Non-Surgical Management of Pelvic Organ Prolapse

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Objectives

• Describe the epidemiology and cause of pelvic organ prolapse.

• Describe the role of the pelvic floor musculature and how it relates to pelvic organ prolapse.

• Describe how to fit and manage a pessary.
What is Pelvic Organ Prolapse?

• ICS Terminology.
• Symptoms, signs, and conditions are separate categories.
• POP: descent of one or more of: anterior vaginal wall, posterior vaginal wall, and the apex (cervix/uterus) or vault (cuff) after hysterectomy.

P. Abrams Neurourol Urodyn 2002
Epidemiology & Prevalence

- Pelvic organ prolapse is identified in over 30% of postmenopausal women.
- Lifetime risk of undergoing surgery for incontinence or prolapse is 1 in 5.
- In the US, 300,000 surgical corrections for POP are completed annually.
- Projected that the number of women with POP will increase 46% from 2010 to 2050 (3.3 to 4.9 million)
Types of Pelvic Organ Prolapse

A  Anterior vaginal prolapse (cystocele)

B  Posterior vaginal prolapse (rectocele)

C  Uterine prolapse

D  Post-hysterectomy vaginal vault prolapse
Muscles of the Pelvis

Vaginal view

Abdominal view
lateral ligament of bladder

pubovesical ligaments, medial and lateral

tendinous arch of levator ani

tendinous arch of pelvic fascia

Cardinal (Mackenrodt’s) ligament (transverse cervical)

presacral fascia

uterosacral ligament

**Pelvic fascia and ligaments**

- **Horizontal portion of pubocervical fascia supports bladder and vagina**
- **Uterosacral ligament**
- **Cardinal ligament**
- **Cervix**
- **Horizontal portion of vagina**
- **Arcus tendineous fasciae pelvis**
- **Vertical portion of vagina**
- **Urethra**

Distal (vertical) portion of pubocervical fascia supports urethra and U-V junction and provides backstop against which urethra is compressed during straining.
Vaginal Support

- 3 Levels of support
  - Uterosacral ligament (USL)
  - Lateral levator fascia attachment (AT)
  - Periurethral, levator, perineal (PCT)

DeLancey JOL AJOG, 1992
Perineal Body

DeLancey AJOG, 1999
Grading Systems

Figure 69.1. Comparison of the four most commonly used pelvic organ prolapse (POP) grading systems. AUGS, American Urogynecologic Society; ICS, International Continence Society; SGS, Society of Gynecologic Surgeons.
Pelvic Organ Prolapse-Quantification System (POP-Q)

• Nine measurements on a 3x3 grid:
  • Aa, Ba, Ap, Bp, C, D
  • total vagina length (tvl)
  • genital hiatus (gh)
  • perineal body (pb)

• Illustrated with sagittal line drawing.

Bump RC et al AJOG, 1996
Stages of Prolapse

• Stage 0: No prolapse
• Stage I: Distal prolapse > 1cm above the hymen
• Stage II: Distal prolapse ≤ 1cm proximal or distal to hymen
• Stage III: Distal prolapse > 1 cm below plane of hymen but no further than 2 cm < total vaginal length (tvl) in cm
• Stage IV: Distal prolapse ≥ (tvl-2cm)

Bump RC et al AJOG, 1996
FIG. 3.1. Distribution of pelvic organ support by pelvic organ prolapse quantification system stage in a population of women seeking routine gynecologic health care. ____, overall curve for the entire population; ---, curve for women aged 18–39 years; ---, curve for women aged 40–59 years; ___, curve for women older than 60 years of age.
• POP is a fluid state.

• Majority of POP progresses, though early stage POP may regress.

• POP progresses in pregnancy and doesn’t truly return to baseline postpartum.

Bradley CS et al. OBGYN, 2007
O’Boyle AL et al. Inter Urogynecol J Pelvic Floor Dysfunct, 2003
“Will the bulge get worse?”

- Often an alternating progression/regression course after menopause
- Prospective observational study included 259 postmenopausal women who underwent 2-4 POPQ exams over 4 years time
  - Degree of prolapse varied each year in individual women
  - 1-year and 3-year prolapse incidences were 26% and 40% respectively
  - Over 3 years, the maximal vaginal descent increased by 2 cm in 11% of women and decreased by 2 cm in 2.7%
  - Elevated BMI and parity increased risk for progression of prolapse

Bradley CS *Obstet Gynecol* 2007
Figure 5. Model for the development of pelvic floor dysfunction in women.
Risk Factors

- Parity
- Advancing Age
- Obesity
- Repetitive increase in intra-abdominal pressure
Symptoms

- Vaginal/pelvic heaviness
- Vaginal bulge
- Urinary symptoms
- Incomplete bladder or bowel emptying
- Need to splint to urinate or defecate
- Sexual dysfunction
- Pelvic or low back pain
- Often asymptomatic until the prolapse reaches the hymen
Clinical Assessment

- History
- Bladder diaries
- Questionnaires
- Pelvic Exam: POP-Q, pelvic floor muscles, vaginal tissues, neuromuscular exam, rectal exam, office cystometry, urine dipstick
**Your Daily Bladder Diary**

This diary will help you and your health care team figure out the causes of your bladder control trouble. The "sample" line shows you how to use the diary.

**Your Name:**

**Date:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Drinks</th>
<th>Trips to the Bathroom</th>
<th>Accidental Leaks</th>
<th>Did you feel a strong urge to go?</th>
<th>What were you doing at the time?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>How many times?</td>
<td>How much urine? (circle one)</td>
<td>Circle one</td>
<td>Sneezing, exercising, having sex, lifting, etc.</td>
</tr>
<tr>
<td><strong>Sample</strong></td>
<td>Coffee</td>
<td>2 cups</td>
<td>✓</td>
<td>✓</td>
<td>Yes</td>
</tr>
<tr>
<td>6–7 am</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
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<td>7–8 am</td>
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<td>Yes</td>
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<td>8–9 am</td>
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<td>Yes</td>
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<td>9–10 am</td>
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<tr>
<td>10–11 am</td>
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<td></td>
<td>Yes</td>
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<tr>
<td>11–12 noon</td>
<td></td>
<td></td>
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<td>Yes</td>
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<td>12–1 pm</td>
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<td>1–2 pm</td>
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<td>2–3 pm</td>
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<td>Yes</td>
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<td>3–4 pm</td>
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<td>4–5 pm</td>
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<td>5–6 pm</td>
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<td>6–7 pm</td>
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<td>Yes</td>
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</tbody>
</table>

Use this sheet as a master for making copies that you can use as a bladder diary for as many days as you need.
Options for Women

• Surgery
• Pharmacologic Therapy
• Behavioral Treatment
• Pessaries
• Nothing
Pharmacologic Therapy

• Estrogen

  – Treatment of UUI or SUI:
    • RCTs showed no benefit in treatment with oral estrogen with/without progesterone in post-menopausal women – may actually worsen urinary symptoms
  – Treatment of POP:
    • Systematic review of RCTs identified that use of raloxifene in post-menopausal women >60 years may reduce need for prolapse surgery
  – Not enough evidence to use estrogen as mainstay of treatment for POP but....
    • Always treat urogenital atrophy!

Hirai K *Int J Urol* 2009
Behavioral Intervention

• Kegel 1948: exercises evolved both as behavioral and physical therapy
• Behavioral treatment with pelvic muscle training and exercise: reduces stress, urge, and mixed incontinence
• Verbal feedback essential with pelvic exam (biofeedback or electrical stimulation)
# Pelvic Floor Muscle Assessment

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No contraction</td>
</tr>
<tr>
<td>2</td>
<td>Flicker</td>
</tr>
<tr>
<td>3</td>
<td>Weak squeeze with 2-sec hold; no obvious lift</td>
</tr>
<tr>
<td>4</td>
<td>Good squeeze, good lift; repeatable; easily head for 5-10 sec</td>
</tr>
<tr>
<td>5</td>
<td>Fair squeeze with definite lift</td>
</tr>
</tbody>
</table>
• Continue to keep bladder diary
• Do 45 pelvic floor muscles exercises every day:
  – 15 at a time, 3 times per day.
    • Do __ lying down.
    • Do __ sitting.
    • Do __ standing.
• For each exercise squeeze your pelvic muscles as quickly and as hard as you can.
  • Hold squeeze for __ seconds.
  • Relax completely between each squeeze for __ seconds.
• Remember to relax all the muscles in your abdomen when you do these exercises and continue to breathe normally.
• Once per day, practice stopping or slowing the stream of urine when you void.
PT for Prolapse

Cochrane review: Some benefit, but may be related to urinary symptoms. No improvement in degree of POP.

PFMT does not improve urinary symptoms @ 6 months or prolapse outcomes at 2 years after prolapse surgery.

Bø K *World J Urol* 2012
Barber *et al* *JAMA* 2014
Pessaries

**History & Evolution**

- **1550 B.C.** Egyptian papyrus identified the use of honey and petroleum applied to the uterus to treat prolapse.
- **500 B.C.** In a method called succussion, women were suspended upside down and pulled up and down with rope for 3-5 min. Was thought that gravity and the rapid movements would return organ to natural position.
- **400 B.C.** Hippocrates used techniques such as cupping and hot oil treatments. The prolapse was smeared with hot oil and attempts were made to reduce the prolapse. An astringent-soaked plug of wool was then inserted into the vagina and changed after 3 days.
- **350 B.C.** Soranus believed that fumigation (using mold, fermented beer, or manure) would cause the uterus to “rebel” and return to normal position.
- **25 B.C.** Celsus wrote of a bronze, cone-shaped pessary with band to tie around the body to keep the pessary in place.
- **16th-19th Century** Pessaries were made of sponge, wood, cork, glass, porcelain, gold and platinum.
- **1783** First rubber pessary introduced by Jean Juville.
Pessaries

• > 100 different kinds of pessaries and no RCTs to support use
• Can be used as interim therapy before surgery or as long-term management option
  – Can also help to identify occult SUI
  – Can be used in pregnancy
• Create functional obstruction within vagina
• High patient satisfaction, reversible, inexpensive
• Prospective study of 100 women identified that after 2 mo, 92% were happy with pessary
  – Nearly all prolapse symptoms and 50% of urinary symptoms had resolved
  – 21% developed occult SUI

Culligan P *Obstet Gynecol* 2012
What is a Pessary?

- A vaginally placed object used to support pelvic organ prolapse and/or improve stress urinary incontinence.
- Material: Flexible silicone
- Low-risk
A) Ring, (B) Shaatz, (C) Gellhorn, (D) Gellhorn, (E) Ring with support, (F) Gellhorn, (G) Risser, (H) Smith, (I) Tandem cube, (J) Cube, (K) Hodge with knob, (L) Hodge, (M) Gehrgung, (N) Incontinence dish with support, (O) Donut, (P) Incontinence ring, (Q) Incontinence dish, (R) Hodge with support, (S) Inflatoball (latex).
**Support pessaries**

- **Ring pessary**
  - First and second degree uterovaginal prolapses
  - The most common pessary, and the easiest to use

- **Gehring pessary**
  - Cystoceles and rectoceles, with or without uterine collapse
  - Can be manually moulded. It rests along the anterior vaginal wall to straddle the bladder, and the lateral bars straddle the rectum, providing support via the ligator sling

- **Hodge pessary**
  - Mild cystoceles in women with a narrow pubic arch, and for correcting a retroverted uterus

**Space occupying pessaries**

- **Cube pessary**
  - Third degree uterovaginal prolapse
  - Maintains its position by creating suction between itself and the vaginal wall. Has no area for drainage and has to be removed nightly

- **Donut pessary**
  - Third degree uterovaginal prolapse
  - Remains in place by having a larger diameter than the genital hiatus. Usually latex, but an inflatable version allows for easy insertion and removal and an individualised fitting

- **Gellhorn pessary**
  - Third degree uterovaginal prolapse with decreased perineal support
  - Concave surface fits against the cervix or vaginal cuff. Stem should be positioned just behind the introitus, so perineum must be intact

Oliver et al. 2011
Ring Pessaries
Donut Pessaries

- **2 types:** Ring and Inflatoball®
- **Pros:** For advanced prolapse and poor perineal support
- **Sizes:** 0-7
- **Placement:**
Cube Pessary

- **1 type:** 6 sided.
- **Pros:** Easy to insert and remove.
- **Sizes:** 0-7
- **Placement:** Suction achieved with high placement.
- **Cons:** Retains secretions, needs to be *removed at least every 48 hours.*
Gellhorn Pessaries

- **Pros:** For advanced prolapse and poor perineal support
- **Sizes:** 1.5 - 3.5 inches
- **Placement:** Oblique insertion concave placement against cervix, stem rests vertical
- **Cons:** Difficult to remove
Pessary Placement & Management

- Patient’s willingness, motivation, sexual activity status, medical condition, and desires to avoid surgery.
- Type and size based on exam.
- After insertion, assess for appropriate size by having the patient Valsalva, walk around, and/or attempt to void.
- Success drops precipitously if neither ring with support or Gelhorn pessary fail to stay in place.
- Follow up 2wks after initial placement and then based upon type and patient.
Advantages/Disadvantages of Commonly used pessaries

**Ring with support**
- Allows coitus
- Easier to insert/remove
- Patient can manage on own if desires

**Cube**
- Can be used for women who are unable to retain ring pessary (gaping introitus, vaginal hypotonicity)
- More difficult to insert/remove
- Increased vaginal discharge as secretions are unable to drain
- Higher incidence of ulceration/irritation
Patient Self-Management

Insertion of the Pessary

Removing The Pessary

- Bladder
- Pubic Bone
- Vagina
Factors Associated With Successful Pessary Fitting | Factors Not Associated With Successful Pessary Fitting | Factors Associated With Continued Pessary Use | Factors Not Associated With Continued Pessary Use
--- | --- | --- | ---
TVL >7cm, Narrow introitus (<4 finger-breadths) | Age, Parity, Estrogen Use, Sexually Active, Previous Hysterectomy, Previous pelvic surgery, POP stage, Predominant prolapse compartment, Genital hiatus size | Sexually active (vs not sexually active), Pessary use for prolapse (vs for stress incontinence), No previous hysterectomy, No previous surgery for prolapse, Normal weight (vs obesity) | Age, Parity, Menopausal status, Surgical History, Levator Ani Strength, POP stage, Predominant prolapse compartment, Genital Hiatus size, Perineal body length, Total vaginal length

ACOG Practice Bulletin #85, September 2007
Pessary Complications

- Infection (bacterial vaginosis)
- Erosion
- Spotting/Bleeding
- Occult SUI
- Pap test abnormalities
- Incarcerated Pessary

Prospective observational study followed women with POP managed with pessary for 5 years:
- 86.1% of women used a pessary successfully for 5 years
- 12.1% experienced minor complications – 6.9% pain/discomfort, 3.2% excoriation or bleeding, 2.0% disimpaction or constipation
- 73.8% of pessary failures occurred within 4 weeks of insertion

Lone F *Int J Gynecol Obstet* 2011
Effectiveness of a Pessary

• Largely successful for remission of most prolapse symptoms.
  – High success rates at alleviating bulge symptoms.
  – Variable success in stress incontinence and about 40-50% improvement in voiding dysfunction.
  – No significant improvement in bowel dysfunction.

• Systematic Review of Pessaries
  – Pessary use associated with improved quality of life.
  – $\frac{1}{2}$ of women continued using pessary during follow-up with acceptable levels of satisfaction.
  – Median discontinuation rate is about 49.1%
    • Failure to retain pessary.
    • Discomfort.
    • Desire for surgery
    • Inability to insert/remove pessary.

Oliver et al. 2011; De Albuquerque Coelho et al. 2016
What do you do?

- Type
- Trial/Assess Symptoms
- Teach
- Follow up
- Lidocaine Jelly
- Assess bleeding and ulcer preventions
Conclusion

• Many options exist besides surgery for women with pelvic floor dysfunction.

• Treatment must be catered to the individual.

• Different treatment modalities may be used in combination.

• Pessaries are effective and can be used both diagnostically as well as therapeutically.
Questions?

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