International Federation of Gynecology and Obstetrics

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SURGICAL TREATMENT FOR FEMALE URODYNAMIC STRESS INCONTINENCE

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Urinary Incontinence

- **ICS definition**:

  urinary incontinence (UI) as the complaint of any involuntary leakage of urine.

- Significantly impacts on Quality of life, both physically and psychosocially.

- By effectively identifying and treating incontinence -> improve quality of life.

Continence mechanisms in women

- Storage phase:
  - **Relaxed Bladder**: relatively constant low pressure absence of involuntary detrusor contraction
  - **Closed outlet**

- Continence is maintained:

  urethral pressure $>$ intravesical pressure

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Pathophysiology of urinary incontinence

- Urinary incontinence :

  dysfunction in either storage or emptying function

- Urethral sphincter dysfunction

- Bladder dysfunction

Urodynamic stress incontinence (USI)

- The complaint of involuntary leakage on effort or exertion, or on sneezing or coughing

- Vesical pressure ＞ urethral pressure

  during sudden increasing intra-abdominal pressure without involuntary detrusor contraction

- Weakness of the pelvic floor or sphincter

Pathophysiology of female USI

- **BN hypermobility:**

  Loss of BN support

  Treatment target: restoration of support

- **Intrinsic sphincter deficiency (ISD):**

  Sphincter dysfunction

- Both disorders in varying degrees.

Surgical treatment for USI

- Abrams et al. 2005:
  - Simple classification for operative procedures for USI
  - **1. Urethra/bladder neck stabilizing procedures**

    effective for type 1- and to lesser degree

    for type 2-incontinence

  - **2. Urethral sphincter augmentation**

    most beneficial for ISD, type 3 incontinence

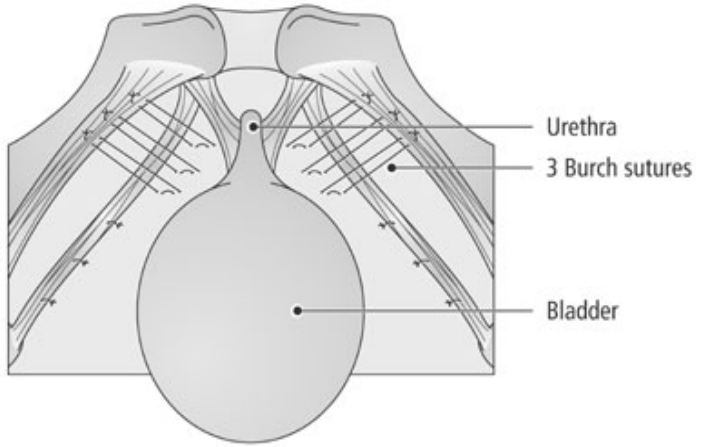
Gold standard procedures for USI

- Retropubic bladder neck suspension (Burch)
- Slings
- Long-term success rate > 80%

Burch colposuspension

- John Burch 1961

- Bladder neck and proximal urethra supported by suspension of paravaginal tissues towards ipsilateral ileopectineal (Cooper's) ligaments on pelvic sidewalls.



Outcomes of Burch's colposuspension

- Jarvis 1994:

  Obj conti rate: 84.3% (primary)

  82.5% (previous anti-inconti surgery)

- Long term follow-up: (Bergman,1995; Alcalay,1995)

  Cure rates: 82% (5 yrs f/u)

  69% (12 yrs f/u)

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Slings

- Pubovaginal sling

- Mid-urethral sling:

  Retropubic sling (TVT/Sparc)

  Transobturator sling (TVT-O, Monarc, Obtryx)

  Sinlge incision (MiniArc, Adjust, Solyx)

Tension-free vaginal tape (TVT)

- Ulmsten, 1995
- A woven prolene (polypropylene) tape
- Inserted at level of midurethra.
- Traverse Retzius space towards ant abd wall
- Tape left in situ without fixation ->tension-free manner.

Outcomes

- Ward and Hilton, 2004:
  - Randomized trial of TVT vs. Burch
  - 24 months f/u
  - Objective cure rate: TVT: 81% vs. Burch: 80%

- Nilsson, 2008:
  After 11.5 years
  Objective cure: 90%
  (both negative stress and pad test)

The trend of anti-incontinence surgery

- Less invasiveness
- Less technical demand
- Long term efficacy
- Safety
- Improvement of QoL

Transobturator tape (TOT)

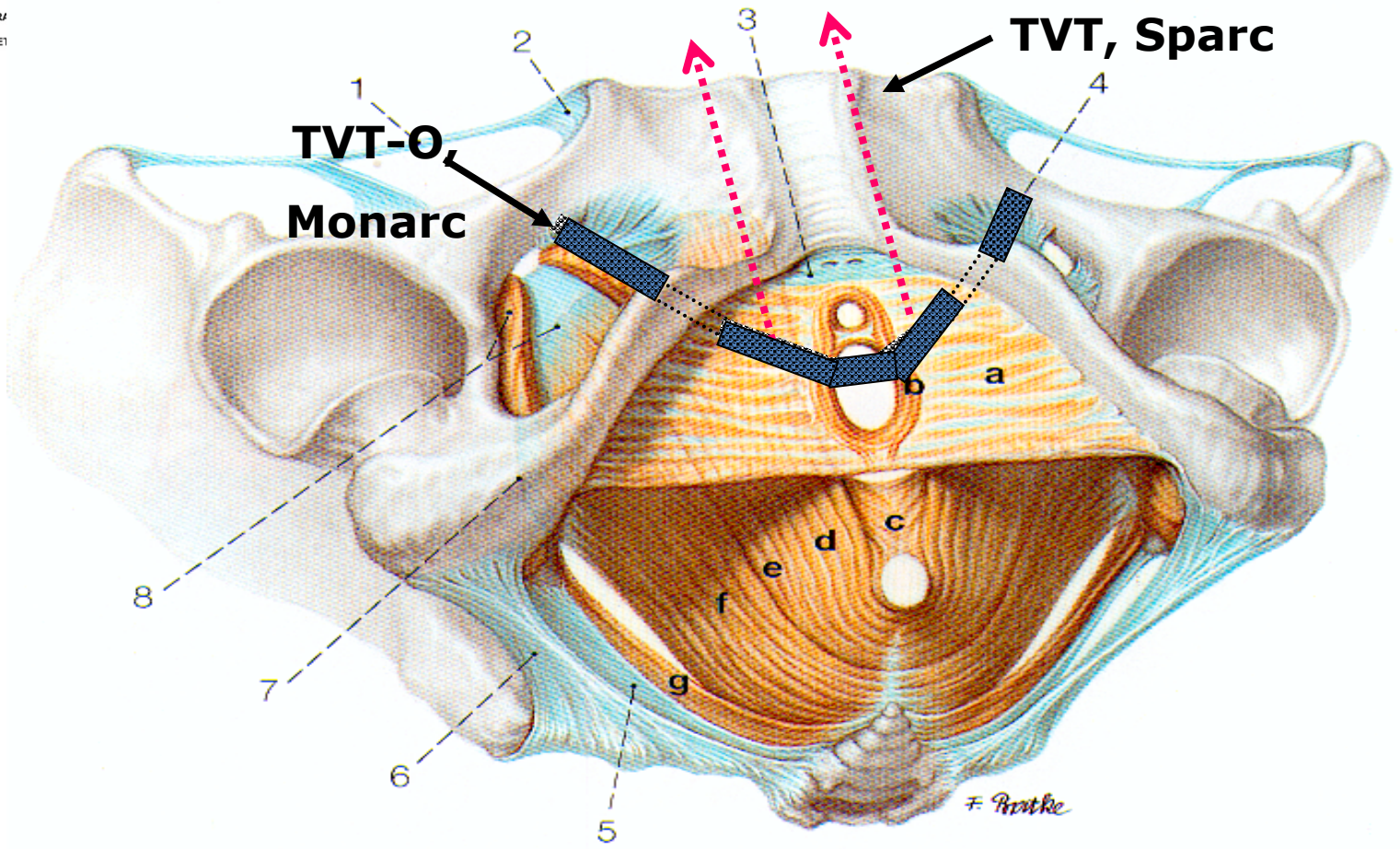
- Delorme, 2001:

  Monarc : “outside-in” procedure

- de Leval, 2003:

  TVT-O: “inside-out” procedure

Transobturator sling (TVT-O, Monarc)



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Transobturator slings

- Entirely perineal technique
- Risk of bladder injury: reduced to estimated 0.5%
- Avoid penetration of retropubic space
- Reduction of surgery-related complications
- Promising outcome after mid-term follow-up

Single incision sling

- Self-anchoring mini-tapes
- Minimize operative procedure
- Reduce thigh pain and risk for bladder injury by minimizing tape's trajectory.
- Shorter polypropylene mesh
- No exit skin cuts are needed.
- Wait for mid-term outcome.