



Conventional procedures (Open Burch colposuspension - Pubovaginal Slings)

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Definition of Stress Urinary Incontinence

Involuntary leakage on effort or exertion or on sneezing or coughing, as a result of insufficient urethral closure pressure.



Treatment Strategy in women with SUI

Conservative treatment is the first line of treatment for women with SUI.

International Consultation on Incontinence 01, Paris

Treatment for SUI

1. General measures
2. Pelvic floor exercises
3. Biofeedback
4. Electrical stimulation treatment
5. Magnetic stimulation treatment
6. **Surgery**

General measures



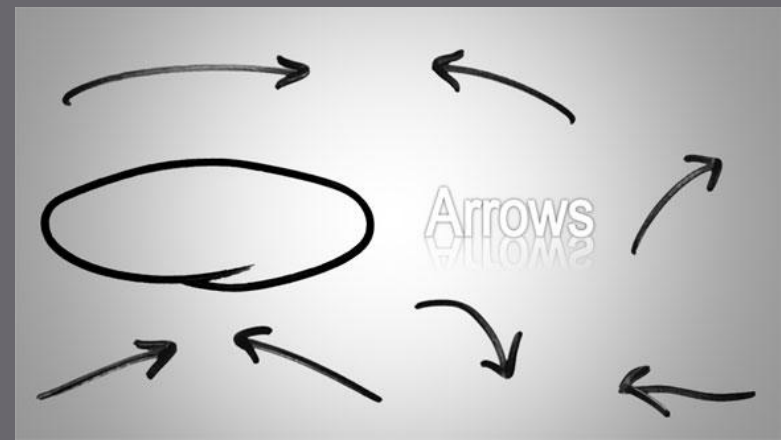
– Effect of Weight

- overweight or obese women
- at least 4 episodes UI per week
- weight loss of 5 -10% = 50% reduction in incontinence frequency

90 kg woman 168 cm has to lose 4,5 kg-9 kg

Surgical Treatment

- Retropubic bladder neck suspensions
- Pubovaginal slings
- Midurethral slings
- Periurethral injections
- Artificial sphincter



Why Not One Intervention for Everybody with SUI?

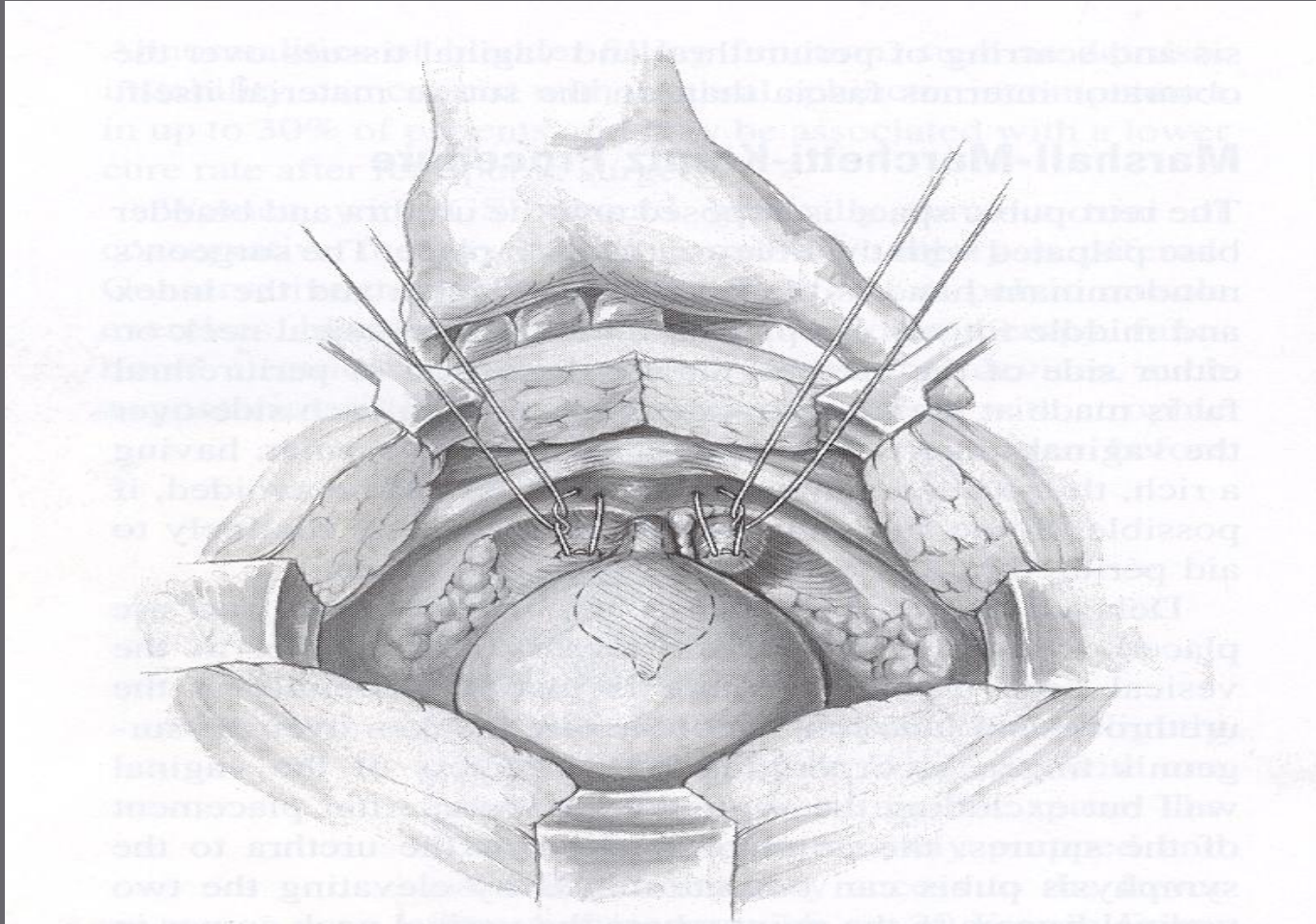
- **Prior failed SUI surgery**
- **Patient disease/morbidity**
 - +/- vaginal atrophy (XRT, etc.)
 - Chronic disease (Diabetes...)
 - Therapy (Steroids...)
- **Physical examination**
 - Anterior vaginal wall/urethral mobility
 - Prolapse
 - “extreme” habitus
- **Urodynamics**
 - Intrinsic urethral function (ISD)
- **Urethral “disease”**
 - Diverticulum, fistula, etc.



Retropubic Suspensions

- Marshall-Marchetti-Krantz (MMK) procedure
- Burch's colposuspension

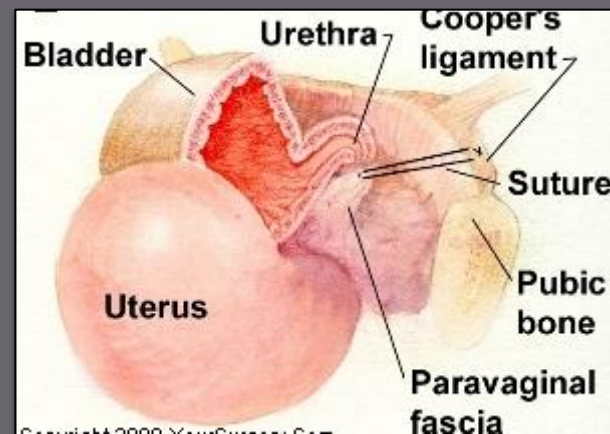
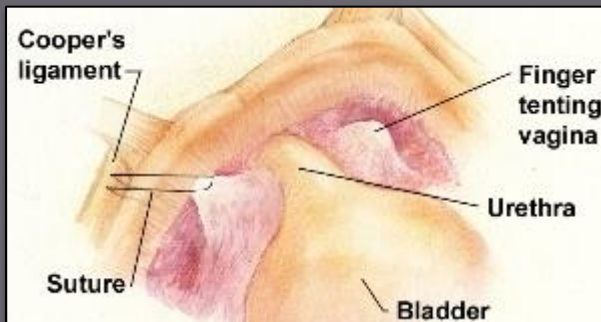
Marshall-Marchetti-Krantz procedure



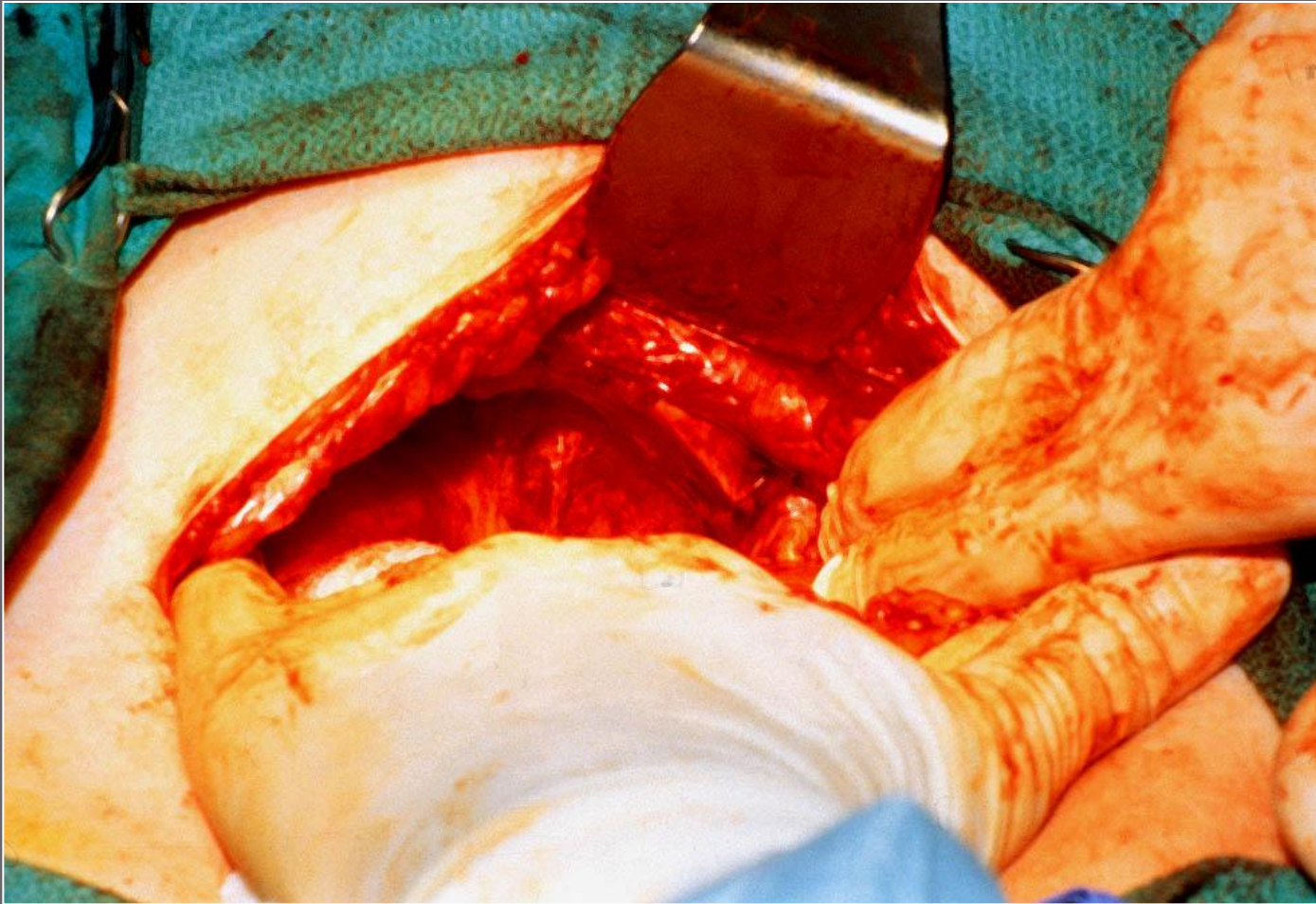
Burch's Colposuspension

Suspension of anterior vagina to the iliopectineal ligament (Cooper's ligament)

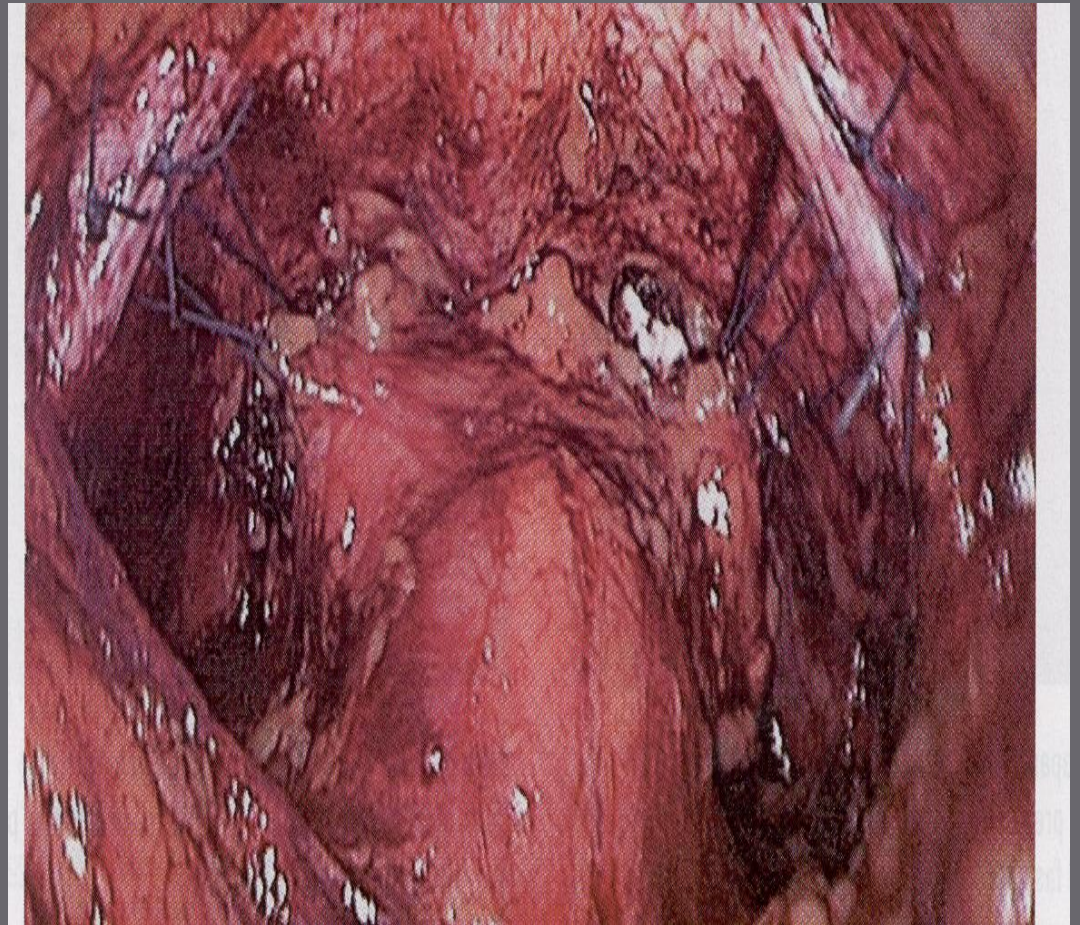
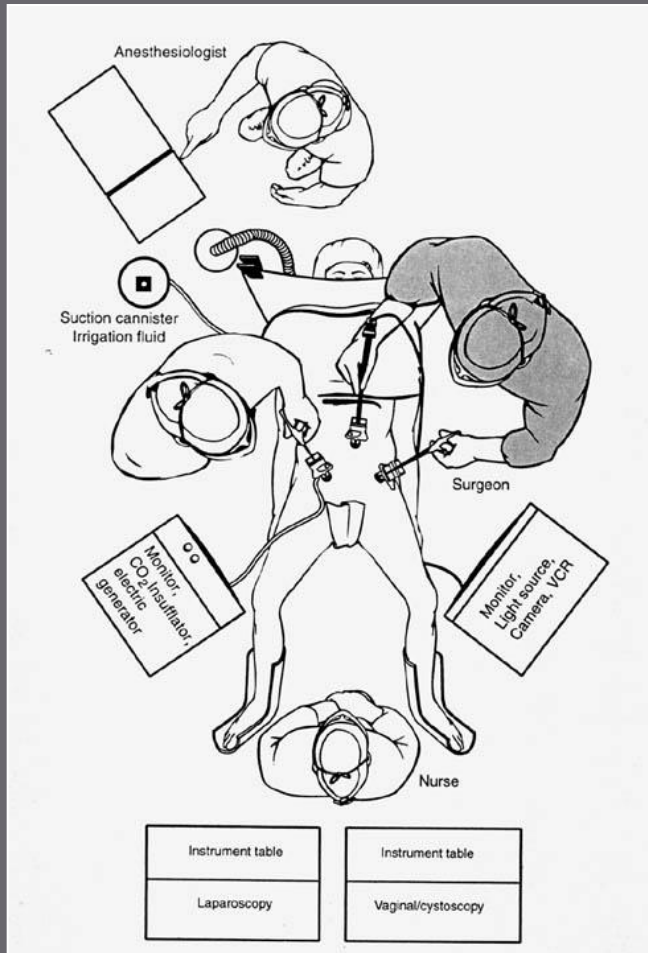
- Abdominal
- Laparoscopic



Abdominal-open



Laparoscopic



Subjective Cure Rate for Burch's Operation

Subjective results of Burch colposuspension

Reference	No. of patients	% continent	Follow-up (months)
Burch 1961 ⁷⁹	53	100	Unstated
Burch 1968 ⁸¹	143	93	10-60
Cardozo & Cutner 1992 ⁸⁹	100	91	6-12
Jarvis meta-analysis 1994 ⁵¹	1726	89.6	>12

Objective Cure Rate for Burch's Operation

Objective results of colposuspension

Reference	No. of patients	% continent	Follow-up (months)
Stanton & Cardozo 1979 ⁵⁷	25	84	4
Mundy 1983 ⁹⁶	26	73	12
Stanton 1984 ⁹⁷	60	83	12
Galloway 1987 ⁹⁵	50	84	6
Stanton 1976 ⁸⁵	32	80	6-30
Milani 1985 ⁸³	44	79	>12
Cardozo & Cutner 1992 ⁸⁹	100	80	6-12
Herbertsson 1993 ⁹⁸	72	90.3	84-144
Jarvis meta-analysis 1994 ⁵¹	2300	84.3	>12

Burch's

Success rate

- 39 trials, 3,301 women
- 1st year 85 – 90%
- 5 year 70%
- No significant difference between open and laparoscopic approach

Long-term self-assessment of urinary continence after stress urinary incontinence surgery.

Strgulc M¹, Barbič M.

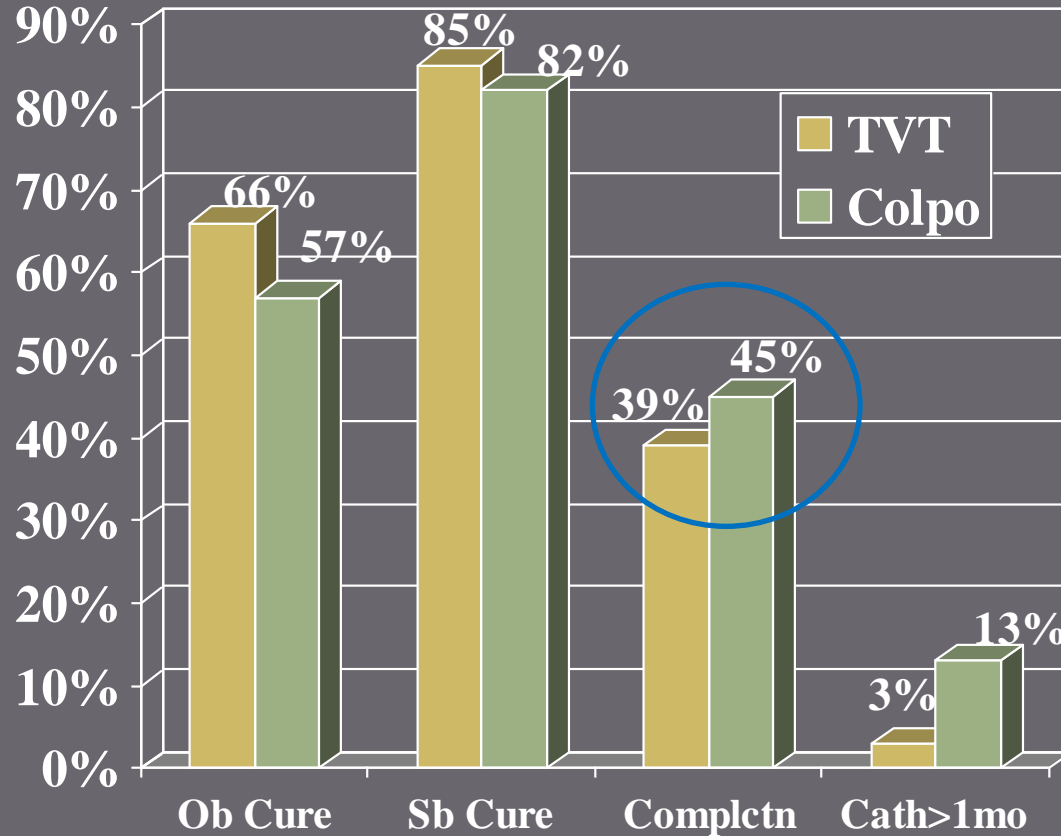
TABLE 3. Patients Remaining Incontinent 6 to 9 Years After Primary Surgery

	Number of Patients	ICIQ-UI Short Form Score \pm SD	QoL (Mean \pm SD)	Stress UI (%)	Urge UI (%)	Mixed UI (%)
LPSC colposuspension	20	11.95 \pm 5.01	6.45 \pm 3.41	6 (30)	2 (10)	12 (60)
TVT	26	12.11 \pm 5.69	6.04 \pm 3.50	5 (19.23)	6 (23.07)	13 (50)
Open colposuspension	15	10.33 \pm 5.62	5.00 \pm 3.95	4 (26.7)	0	7 (46.7)
<i>P</i> *		0.573	0.488	1	0.174	1

ICIQ-UI Short Form score range: zero (continent) to 21 (constantly wet); QoL score range: zero (not affected) to 10 (very affected).

*Bonferroni correction applied.

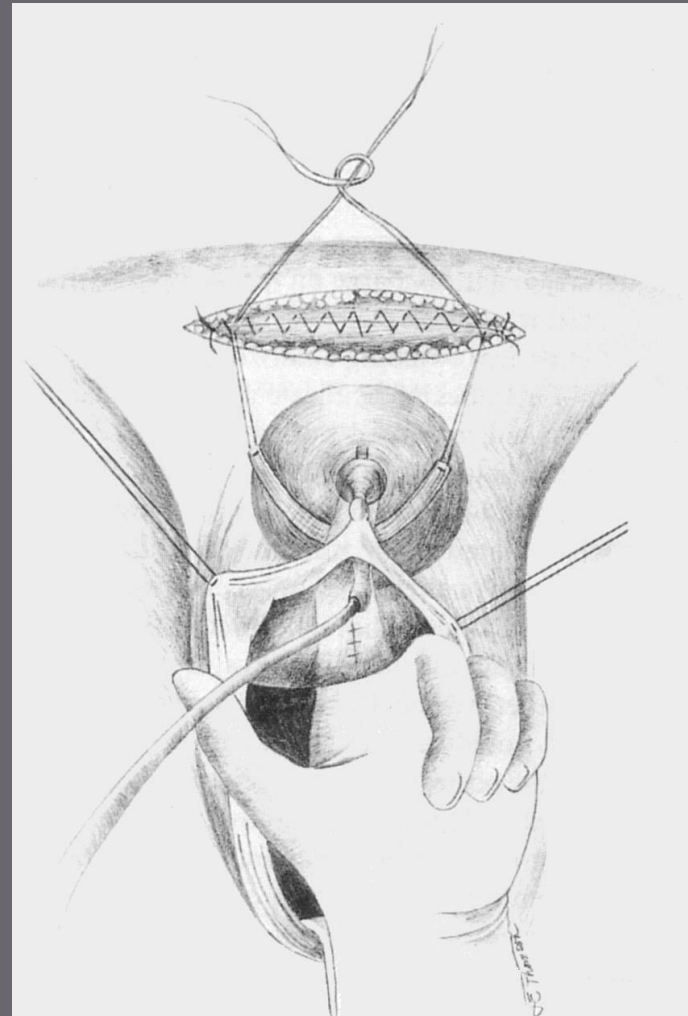
TVT vs Colposuspension



Ward K, Hilton P. Prospective multicentre randomized trial of TVT and colposuspension as treatment for SI. *BMJ* (2002) 325:67-70.

Pubovaginal Sling

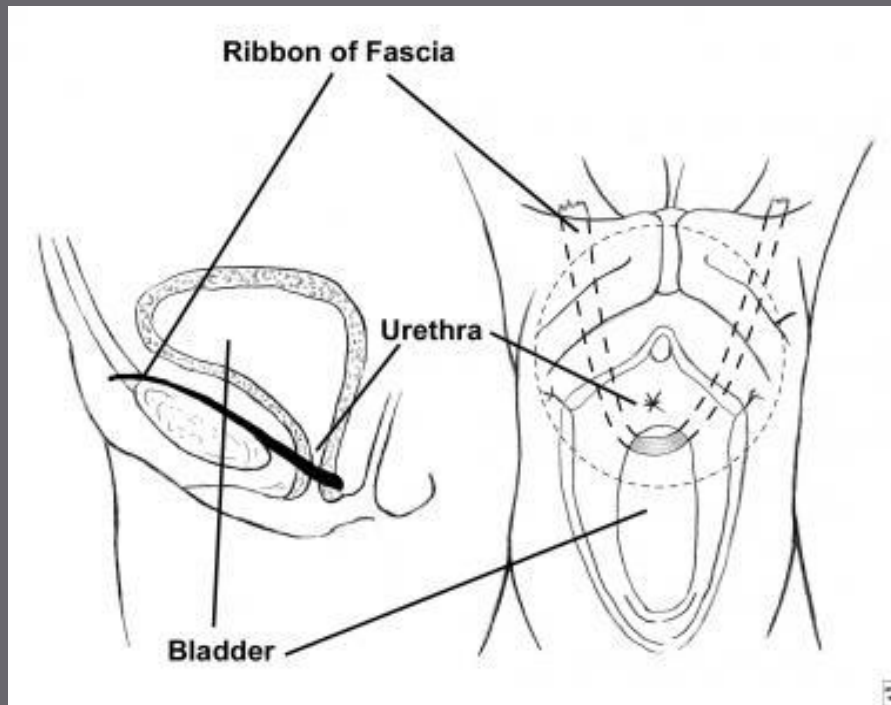
- Sling placed at the level of **bladder neck**.
- Sling extends into the retropubic space on both sides.



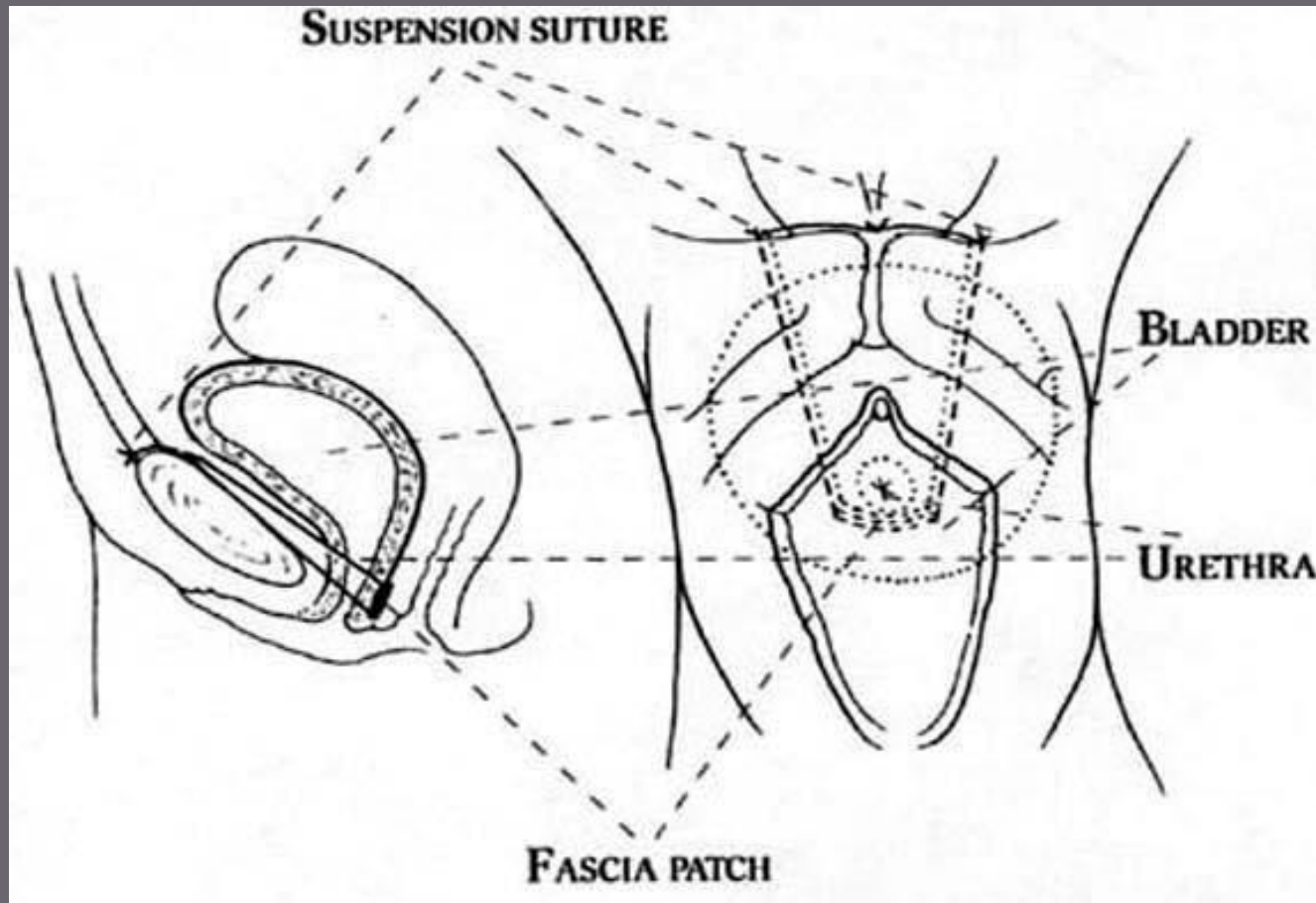
Sling options

- Autologous
- Cadaveric
- Xenograft
- Synthetic

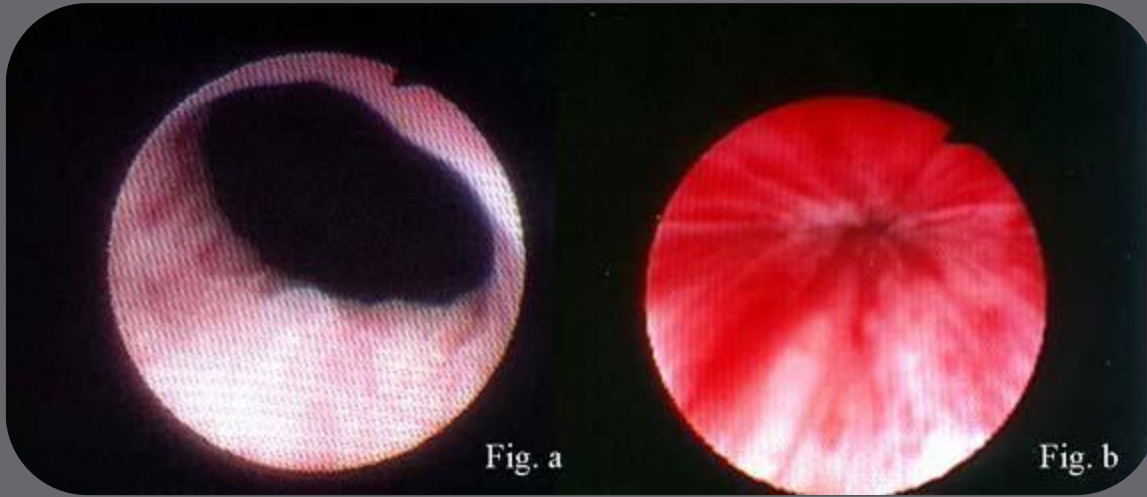
Rectus fascia or fascia lata pubovaginal sling



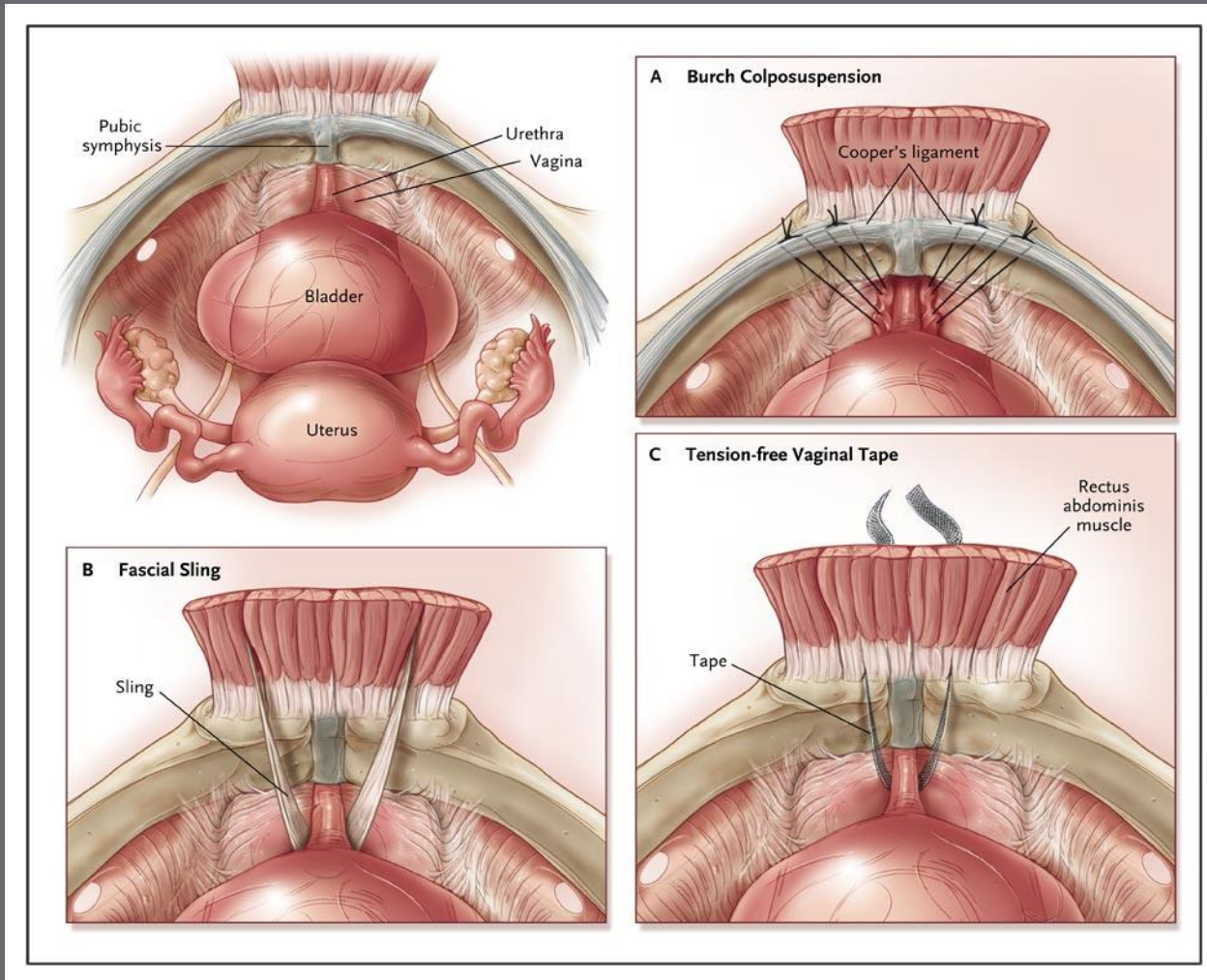
Rectus fascia or fascia lata suburethral (patch) sling



Urethra before and after



Surgical Procedures for Treating Stress Incontinence.



Rogers RG. N Engl J Med 2008;358:1029-1036.



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SUI

- **Type I** urine loss occurring in the **absence** of **urethral hypermobility**. This is the mildest form of SUI.
- **Type II** urine loss occurring due to **urethral hypermobility**. This is also known as genuine stress urinary incontinence (GSUI).
- **Type III** SUI is defined as urine leakage occurring from an intrinsic sphincter deficiency (**ISD**). ISD is a more complex form of female SUI.

Slings - 4 yr Outcome Analysis

- 247 women - type II or III
- Mean follow up 51 month (22 - 68)
- Overall continence rate 88%
- Pre-op urge resolved in 74%
- De-novo urge developed in 7%
- 4% complication rate
- 92% high degree of satisfaction

Original Article

Burch Colposuspension versus Fascial Sling to Reduce Urinary Stress Incontinence

Michael E. Albo, M.D., Holly E. Richter, Ph.D., M.D., Linda Brubaker, M.D., Peggy Norton, M.D., Stephen R. Kraus, M.D., Philippe E. Zimmern, M.D., Toby C. Chai, M.D., Halina Zyczynski, M.D., Ananias C. Diokno, M.D., Sharon Tennstedt, Ph.D., Charles Nager, M.D., L. Keith Lloyd, M.D., MaryPat FitzGerald, M.D., Gary E. Lemack, M.D., Harry W. Johnson, M.D., Wendy Leng, M.D., Veronica Mallett, M.D., Anne M. Stoddard, Sc.D., Shawn Menefee, M.D., R. Edward Varner, M.D., Kimberly Kenton, M.D., Pam Moalli, M.D., Larry Sirls, M.D., Kimberly J. Dandreo, M.Sc., John W. Kusek, Ph.D., Leroy M. Nyberg, M.D., Ph.D., William Steers, M.D., for the Urinary Incontinence Treatment Network

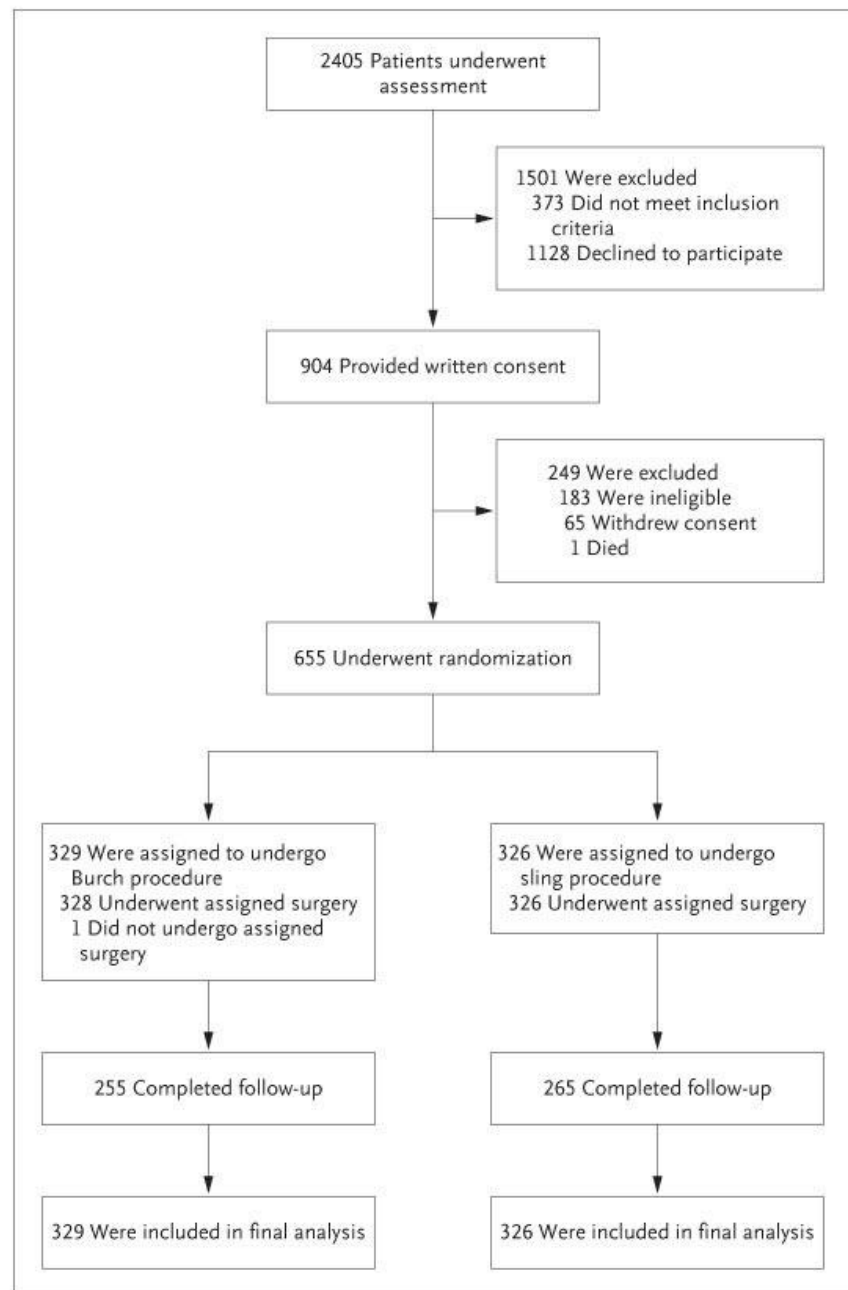
N Engl J Med

Volume 356(21):2143-2155

May 24, 2007

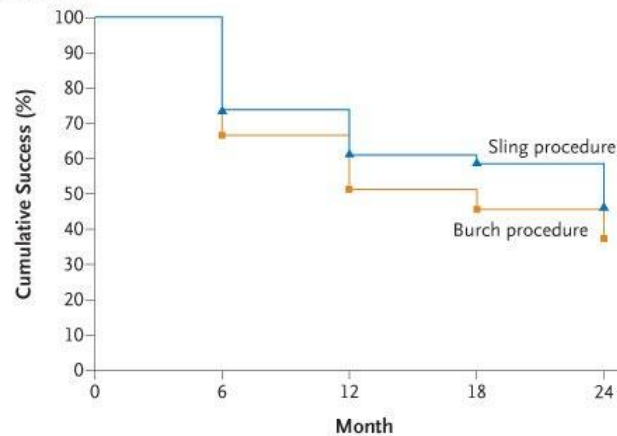


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Kaplan-Meier Curves for Success of Surgical Treatment for Urinary Incontinence at 24 Months among All Patients

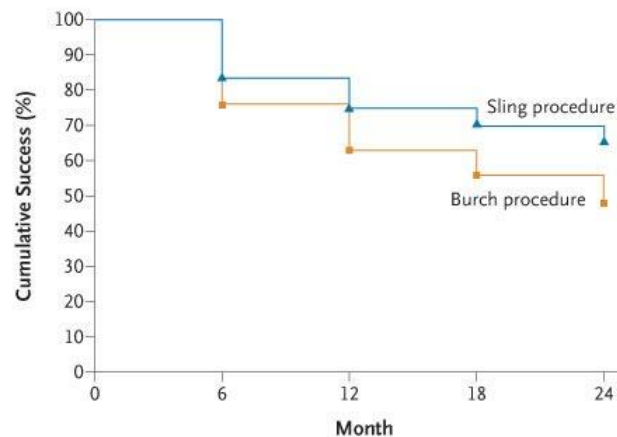
A Overall Success



No. at Risk

Burch procedure	329	303	197	144	94
Sling procedure	326	305	214	175	140

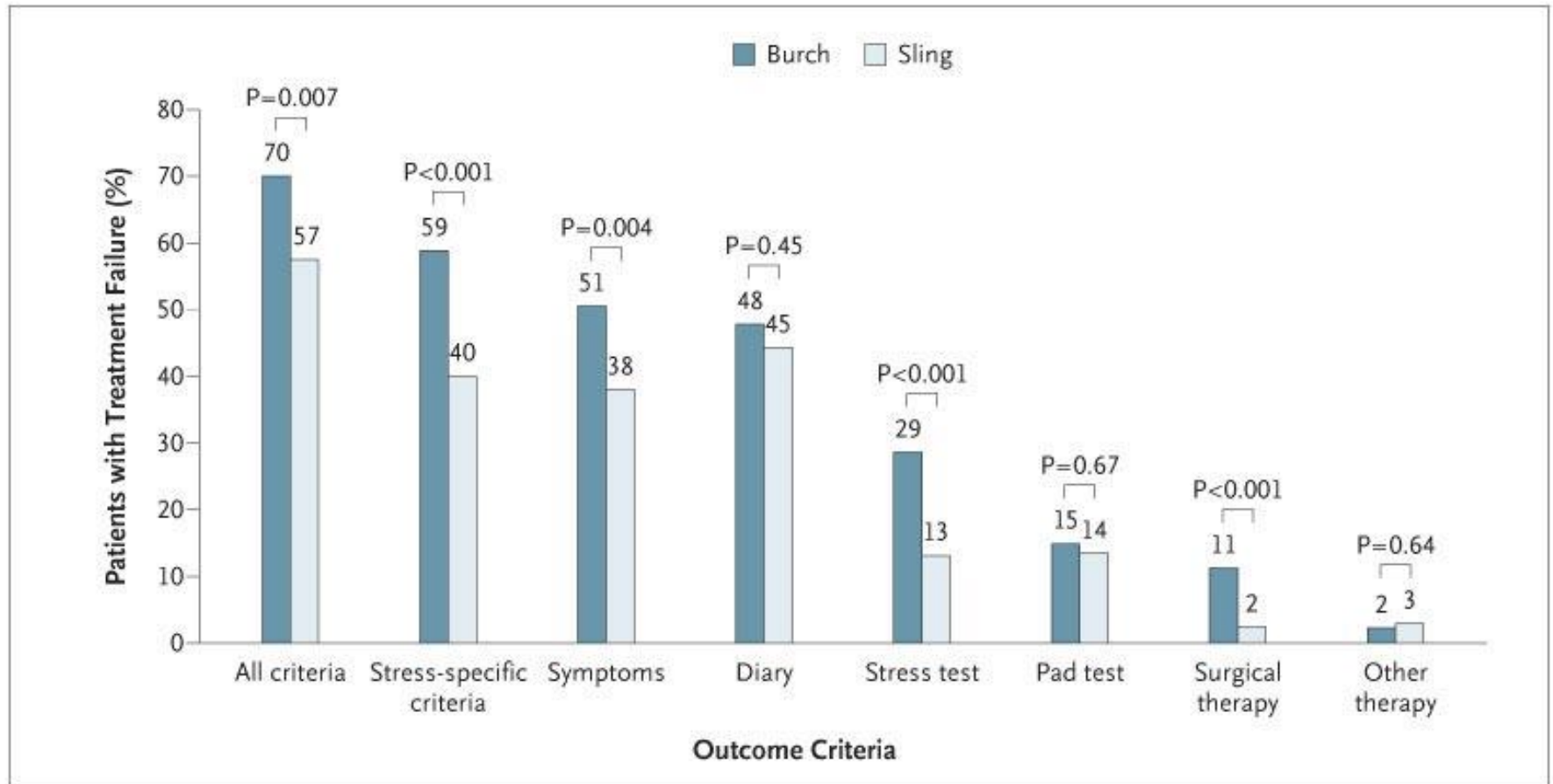
B Success Specific to Stress Incontinence



No. at Risk

Burch procedure	329	308	222	180	141
Sling procedure	326	312	250	220	187

Proportion of Patients with Treatment Failure at 2 Years, According to Overall Composite Criteria, Composite Criteria Specific to Stress Incontinence, and Other Criteria



Albo ME et al. N Engl J Med 2007;356:2143-2155

Table 2. Adverse Events.*

Event	Burch Procedure (N = 329)	Sling Procedure (N = 326)	P Value†
	no. (%)		
Serious adverse events‡			
Patients with event	32 (10)	42 (13)	0.20
Total events	39	47	
Genitourinary	22	30	0.12
Ureteral injury	2	0	
Ureterovaginal fistula	1	0	
Incidental vaginotomy	1	0	
Incidental cystotomy	10	2	
Erosion of suture into bladder	1	0	
Recurrent cystitis, leading to diagnostic cystoscopy	5	6	
Pyelonephritis	1	1	
Catheter complication	1	1	
Voiding dysfunction leading to surgical revision	0	20	
Pelvic pain	0	2	0.25
Bleeding	3	1	0.62
Wound complication requiring surgical intervention	13	11	0.83
Gastrointestinal	1	1	1.00
Respiratory distress requiring intubation	0	1	0.50
Laryngospasm requiring reintubation	0	1	0.50
Adverse events§			
Patients with event	156 (47)	206 (63)	<0.001
Total events	305	415	
Genitourinary	203	305	<0.001
Cystitis	202	299	
Pyelonephritis	1	6	
Vascular or hematologic	5	9	0.29
Deep-vein thrombosis	0	1	
Bleeding	5	8	
Wound complication not requiring surgical intervention	69	71	0.69
Gastrointestinal	7	8	0.80
Pulmonary	10	9	1.00
Neurologic	6	5	1.00
Cardiovascular	0	2	0.25
Allergic (hives, itching)	0	2	0.25
Constitutional	3	0	0.25
Dermatologic (rash, erythema)	2	4	0.45

Conclusion

The autologous fascial sling results in a **higher rate of successful treatment of stress incontinence** but also greater morbidity than the Burch colposuspension.



Surgical Treatment



Benefit



Risk

Best long
term result



Minimal
complication

If Pubovaginal Sling Works So Well, Why Keep Trying New Techniques?

- Morbidity
 - Fascial harvest
 - Dissection
 - Bleeding risk
 - Denervation
 - Pain
- Time
- General anesthesia

Conclusions

- Careful assessment of patient and presenting symptoms

Who Should Have a Bladder Neck Sling?

Fixed urethra

Minimal or no hypermobility

Poor closure function

As salvage procedure

At time of fistula repair

At time of diverticulectomy

Times have changed

