# 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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**Authors: Denise Harbaugh, MD, Benjamin Fredrick, MD, & Michelle Roett, MD,** *Georgetown University-Providence Hospital, DC*

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