# Conservative Treatments for Stress Urinary Incontinence

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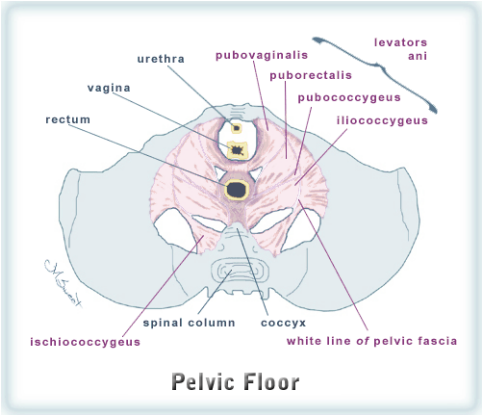
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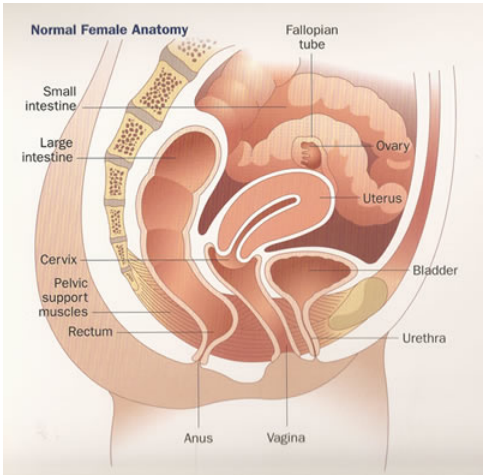
# Goals

- Provide an overview of the epidemiology and impact of urinary incontinence
- Convince you why it is important to ask your patients about symptoms of urinary incontinence
- Focus on the conservative treatments of stress incontinence

# What is the pelvic floor?

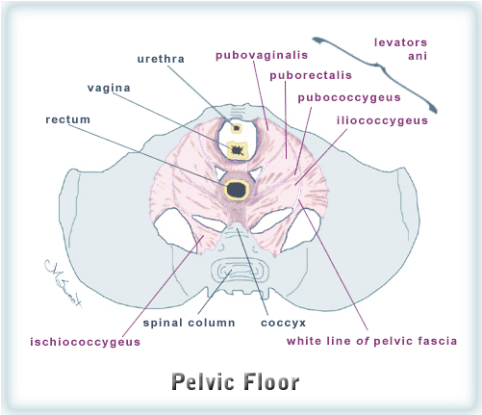
- Muscles
- Ligaments
- Connective tissue
- Pelvic organs

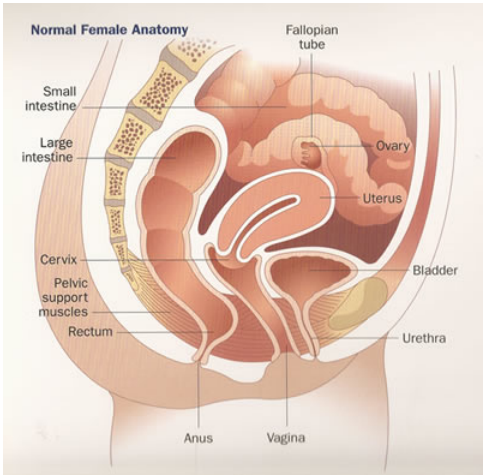


# What is the pelvic floor?

- Support for pelvic organs, allowing for:
  - Sexual function and reproduction
  - Urinary control
  - Bowel control



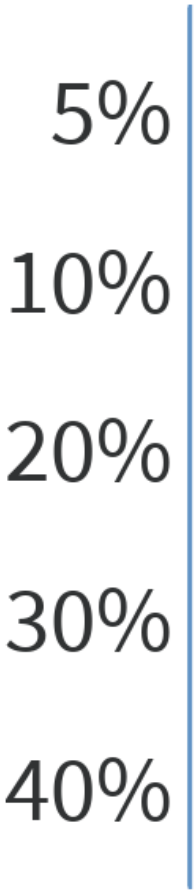



# What are Pelvic Floor Disorders (PFD)?

- Weakness of the pelvic muscles or tears in the connective tissue result in :
  - Urinary incontinence
  - Pelvic organ prolapse
  - Fecal incontinence
  - Sexual dysfunction



# What percentage of women are impacted by urinary incontinence during their lifetime?



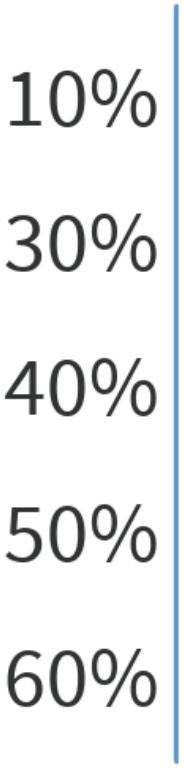

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# What percentage of women with pelvic floor disorders talk to their physicians?

| | |
|---|---|
| 0-25% | **A** |
| 25-50% | **B** |
| 50-75% | **C** |
| 75-100% | **D** |

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# What percentage of primary care physicians ask their patients about pelvic floor disorders?




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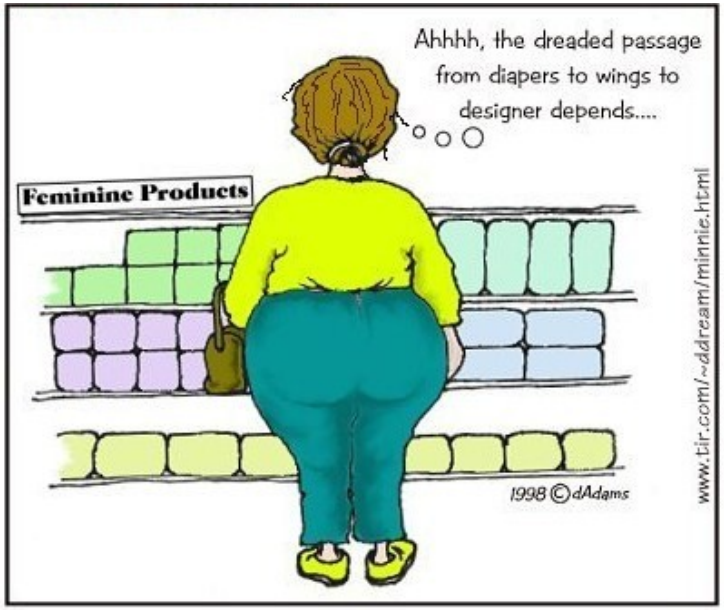
# Talking about Pelvic Health can be Uncomfortable…

- Important women's health issue
- Not talked about enough
- Can be embarrassing to talk about "what's happening down there"

- BUT about 1 in 3 women will deal with a pelvic floor disorder in her lifetime.

# but women are not alone

- 50-75% of women with PFD won't even tell their physicians.
  - Of those who did, 61% waited 4 years.
- In US, more feminine pads are used for incontinence than menstruation.
- Only 32% of primary care physicians routinely ask about incontinence
- **80% of urinary incontinence can be cured or improved.**



# What's Normal?

- Many women will leak urine when their bladder is particularly full or when a bathroom is not readily available
  - Happens uncommonly

- It is NOT NORMAL to have to adjust your life
  - Wearing pads
  - "Bathroom mapping"
  - Not going out
  - Altering activities

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# What are some risk factors for urinary incontinence?

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# Urinary Incontinence: Risk Factors

- Genetic
  - Aging
  - Obesity
- Trauma to pelvic floor
  - Pregnancy/Vaginal delivery
  - Surgery
  - Radiation
  - Accidental injury
- Increased intra-abdominal pressure
  - Chronic constipation
  - Chronic cough (lung conditions)
- Occupational/recreational
  - Occupations w/heavy lifting
  - Smoking
  - Caffeine use
- In many cases, no obvious underlying reason.

# Urinary Incontinence: Impact

- Undermines a woman's sense of well-being and self-worth.
- Impacts her ability to live life the way she wants.

# Urinary Incontinence: Impact

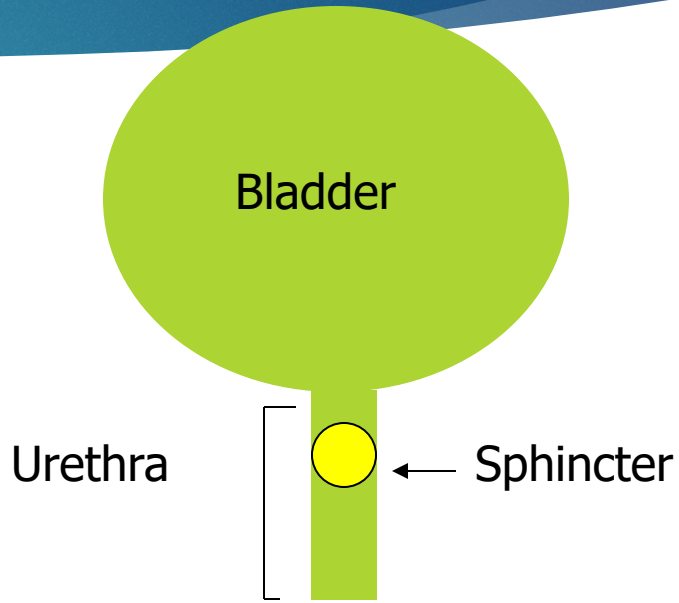
- Studies show that quality of life measures significantly decrease
  - Stop exercising or participating in physical/social activities
    - Can further reduce health and quality of life
  - Work activities, travel and intimacy also suffer

# Urinary Incontinence: Impact

- Medical complications
  - skin breakdown, increased urinary tract infections
- Institutionalization
  - Second leading cause of nursing home placement

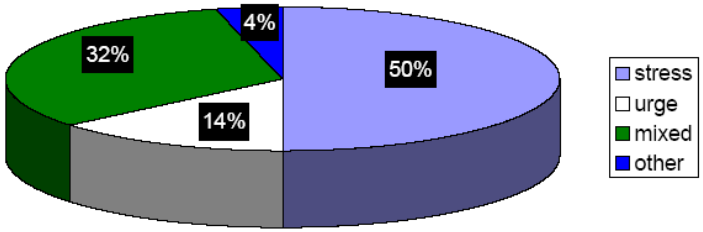
# Urinary Continence

- Bladder
  - Stores urine
- Urethra
  - Allows urine to pass
- Urethral SPHINCTER
  - Acts like the knot on a balloon



# Urinary Incontinence

- Stress Urinary Incontinence (SUI)
  - Leaking of urine with coughing, sneezing, straining, exercise or other types of exertion
- Urge Incontinence (UI)
  - Leaking of urine associated with the sudden uncontrollable urge to empty the bladder – the urge to void cannot be delayed and leakage occurs – key symptom of Overactive Bladder (OAB)
- Mixed Incontinence (MI)
  - A combination of stress and urge incontinence



# Stress Incontinence

- Most common type in women < 75 years old
- Hypermobility of bladder neck and urethra (85%)
  - Structural loss of support for urethra leads to movement of the urethra during stress maneuvers and leak
  - associates with aging, hormonal changes, trauma of childbirth or pelvic surgery
    - Q tip test > 30 degrees of movement; ***little correlation***
- Intrinsic sphincter problems
  - due to pelvic/incontinence surgery, pelvic radiation, trauma, neurogenic causes (15% of cases)

# Stress Incontinence

- Urethral SPHINCTER
  OFTEN a problem
  - Stress incontinence

  - Actual stress on the bladder system with physical activity

  - Leaking of urine with coughing, sneezing, straining, exercise or other types of exertion



# Urgency Incontinence

- Bladder (stores urine)
  - Bladder doesn't store well
    - Overactive bladder
      - Urgency, frequency, and nocturia
    - Urgency incontinence
  - Leaking of urine with sudden uncontrollable urge to empty the bladder
  - "Gotta go…gotta go"



# Urgency Incontinence

- Most common cause of UI >75 years of age
- Usually idiopathic (90%)
  - Infection, obstruction, prolapse, or unknown
- Neurogenic causes: stroke, multiple sclerosis, spinal injuries, intracranial lesions, Parkinson's Disease, dementia

# Urgency and Stress Incontinence MIXED Incontinence

- Most women with incontinence have more than one symptoms.
- Bladder and SPHINCTER are misbehaving.
- IMPORTANT because treatments differ.

# Overflow Incontinence

- Over distention of bladder
- Bladder outlet obstruction
  - stricture, prolapse, fecal impaction
- Non-contractile bladder (hypoactive detrusor or atonic bladder)
  - diabetes, MS, spinal injury, medications

# Functional Incontinence

- Does not involve lower urinary tract
- Result of psychological, cognitive or physical impairment

# Treatments for Stress Urinary Incontinence (SUI)

- **Conservative/Nonsurgical**
  - Pessary
  - Physical therapy
  - Injection therapy
    - Urethral bulking
- **Surgical**
  - Retropubic colposuspensions (Burch/MMK)
  - Fascial slings
  - Midurethral slings
  - Needle suspensions
  - Anterior repair ± suburethral plication

# Which treatment option do you think women prefer for their urinary incontinence?

Surgery to treat their urinary incontinence

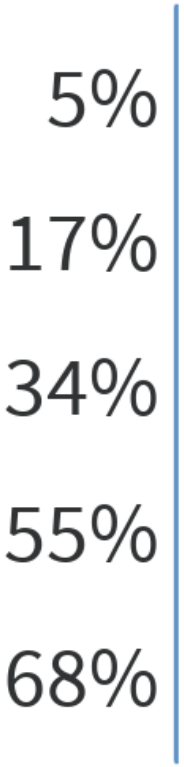
Daily medication

Both surgery and medication

None of the above

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# What percentage of women wants a "complete cure" for their urinary incontinence?




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# What Do Women Want?

- Determine women's overall expectations and acceptability of treatments and acceptability of symptoms
  - 100 women recruited from a tertiary referral urodynamic unit
    - All with troublesome LUT symptoms.
- Many prefer to avoid surgery or daily medication

- Good improvement so symptoms no longer interfere with life (43%)
- Complete cure (17%)

Robinson et al. J. Pelvic Medicine 2003.

# Acceptability of Symptoms

- Not acceptable!
  - Wearing pads most of the time (85%)
  - Leaking during sexual intercourse (79%)
  - Occasional large leak on coughing or sneezing (78%)
  - Nocturia 2 or more per night (68%)

- Acceptable
  - Nocturia 0-1 (36%)
  - Occasional small leak on strenuous cough (29%)
  - Frequency (26%)
  - Urgency (26%)
  - Occasional small leak on cough/sneeze (22%)

Robinson et al. J. Pelvic Medicine 2003.

# Acceptability of Symptoms

- Not acceptable!
  - Long-term catheter (79%)
  - Self-catheterization (73%)
  - Regular medication for life (69%)
  - Pelvic floor exercises for life (44%)
  - Major operation (43%)

- Acceptable
  - Pelvic floor exercises for 6 mo (60%)
  - Clinic procedure - improvement without long term risk (60%)
  - Medication, PRN (51%)
  - Pelvic floor exercises for life (41%)
  - Minor operation - 85% cure, 2% ISC risk (38%)

Robinson et al. J. Pelvic Medicine 2003.

# Myths

- Patients do not want conservative treatments
- Conservative therapies do not work
- Conservative therapies are only for patients who cannot have surgery

# Realities

- Conservative therapy
  - Effective for treating incontinence
  - Result in high patient satisfaction
  - Rare complications/adverse events
  - No de novo voiding dysfunction or urge

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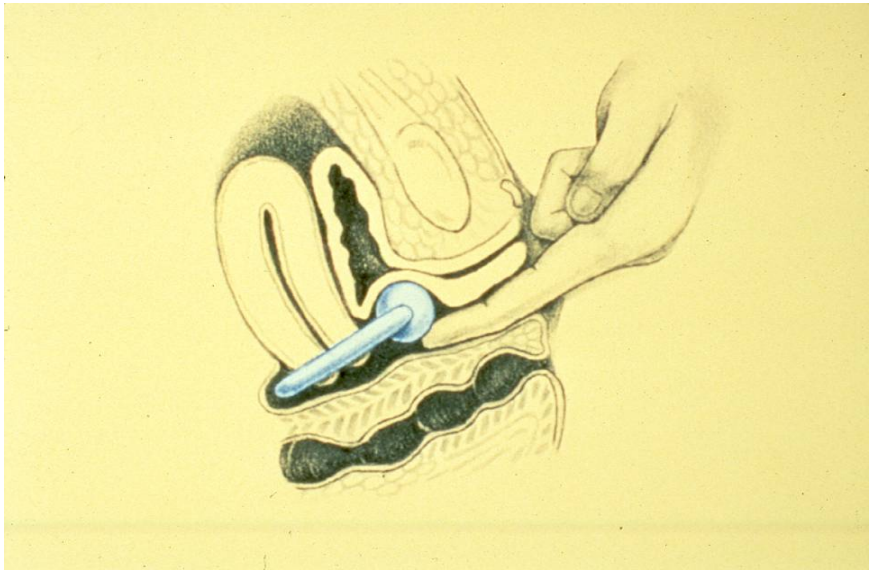
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# Incontinence Pessaries

- Modified to support the bladder neck








# Myths about Pessary

- Pessaries cause frequent infections and erosions
- Pessaries cannot be used in sexually active women
- Pessaries do not treat incontinence
- Pessary fitting takes a long time

# Pessaries and SUI

- Nager et al (2009): ATLAS trial
  - RCT of pessary vs pelvic floor training vs combined; 266 women in pessary or combined arms
    - *92% successfully fitted with incontinence ring or dish.*
- Donnelly et al (2004): 109 women
  - *89% successfully fitted*
    - *51% used pessary for ≥ 6 mo* ( median 13; 6-30 mo)
- Komesu et al ( 2007): 64 women
    - *56% continued pessary use at 6-12 mo*
    - *Improved on symptom bother compared to those who quit*

Nager C et al. Int Urogynecol J 2009.
Donnelly M et al. Int Urogynecol J 2004.
Komesu Y et al. AJOG 2007

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# Etiology of pelvic floor disorders

- Multifactorial
  - Muscles
  - Nerves
  - Connective tissue

- Pelvic floor muscle training (PFMT) only treatment which may impact all 3 areas

# Etiology of pelvic floor disorders

- Multifactorial
  - Muscles
    - Change muscle morphology
      - Increase cross-sectional diameter
    - Improve muscle tone
  - Nerves
    - Improve neuromuscular function
      - Increase motor unit activation & firing frequency
  - Connective tissue
    - Increase connective tissue mass

# Pelvic Floor Muscle Training (PFMT)

- Learned behavior
  - Contract PFM in anticipation of increase in intra-abdominal pressure

**Do's**

- Get medical evaluation 1st
  - 30% unable to perform PFM contraction
- "Personal trainer" = PT
- 8-12 reps; 3 sets; 2-4 times per week

**Do Not's**

- Substitute (Gluteals, Abdominal, Adductors)

Aston-Miller JA et al. Abstract presented at AUGS 1997.

# PFMT compliance

- Patient compliance is key to a successful pelvic floor rehabilitation program.
  - Mouritsen et al. (1991): 65% completed a 3 mo program.
  - Scott and Hsueh (1979): 42 % who were taught pelvic muscle exercises followed up at 1 mo.
- Requires strong commitment from both patient and health care provider

Mouritsen L et al. Br J Urol 1991
Scott RS, Hsueh GS. Am J Obstet Gynecol 1979.

# PFMT

- Pelvic floor training appears to be an effective treatment for women with stress and mixed incontinence
  - Better than no treatment or placebo
  - Short-term (~3 mos): 36% - 65% success
    - Bo et al. (1992)
    - Theofrastous et al (2002)
    - Henalla et al (1988)
    - Elia G et al. (1993)
  - Long-term
    - Mouritsen L et al.(1991):
      - 30% cured, another 17% improved that surgery was not necessary at 1 year.

# So, what if we combined PFMT and pessary?

- Richter et al. (2010)
  - ATLAS trial - RCT of continence pessary vs pelvic muscle training vs combined therapy on patient perception of symptoms improvement and SUI symptoms at 3 months
  - 445 women with predominant SUI
  - *At 3 months, 40% pessary and 49% of PT group were "very much better" or "much better" on PGI-I (p=.09)*
    - Combo 53%- better than pessary but not better than PT group, therefore not superior to single-modality therapy.
    - *Group differences were not sustained to 12 months on any measure*
    - *Patient satisfaction remained above 50% for all treatment groups*

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# History of SUI Injection Therapy

- 1938: Sclerosing agent sodium morrhuate into the anterior vaginal wall and around the urethra
- 1955: Paraffin wax in the perineum
- 1963: Sclerosing agent Dondren in the urethra
- 1973: Polytetrafluoroethylene paste (Teflon®) into the urethra
  - Local extrusion and distant migration of the Teflon®) to the liver, lung and spleen
- 1990s: Periurethral injections of cross linked collagen (Contigen®)

# Urethral Bulking Agents for SUI

- Multiple agents, including synthetic and "natural" materials
  - Collagen (Contigen®):
    - Biodegradable; benefit short-lived
  - Carbon beads (Durasphere EXP®)
  - Calcium hydroxylapatite (Coaptite®)
  - Silicone microparticles (Macroplastique®)

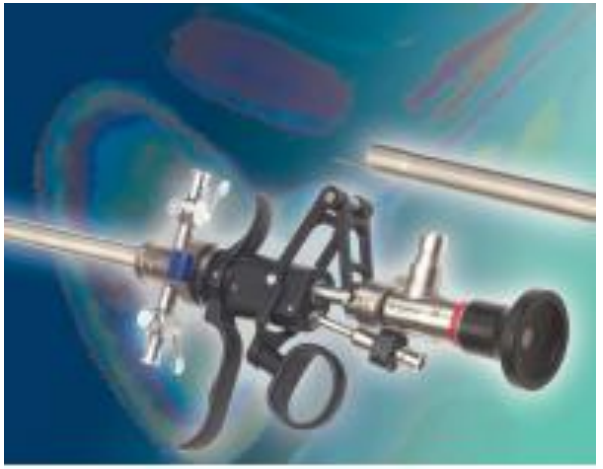
- Ideal agent: durable, nonimmunogenic, noncarcinogenic, nonmigratory, with minimal inflammatory responses, and cost effective.

# SUI Injection Therapy

- How to select patients for urethral bulking?
  - Woman who is/has:
    - Sufficient SUI symptoms and bother
    - Unable or unwilling to do prolonged self-catherization
    - Not a candidate for surgery/anesthesia secondary to medical co-morbidities
    - At higher risk for retention

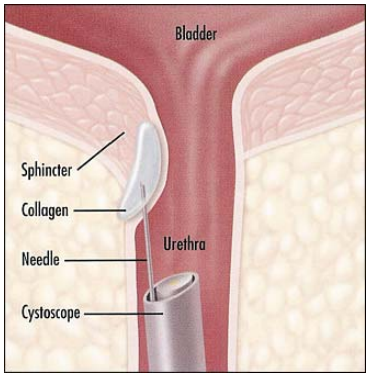
# Technique

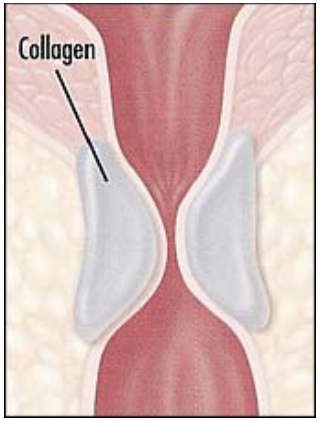
- Office procedure
- Local anesthesia
  - Intraurethral lidocaine jel
  - Periurethral lidocaine injection
- 25° Wolf cystoscope with injection system



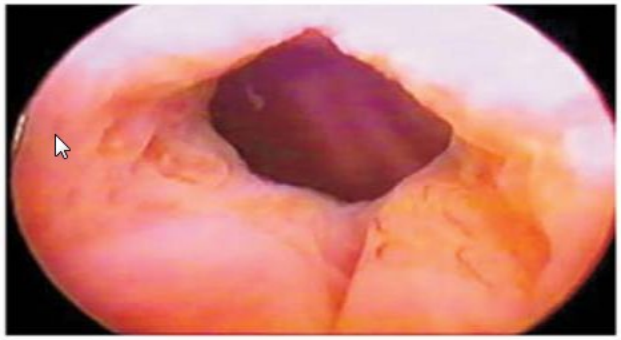
# Technique

- Direct visualization
- Urethral coaptation
- Make sure can do ISC

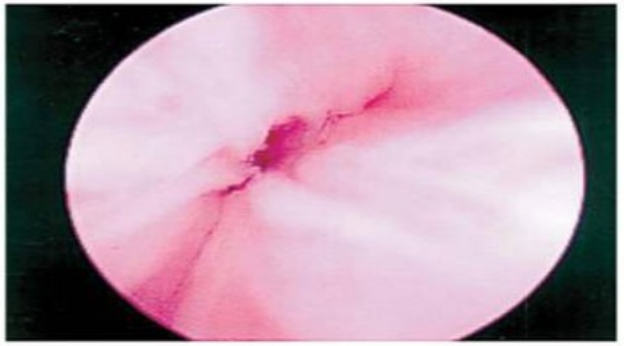


# Urethral Coaptation



BEFORE



AFTER

# SUI Injection Therapy

- Most reported studies have used cross-linked collagen as the bulking agent
  - Cure rate "complete dry" ~48%
  - "Dry" or "improved" 76% (68-90%)
- Reduced success in mixed incontinence
  - Groutz et al. Urology 2000
  - Herschorn et al 1996 J. Urology
- Few trials comparing efficacy between agents
- Less effective than traditional or tape-based SUI procedures
- Less durable than surgery
- Less complications; Less prolonged catherization

Dmochowski RR et al. Urology 2000.
Pickard R et al. Cochrane Database of Systematic Reviews 2003, Issue 2.

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# What is the one thing that you will take-away from this lecture?

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# Summary

- Please ask your patients about urinary incontinence
- Urinary incontinence can greatly impact a woman's quality of life.
- Conservative therapy such as pelvic floor physical therapy, pessaries and SUI injection therapy are effective treatments for stress incontinence
  - Can result in high patient satisfaction
  - Rare complications

# Thank you!


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"Good luck convincing the rest of the world what happened."