Uterine Prolapse

Background

1. Definition
    - Descent of uterus, cervix, and associated vaginal segment into lower vagina, hymenal ring, or through vaginal introitus (Descensus or Procidentia)

Pathophysiology

1. Pathology
    - Uterus and other pelvic organs are supported by uterosacral/cardinal ligament complex, levator ani muscles, and endopelvic fascia
        - These structures have multiple attachments to each other and to bony pelvis
        - Damage to one or more structures weakens integrity of entire system and results in prolapse into vagina
        - Location of damage determines severity of prolapse
2. Incidence/prevalence
    - 14% of women w/uterus ages 50-79 have uterine prolapse on PE[1]
    - Caucasian > African-American [OR 0.63, 95% CI 0.50-0.79][1,3,4]
3. Risk factors
    - Most pts w/significant prolapse have $\geq$ 2 risk factors
    - Genetics
        - Family Hx
            - 74-91% concordance in prolapse stage between nulliparous and parous sisters[5]
        - Spina bifida occulta
        - Congenital pelvic floor weakness
    - Parity, esp vaginal birth [OR 1.82, 95% CI 1.04-3.19][6]
    - Operative vaginal delivery or traumatic delivery
    - Obesity [OR 1.40, 95% CI 1.24-1.59][1]
    - Advanced age
        - More prevalent in 60-69 yr olds [OR 1.16, 95% CI 1.03-1.30] and 70-79 yr olds [OR 1.36, 95% CI 1.19-1.56][4]
    - Neurogenic dysfunction of pelvic floor
    - Connective tissue disorders
    - Pelvic surgery w/disruption of natural support [1.3/1,000 women-yrs of risk][7]
    - Chronically increased intra-abdominal pressure
        - Strenuous physical activity
        - Constipation
        - Coughing - may explain association of uterine prolapse w/smoking and COPD[8]

Diagnostics

1. History
    - Symptoms
        - Minimal in morning
        - Worsen throughout day and w/physical exertion

        - Relieved by lying down
    - Most common Sx
        - Pelvic pressure or heaviness
        - Protrusion of tissue from vagina
        - Obstructive urinary Sx
    - Other
        - Pressure or feeling of a bulge
        - Visible bulge in vagina[3,4,9]
        - Urinary stress incontinence, obstruction, retention, frequency
        - Recurrent UTIs
        - Pelvic pain
        - Bowel dysfunction, constipation, straining, incontinence
        - Dyspareunia, sexual dysfunction
2. Physical exam
    - Inspect for prolapsed tissue
    - Vaginal wall
        - Standing and dorsal lithotomy positions at rest and w/Valsalva maneuver
    - Speculum exam w/single bladed speculum
        - Sims speculum or disassembled Graves speculum
        - Posteriorly to visualize anterior vaginal wall and apex
        - Anteriorly to visualize posterior vaginal wall
    - Stage using Pelvic Organ Prolapse Quantification (POP-Q) system[12,13]
        - Measures 6 points in vagina in distance from hymen to evaluate maximal extent of prolapse
        - 2 points each for anterior vaginal wall, superior vagina, and posterior vaginal wall
            - Points above hymen - negative distance in cm
            - Points below hymen - positive distance in cm
            - Video teaching this method is available from the American Urogynecologic Society www.augs.org
        - Stage 0 - no prolapse
        - Stage I - prolapse >1 cm above hymen
        - Stage II - prolapse from 1 cm below to 1 cm above hymen
        - Stage III - prolapse >1 cm below hymen, but protrudes no more than 2 cm less than total vaginal length
        - Stage IV - prolapse of entire vaginal wall, complete eversion or uterus procidentia
    - Also classified as
        - 1° prolapse
            - Cervix visible when perineum is depressed
        - 2° prolapse
            - Cervix visible outside vaginal introitus, while uterine fundus remains inside
        - 3° prolapse
            - Entire uterus outside of introitus (procidentia)
3. Diagnostic testing
    - No labs or Dx studies necessary

- Evaluate associated complaints as indicated
  - Urodynamics for urinary incontinence
  - Consider urinalysis and urine culture

Differential Diagnosis

1. Urethral diverticulum
2. Skene's gland abscess
3. Trigonitis
4. Diabetes mellitus
5. Detrusor irritability
6. Medications (anticholinergics)
7. Psychosocial
8. Urethral fistula
9. Rectocele
10. Constipation

Therapeutics

1. General
   - Wt-loss and exercise (if obese) to decr intraabdominal pressure[16]
2. Pessaries
   - Removable rubber, plastic or silicone-based devices
   - Can be fitted in most women w/prolapse, regardless of stage
   - Consider before surgical intervention in women w/symptomatic prolapse[16]
   - Common types
     - Ring
     - Doughnut
     - Cube
     - Inflatable
     - Gellhorn
   - Useful in
     - Stage I-III or mild/moderate prolapse
     - Stage IV or severe prolapse in poor surgical candidates
     - Pts awaiting surgery
     - Pts who wish to have future pregnancy
   - Used in conjunction w/
     - Low-dose estrogen vaginal cream to treat co-existing vaginal atrophy and dryness and to prevent SE
       - 0.25-0.5 g applicator 2-3 nights/wk
   - Support pessaries
     - Most commonly used and typical initial Tx
     - Include ring and Gellhorn types
     - Used for all stages of prolapse
     - Most successful in prolapse of Stage II-III, or mild to moderate prolapse
     - Advantages
       - Easily removed and inserted by pt
       - Allow intercourse while in place
       - More comfortable

- Space-filling pessaries
  - Used in severe prolapse (Stage IV), esp post-hysterectomy vaginal vault prolapse
  - Include cube and inflatable types
  - Have large base supporting vaginal apex
  - No advantage over support pessaries for stress urinary incontinence Sx
  - Disadvantages
    - More difficult to remove than support pessaries
    - Must be removed prior to intercourse
- Vaginal pessary reported to improve Sx[17]
  - Resolves 70-90% of prolapse Sx[18-20]
  - Resolves 40-50% of associated urinary Sx[18,19,21,22]
  - Resolved 20-50% of associated bowel Sx[18,22]
  - 40-60% of women reported incr sexual frequency and satisfaction[22]
- SE
  - Vaginal erosions and ulcers
  - Vaginal discharge or bleeding
  - Irritative symptoms
- Reasons for pessary failure
  - Discomfort, may require multiple fittings
  - Persistent expulsion
  - Inadequate relief of prolapse Sx
  - Worsening or persistent urinary incontinence
  - De novo difficulty w/voiding or defecation
  - Inconvenience

3. Surgery
   - Prolonged benefits $\geq$ 5 yrs in most pts[23]
   - Recurrence rate 30-50%[24-26]
     - Anterior colporrhaphy: lower recurrence w/addition of mesh but rate of stress urinary incontinence may incr[28]
     - Abdominal sacral colpopexy: lower recurrence and dyspareunia[27]
4. Other
   - Physical therapy and behavioral modification (timed voiding/defecation, dietary modifications)
     - May be helpful in mild prolapse
     - Insufficient evidence[29]
   - Estrogen replacement therapy
     - No evidence in support of Tx or prevention[16]
   - Kegel/pelvic floor exercises
     - Insufficient evidence[30]

Follow-Up

1. Gynecologist (urogynecologist) referral
   - For pts desiring surgical procedure

Prevention

1. No effective prevention
2. Cesarean section during active labor does not prevent pelvic organ prolapse[31]
3. Lack of evidence regarding
    - Pelvic floor muscle training to prevent uterine prolapse[30]
    - Pelvic floor exercises in postpartum period to prevent uterine prolapse[32]

Patient Education

1. Uterine prolapse handout
    - English: http://www.thompsonhealth.com/Default.aspx?tabid=94&chunkiid=11477
    - Spanish: http://www.thompsonhealth.com/Default.aspx?tabid=94&chunkiid=103431
2. Kegel exercise handout
    - http://familydoctor.org/online/famdocen/home/women/reproductive/gynecologic/642.html
3. Pessary handout
    - http://familydoctor.org/online/famdocen/home/women/reproductive/gynecologic/578.printerview.html

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