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 valsalva

Common condition

Site:
• Anterior > posterior > apical

Race
• White women > Hispanic > Black
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
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 pelvic floor repair (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.
## 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>
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</tbody>
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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 2\textsuperscript{nd} 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 years
- Up to 30 % may require an additional PFR

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

- Reconstructive or obliterate
- 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
Hysterectomy / hysteropexy
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