



PUBOVAGINAL SLING

- 4 studies on pubovaginal slings for rSUI (140 cases)
- 79.3% pooled success rate
- polypropylene pubovaginal sling
 - 88 women - retrospective study
 - 85.2% cured
 - 9.1% improved
 - 5.7% failed

Morgan et al 1995

- Autologous rectus fascia
 - equally effective with synthetic MUS
 - higher rates of adverse outcomes, including suprapubic pain, pelvic abscesses, or a longer hospital stay

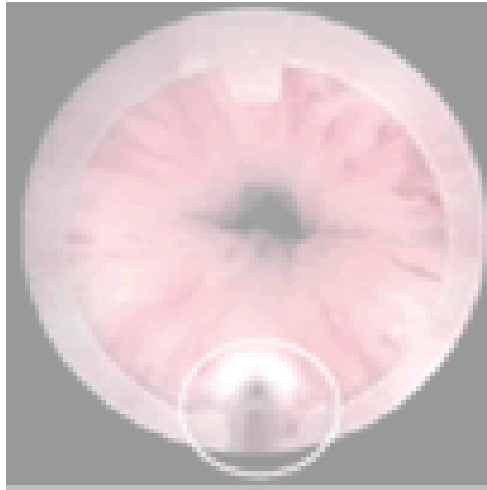
Shapiro et al 2010

Kane et al 1999

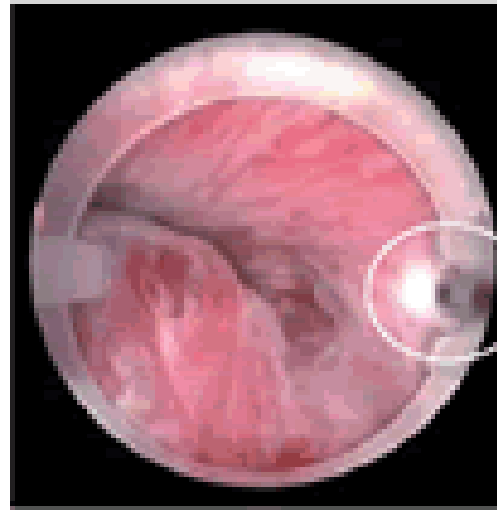
Petrou et al 2001



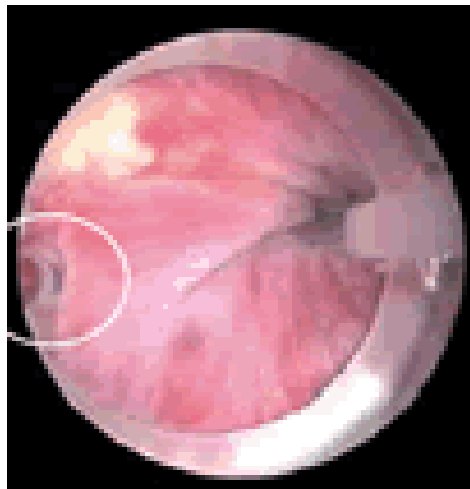
BULKING INJECTIONS



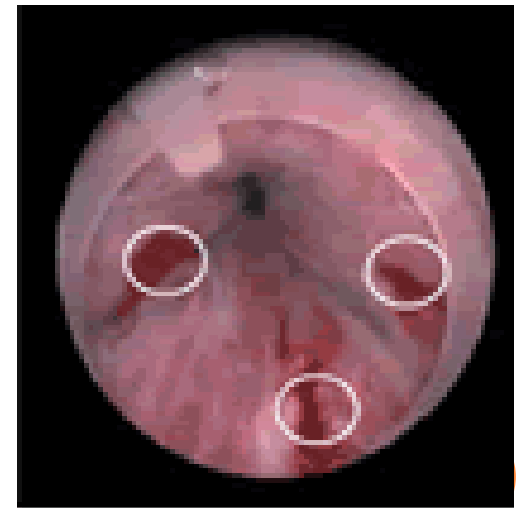
6 o'clock



3 o'clock



9 o'clock



BULKING INJECTIONS

- 2 studies (Macroplastique and Durasphere) for rSUI
- 79 cases
- 38% pooled success rate

Kim et al 2012

Lee et al 2010

- 92%: “benefit”
- 77% satisfied

Lee et al 2010



ADJUSTABLE TAPE FOR RECURRENT SUI

Not commonly used

- 6 studies
- more complications and similar success rates to the secondary procedures
- Aboseif S.R. (2009): 52% cure 80% improvement (n=140)
- 84% of them had previously undergone at least 1 prior unsuccessful incontinence surgery.



ADJUSTABLE TAPE FOR RECURRENT SUI

- Kocjaniic E. (2010)
- 57 patients
- 68,4% required single or multiple adjustments during the 6 year follow up
- Complications necessitating device removal developed in 21.1% of patients



TAPE FIXATION / SHORTENING / LOOSEN OR TIGHTEN

- 2 studies
- Seol Kim et al & de Landsheere et al (2010)
- 10 and 8 cases respectively
- Success rates:
 - 6/10 patients (complete dryness - Seol Kim et al)
 - 3/8 (de Landsheere et al)



SALVAGE SPIRAL SLING

2 studies

- Rodriguez et al (2010)
- Mourtzinos (2008)

72% - 75,6% improvement (patient questionnaires)

- 15-month follow up



ARTIFICIAL URINARY SPHINCTER FOR RECURRENT SUI

- 4 cohort studies
- 70%-87,5% satisfaction (pad use ≤ 2 per day)
- long term follow up (>5years)
- Vayleux et al. (2011) reported 215 cases
- Previous surgical procedures in 88.8% of the patients
- 158 patients (73.5%) were continent in 6 years follow up.



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- Burch: 76%
- MUS: 66.2%
 - TOT lower than RP
- PVS: 79.3%
- Adjustable continence therapy & adjustable slings: 53.8%
- MUS fixation procedures: 61%
- Urethral bulking injections 38%
- Laparoscopic two-team sling procedures, salvage spiral slings, & AUS: limited data



DISCUSSION

- Our review
- Rigorous methodology
- Specific inclusion and exclusion criteria
- Extensive quality assessment
 - OCEBM
 - GRADE
- Definitions of cure heterogeneous
- Follow-up times are variable
- High variability in reporting numbers & types of complications



DISCUSSION

- The quality of the outcome measures used widely variable
 - Difficulties in estimating pooled success rates
 - Causes of treatment failure and recurrence
 - Complications have been inconsistently reported (selection, reporting and positive outcome bias).
- Wide spectrum of surgical interventions for secondary or tertiary treatment
- ? recommending interventions for the management of recurrence following failed continence surgery



PREVENTION



Continence outcomes following partial excision of vaginal mesh exposure after mid-urethral tape insertion

Maya Basu^{a,*}, Maha Gorti^b, Richards Onifade^c, Anna Franco^a, Michelle Fynes^a,
Stergios K. Doumouchtsis^a

- Over a third of women experience recurrent SUI after surgical management of vaginal MUT exposure.
- Type of MUT, menopausal status, and the time interval between tape insertion and excision were not significantly associated with the risk of recurrent SUI.

EJOGRB 2013



Three-year results from a randomised trial of a retropubic mid-urethral sling versus the Miniarc single incision sling for stress urinary incontinence

Maya Basu & Jonathan Duckett

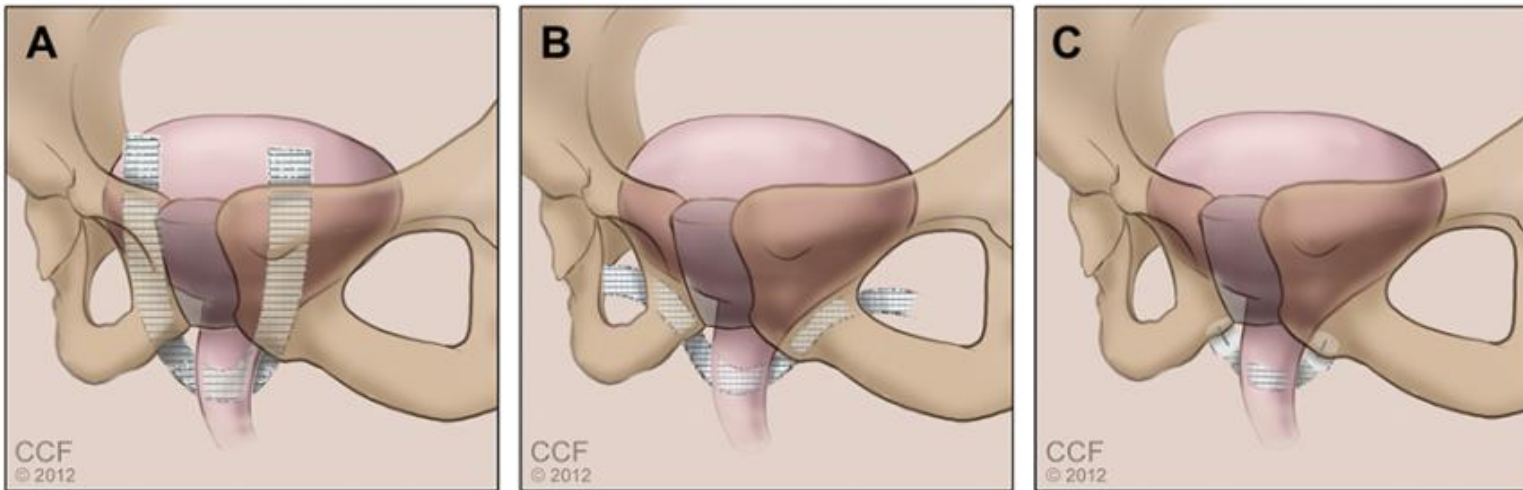
Received: 7 February 2013 / Accepted: 28 April 2013
The International Urogynecological Association 2013

failure rate: 20/38 (52.6 %) in SIS group and 3/33 (9.0 %) RP MUS group (odds ratio 10.0, 95 %CI: 2.6–38.4).

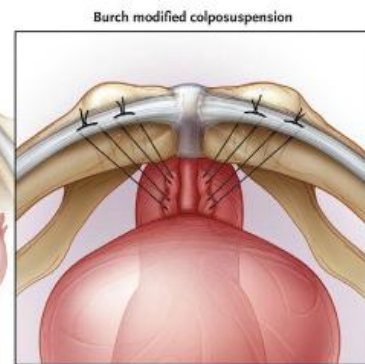
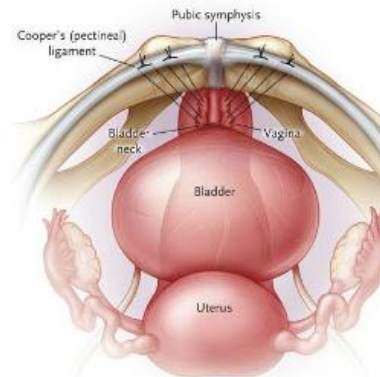
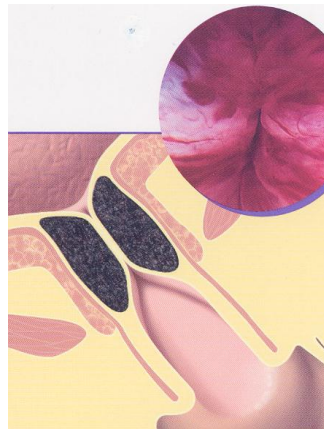
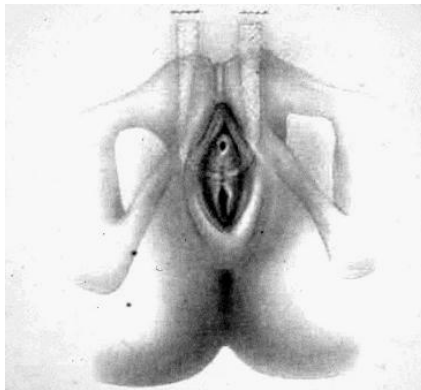
- In the SIS group, the failure rate increased from 40.5% at 6 months to 52.6% at 3 years
- In the MUS group failure increased from 3 to 9%.



MANAGEMENT OPTIONS....



Ridgeway et al 2012





CONCLUSION

- Several surgical options for secondary / tertiary treatment of SUI
- Lower success rate compared to the index procedure
- Aim at high success rates of index procedure
- Avoid exposures
- Need for high quality studies with long-term data to facilitate effective comparison of different techniques



IN CONCLUSION...

- Evidence based practice
- Training-competencies
- Pre-operative evaluation
- Informed choice following detailed counselling





THANK YOU

