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SURGICAL TREATMENT FOR FEMALE URODYNAMIC STRESS INCONTINENCE
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
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)
Slings

- Pubovaginal sling

- Mid-urethral sling:
  - Retropubic sling (TVT/Sparc)
  - Transobturator sling (TVT-O, Monarc, Obtryx)
  - Single 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)
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.