Pelvic Organ Prolapse (POP)

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POP: Definition

- Loss of support of uterus, bladder, colon or rectum leading to prolapse of one or more of these organs into the vagina
- A continuous condition when measured by visual inspection of the vaginal walls during valsala

Common condition

Site:
- Anterior > posterior > apical

Race
- White women > Hispanic > Black
POP: Incidence

Women; pelvic exam. every 2 years

• Incidence of new: cystocele, rectocele, uterine prolapse
  9%  6%  2%

• Remission rate: Grade 1 (to above introitus)
  24%  22%  48%
  Grade 2, 3 (to or beyond introitus)
  9%  3%  0%

In postmenopausal women

• The incidence of new POP: at 1 year  3 years
  26%  40%

• Remission rates:
  21%  19%
Prevalence of POP

• POP above level of hymeneal ring usually asymptomatic
• Prevalence based on a sensation of a mass bulging into the vagina: 5% to 10%
• Sensation of a mass bulging into the vagina most strongly associated with POP at or below the hymeneal ring:
  - Sensitivity of 84%
  - Specificity of 94%
POP: Pathophysiology
POP: Pathophysiology

Injury to

• Neuromuscular tissue

• Connective tissue
Neuromuscular injury

In POP

• Progressive pelvic floor denervation
• Loss of urethral and vaginal support

• **Childbirth:** Neuromuscular injury
Connective tissue injury

In POP

- Endopelvic anatomical fascial defects
- Abnormalities in quantities and qualities of collagen
- Reduction in total collagen
- Reduced connective tissue to muscle ratio
- Increased incidence of joint hypermobility
Pelvic floor support
3 Levels

Level I

- Cervix and upper third of vagina
- Suspended by connective tissue from pelvic walls
- Provided by: Paracolpium (includes uterosacral-cardinal ligaments complex)

Loss of level I support: uterine and vault prolapse
Uterine prolapse
Vaginal vault prolapse
Pelvic floor support

Level II
• Middle third of vagina

Attached laterally to pelvic side walls by:
• Pubo-cervical fascia
• Pre-rectal fascia
• Arcus tendineus fasciae
• Superior fascia of levator ani

Loss of level II support: cystocele and rectocele
Cystocele
Rectocele
Pelvic floor support

Level III,
• Lower third of vagina

Attachments
• Anterior: fused with urethra
• Posterior: perineal body
• Lateral: levator ani

Loss of level III support: distal rectocele, urethrocele
Rectocele
POP causes / risk factors

- Pregnancy and delivery
- Modifiable lifestyle risk factors
  - Occupation, obesity, smoking
- Medical illnesses, congenital and acquired
- Menopausal status and HRT
- Family history
POP causes / risk factors

- Hysterectomy may increase risk
- Strongest predictors for re-do PFR
  - Hysterectomy for POP
  - Pelvic floor repair
- SUI and POP: ? familial transmission patterns
- POP: more in Caucasian and Hispanic compared to African
  suggest a racial differences
- Twin studies: ? hereditary factors
POP causes / risk factors

- Childbirth associated with increased risk
- Increasing number of deliveries further increases the risk
- Compared to vaginal delivery, c section is associated with a decreased risk
- Life style and socio-economic associated increased risk
- Somatic diseases linked to the POP (DM, HTN)
POP: Clinical presentation
POP clinical presentation

Symptoms

• A mass bulging from the vagina
• Pelvic pressure
• Sensation of a vaginal bulge
• Urinary retention
• Digitate or splint to daefecate or urinate
• Chronic discharge, and bleeding from ulceration

Symptoms may interfere with daily activities, sexual function or exercise
POP: Grading

- POP-Q
- Baden Walker grading system
Pelvic Organ Prolapse Quantification (POP-Q)

For clinical purposes, the degree of POP is commonly described as above, at, or beyond the introitus with or without valsalva

POP-Q

• Defines prolapse by measuring descent of specific segments of the reproductive tract during valsalva relative to a fixed point; the hymen

• Highly reliable, reproducible

But

• Too many variations to allow grouping patients into comparable populations for study purpose

• Too complex for simple clinical communication
The pelvic organ prolapse quantification (POP-Q) exam is used to quantify, describe, and stage pelvic support.

- There are 6 points measured at the vagina with respect to the hymen.
- Points above the hymen are negative numbers; points below the hymen are positive numbers.
- All measurements except tvl are measured at maximum valsala.
### POP-Q

<table>
<thead>
<tr>
<th>Point</th>
<th>Description</th>
<th>Range of Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aa</td>
<td>Anterior vaginal wall 3 cm proximal to the hymen</td>
<td>-3 cm to +3 cm</td>
</tr>
<tr>
<td>Ba</td>
<td>Most distal position of the remaining upper anterior vaginal wall</td>
<td>-3 cm to +tvl</td>
</tr>
<tr>
<td>C</td>
<td>Most distal edge of cervix or vaginal cuff scar</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Posterior fomix (N/A if post-hysterectomy)</td>
<td></td>
</tr>
<tr>
<td>Ap</td>
<td>Posterior vaginal wall 3 cm proximal to the hymen</td>
<td>-3 cm to +3 cm</td>
</tr>
<tr>
<td>Bp</td>
<td>Most distal position of the remaining upper posterior vaginal wall</td>
<td>-3 cm to + tvl</td>
</tr>
</tbody>
</table>

**Genital hiatus (gh)** – Measured from middle of external urethral meatus to posterior midline hymen

**Perineal body (pb)** – Measured from posterior margin of gh to middle of anal opening

**Total vaginal length (tvl)** – Depth of vagina when point D or C is reduced to normal position
### POP-Q Ordinal stages

*Created to make comparison and clinical communications more practical*

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No descend of pelvic structures during straining</td>
</tr>
<tr>
<td>I</td>
<td>The leading surface of the prolapse does not descend below 1 cm above the hymenal ring</td>
</tr>
<tr>
<td>II</td>
<td>The leading edge of the prolapse extends from 1 cm above the hymen to 1 cm through the hymenal ring</td>
</tr>
<tr>
<td>III</td>
<td>The prolapse extends more than 1 cm beyond the hymenal ring, but there is no complete vaginal eversion</td>
</tr>
<tr>
<td>IV</td>
<td>Complete eversion of the vagina</td>
</tr>
</tbody>
</table>
Baden Walker Grading of POP

- First degree
  Lowest part of prolapse descends halfway down the vagina to the introitus

- Second degree
  Lowest part extends to the level of introitus and through on straining

- Third degree
  Lowest part extends through introitus and lies outside the vagina

- Procidentia
  Describes complete uterine prolapse
Classification of POP

**Urethrocele:** Urethra

**Cystocele:** Bladder

**Uterovaginal prolapse:** Uterus and upper vagina

**Enterocele:** The upper posterior wall of the vagina
- Traction: secondary to utero-vaginal prolapse
- Pulsion: secondary to chronically raised abdominal pressure
- Iatrogenic: previous pelvic surgery

**Rectocele:** The lower posterior wall of the vagina
Treatment of POP
“Prevention” of POP

- Avoid chronic increases in intra-abdominal pressure
  - Constipation
  - Chronic pulmonary diseases
  - Heavy weights
- HRT: may decrease incidence
- Smaller family size
- Antenatal and postnatal PFMT
- Intrapartum care: careful Mx of 2nd stage
- C section: ? protective effect
POP: Conservative management

Physiotherapy

- In mild cases
- Young women who find vaginal device unacceptable
- May use
  - PFMT
  - Biofeedback
  - Electrical stimulation
  - Vaginal cones

Vagina support devices may be used:

- Family not completed
- During pregnancy and postpartum
- If surgery carries major risk
- While considering or waiting for surgery
Vaginal Support Devices
POP: Surgery

• 11 – 19 % life time risk of surgery for POP by the age of 80 - 85
• Up to 30 % may require an additional PFR

Aims of surgery
• Improve symptoms
• Improve QoL
• Restore anatomy
PFR; the choice of procedure

- Reconstructive or obliterateive
- Repair of multiple sites of POP
- Hysterectomy or hysteropexy
- Concomitant continence surgery
- Use of surgical mesh
Surgical management of POP

- Anterior compartment
- Posterior compartment
- Apical compartment
Anterior repair

Two surgical approaches:

• Traditional Rx: less complications
  Lower risk of reoperation

• Prosthetic Rx (use of synthetic mesh): Higher success rate

Surgical Rx

• Improves QoL
• Improves sexual function
Anterior repair
Posterior repair
Perineal reconstruction
Posterior repair
Uterine preserving POP surgery

Suspend the uterus (Hysteropexy)

Rationale to preserve the uterus

- Fertility
- Role in orgasm and female sexuality
- Female sexual identity
- Lack of uterine pathology

Routes

- **Abdominal**: Sacrohysteropexy
- **Vaginal**: Manchester repair, sacrospinous hysteropexy and uterosacral ligament plication
- **Laparoscopic**: Round ligament plication, sacrohysteropexy, uterosacral plication
Vault suspension

- Sacrocolpopexy
- Sacrospinous colpopexy
- Posterior intravaginal slingplasty
Sacrocolpopexy
Sacrospinous colpopexy
PFR Complication

General
Specific
PFR: General complications

- Anesthetic problems: very rare
- Bleeding: Serious requiring transfusion (< 1%)
- Post operative infection: Small risk
- UTI: 6% if a catheter has been used
PFR: Specific complications

- Constipation: common
- Injury to bladder, urethra, ureters, rectum: uncommon
- Urine retention: rare, avoid bladder neck sutures
- Postoperative stress urinary Incontinence:
  - After a large anterior wall repair
  - ? Urodynamics prior to surgery (Occult USI)
- Mesh Complications:
  - Mesh extrusion: 5-10%
  - Vaginal pain
  - Dyspareunia