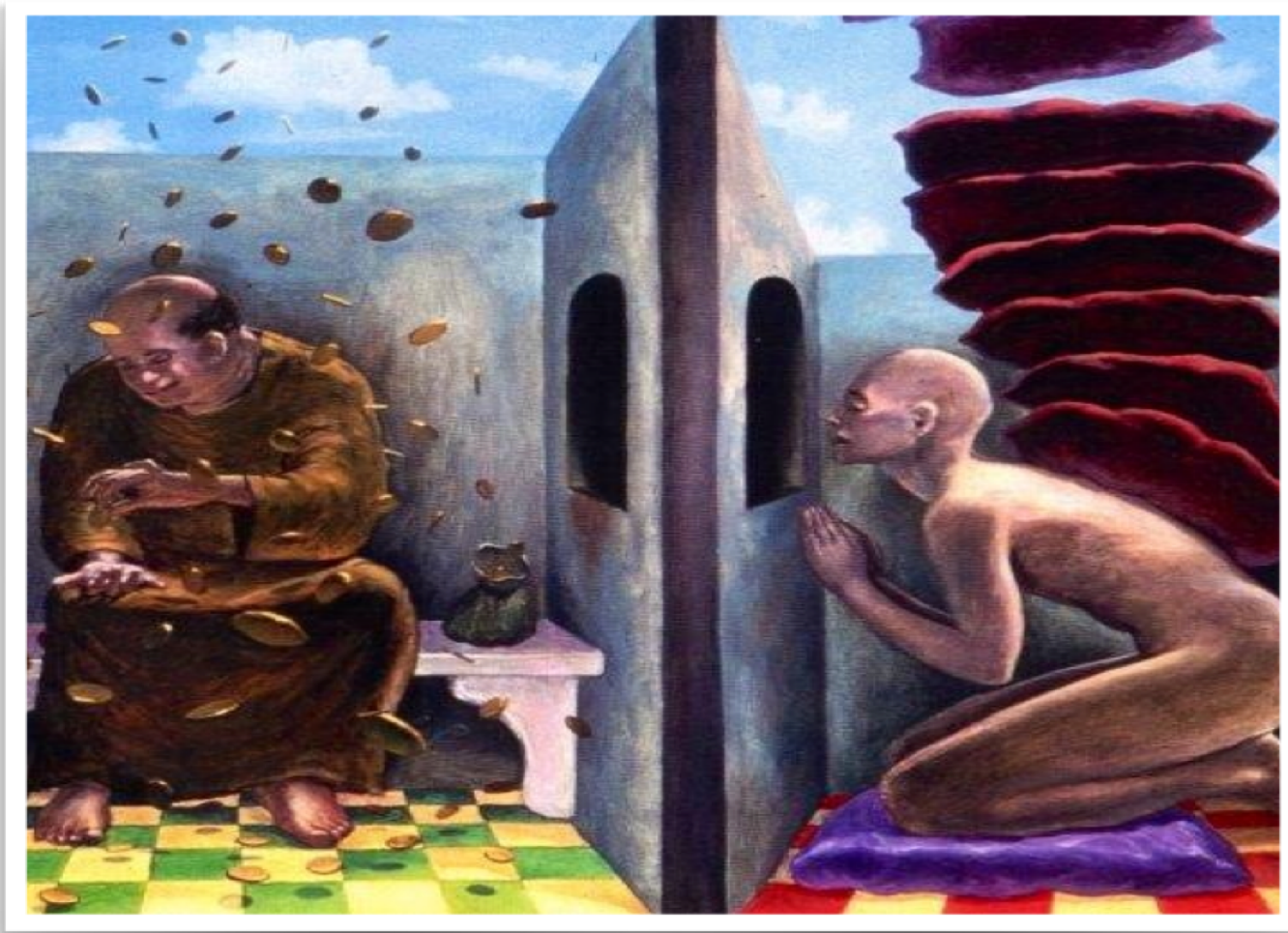


Pelvic Organ prolapse

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I have no disclosures

Pelvic Organ prolapse (POP)

- Defined as: descent of one or more aspects of vagina or uterus
- Uterine prolapse; Herniation of the uterus into or beyond the vagina as a result of failure of the ligamentous and fascial supports.
- Vaginal wall prolapse; Herniation of surrounding organs into the vaginal space
 - Cystocele (anterior wall- Bladder herniation)
 - Vaginal vault prolapse (Intestinal herniation)
 - Enterocele (apical or posterior wall- Intestinal herniation)
 - Rectocele (posterior wall- rectal herniation)
- Often global problem → POP in multiple compartments

Pelvic Organ prolapse (POP)

- Common condition
- Multifactorial etiology
- Benign
- Most women feel symptoms of POP → leading edge is 0.5cm distal to hymenal ring***

Vaginal bulge and pressure

Voiding dysfunction

Defecatory dysfunction

Sexual dysfunction

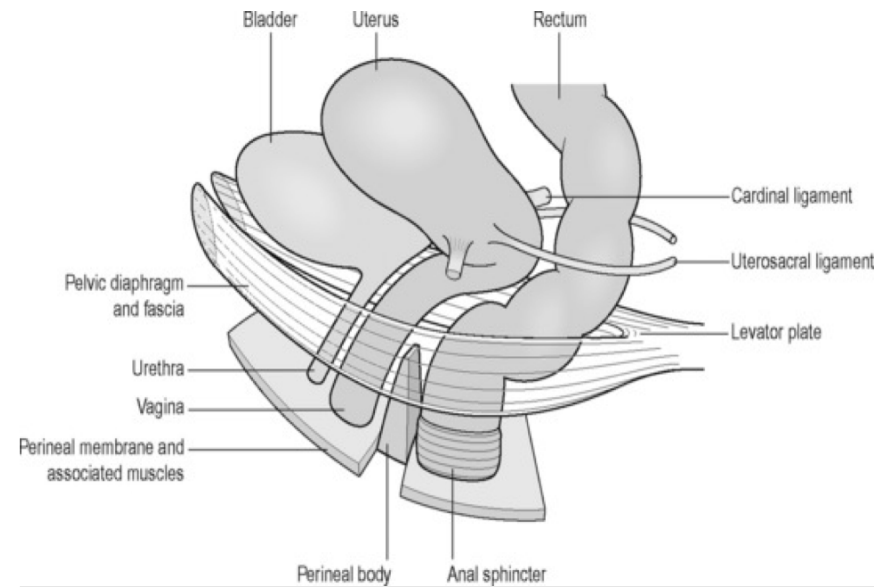
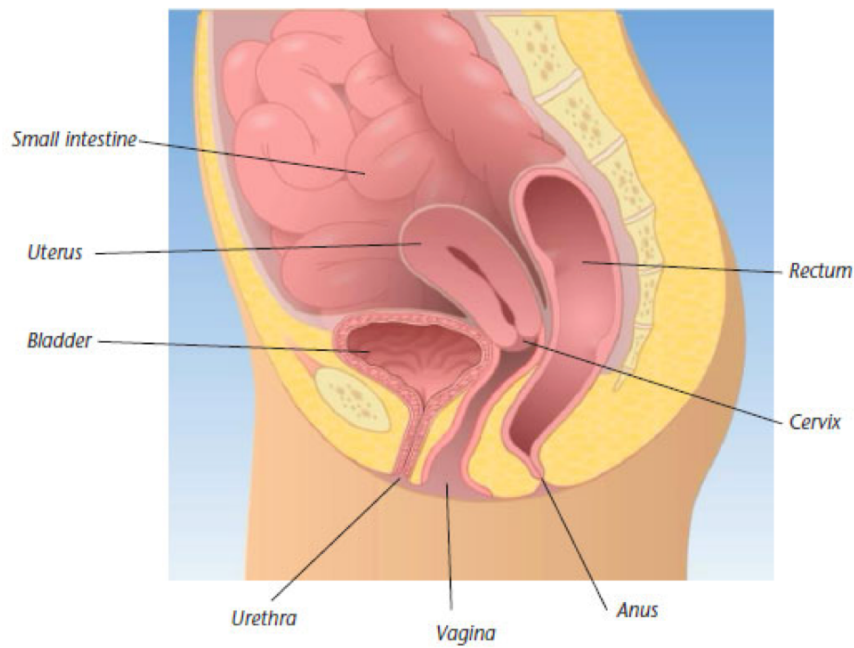
Pelvic Organ prolapse (POP) Epidemiology

- Approximately 3% of women in the United States report symptoms of vaginal bulging
- Prevalence of POP based on reported symptoms much lower (3–6%) than the prevalence identified by examination (41–50%)
- Incidence of POP surgery is 1.5–1.8 surgeries per 1,000 women years
- Approximately 300,000 POP surgeries each year in the United States
- Lifetime risk of surgery for POP-13%
- By 2050-females with symptomatic POP to increase by 50%

Pelvic Organ prolapse (POP)- Risk Factors

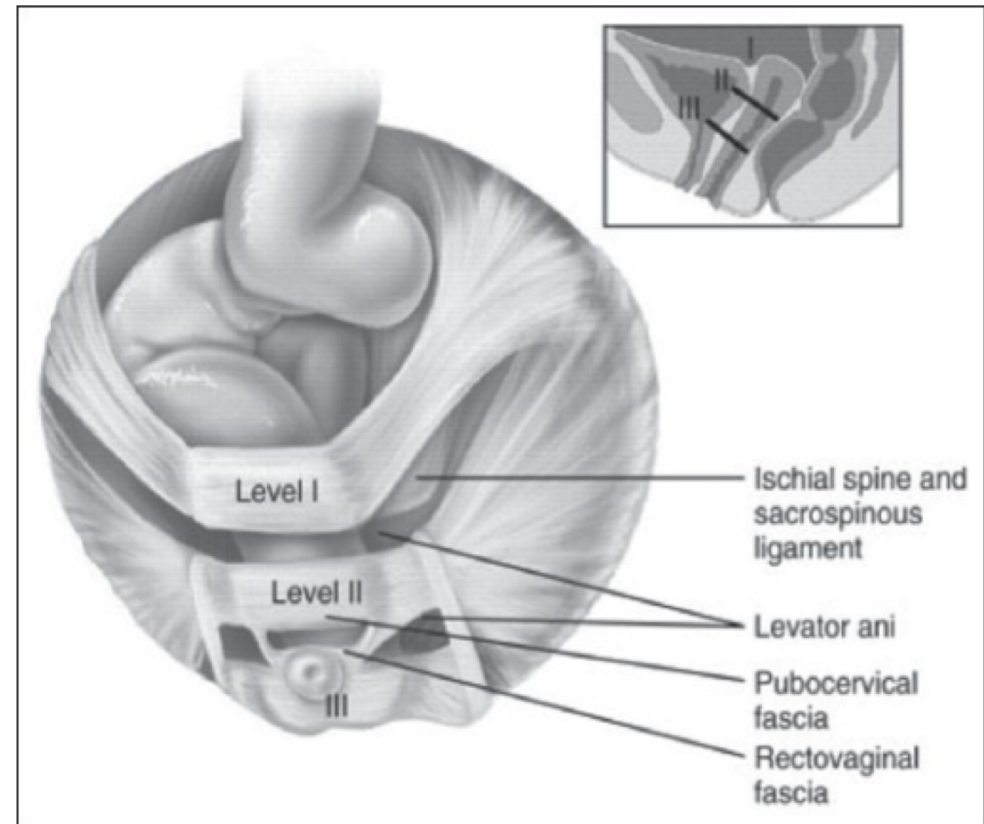
- VAGINAL DELIVERY (strongest risk factor)
- PARITY
- AGE
- OBESITY
- CONNECTIVE TISSUE DISORDERS
- MENOPAUSAL STATUS
- CHRONIC CONSTIPATION
- GENETIC PREDISPOSITION

Normal female anatomy



Delancey's three levels of pelvic support

- Level 1- Suspensory Axis: Cardinal-uterosacral ligament complex. Provides apical attachment of the uterus and vaginal vault to the bony sacrum.
- Level 2- Attachment axis: Arcus tendineous fascia pelvis and the fascia overlying the levator ani muscles. Provide support to the middle part of the vagina.
- Level 3: The urogenital diaphragm and the perineal body. Provide support to the lower part of the vagina. (Strongest support)



Delancey's three levels of pelvic support

- **Level I**

- Suspends vaginal apex to pelvic walls and sacrum
Damage-apical prolapse

- **Level II**

- Mid-vaginal lateral attachment
Avulsion-Cystocele, Rectocele

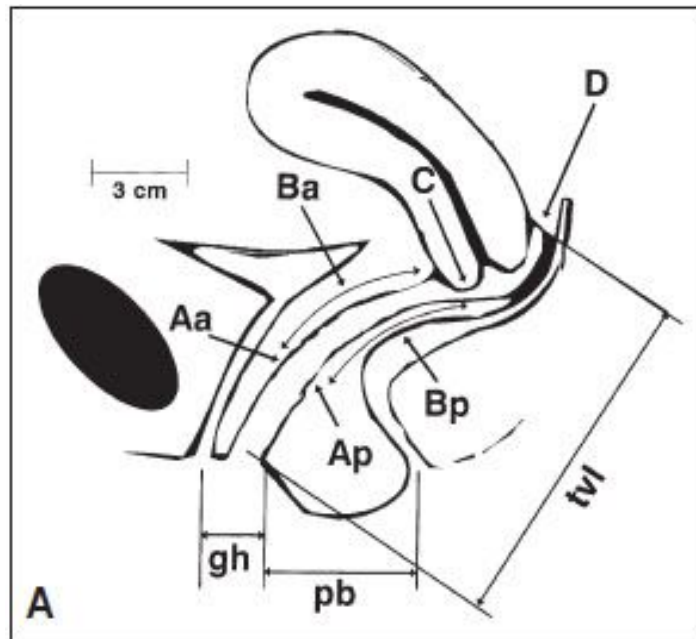
- **Level III**

- Distal perineal fusion of vagina to perineal body and levators
Distal rectocele, perineal descent, Anal Incontinence

Pelvic Organ prolapse (POP)- Evaluation

- History
- Symptom severity
- Physical exam
- Evaluate LUTS
- Evaluate Bowel function
- Quantify prolapse (POPQ)-repeat standing if on exam prolapse described not seen

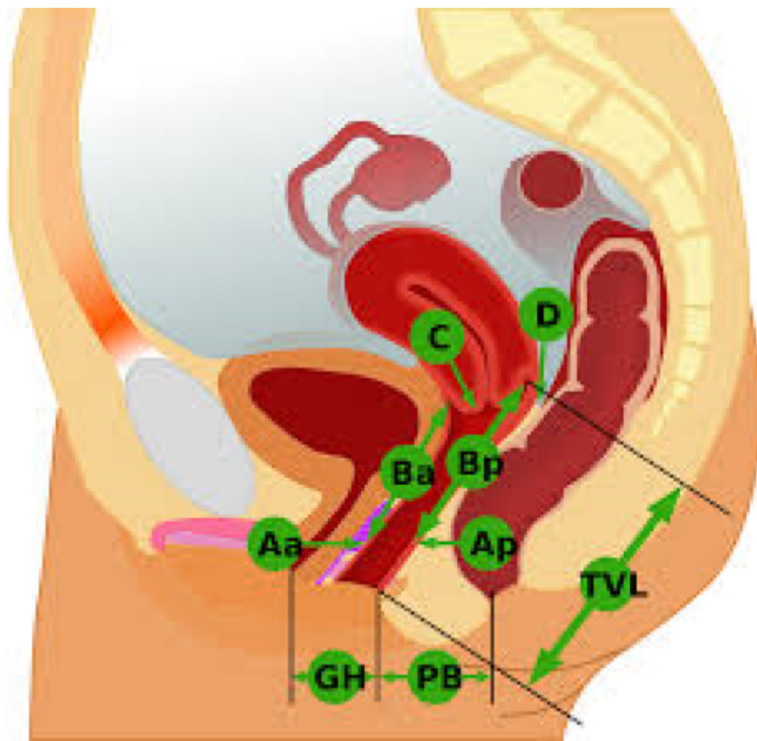
POP Quantification System-POPQ



anterior wall Aa	anterior wall Ba	cervix or cuff C
genital hiatus gh	perineal body pb	total vaginal length tv
posterior wall Ap	posterior wall Bp	posterior fornix D

(From Bump RC, Mattiasson A, Bø K, et al. The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction. *Am J Obstet Gynecol* 1996;175:10)

Pelvic Organ prolapse (POP)- Evaluation



- Evaluate all walls
- Quantify findings
 - POPQ
- Examine Supine and Standing
- At rest and with Valsalva
- Full/half speculum

What is prolapsing?



Cystocele



Rectocele



Pelvic Organ prolapse (POP)- Treatment

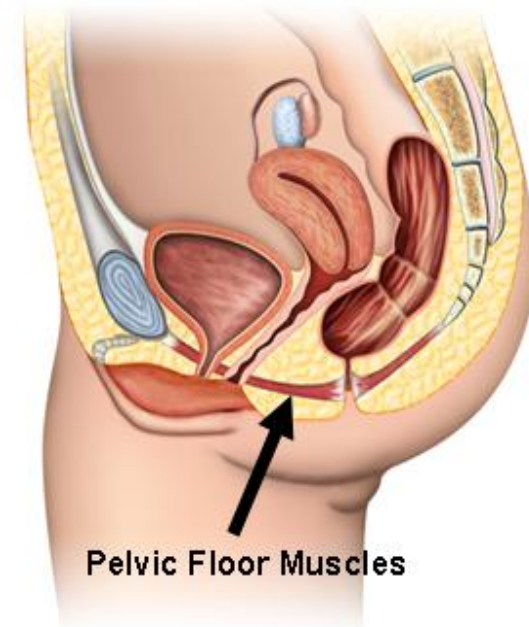
- Determined by
 - Patient age
 - Physical activity level
 - Severity of symptoms and physical findings
 - Degree of disability
 - Coital activity
 - Desire for future fertility
 - Desire for surgery
- Education-voiding and defecatory dysfunction can be related to POP

POP- Who needs to be treated and how?

- Pt often will not report symptoms
- Treatment only indicated if symptomatic (not by grade or stage)
- Pelvic floor physical therapy
- Pessary-safe and effective alternative to surgery
- Surgery

POP treatment- Pelvic floor muscle Training -PFMT

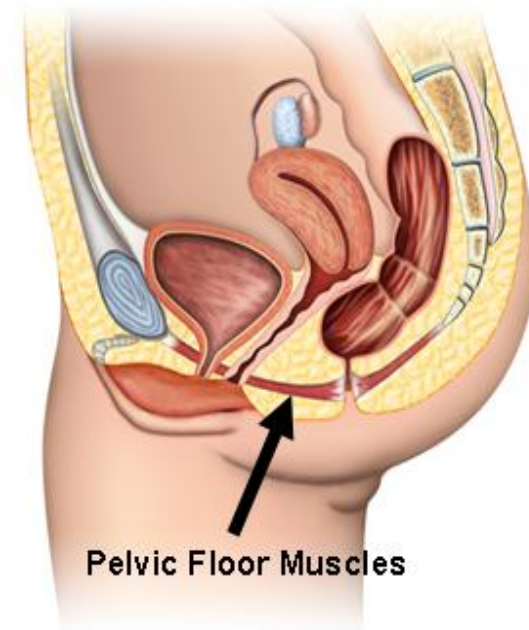
- Pelvic floor muscle training is without adverse effects
- Can improve severity of prolapse
- Can reduce prolapse symptoms (vaginal bulging and/or heaviness)
- Reduce urinary/ bladder symptoms(SUI, urge urinary incontinence)
- Reduce bowel symptoms (flatus, loose fecal incontinence).



POP treatment- Pelvic floor muscle exercises

Intervention women had

- significantly greater improvement than controls in prolapse symptoms
- significantly more likely to have an improved prolapse stage
- significantly more likely to say their prolapse was better



POP treatment- Pessaries



- Offer if desires future pregnancy
- Wants to avoid/ delay surgery
- Poor surgical candidate
- 92% can be fitted
- 2-9% develop localized erosions
- Remove and clean
- Vaginal estrogen

POP treatment- Pessaries

- Egyptians were the first to describe pelvic organ prolapse & pessary was known treatment
- The word *pessary* frequently appears in both Greek and Latin literature
 - Very different from modern pessary
- Hippocrates mentioned the use of half a **pomegranate** introduced into the vagina in instances of prolapse.
- Soranus likewise suggested the use of this fruit as a pessary
- Aurelius Cornelius Celsus (27BC–AD50) wrote of the use of pessaries in *De Medicina*.
- A bronze cone-shaped vaginal pessary with a perforated circular plate at its widest end was found at Pompeii.



POP treatment- Pessaries

- Around AD1050, Trotula, wife of Joannes Platearius, was the first recorded female practitioner of gynecology.

She originated the use of a ball pessary

- Caspar Stromayr of Lindau, Germany, recommended in 1559 that a sponge tightly rolled and bound with string, dipped in wax, and covered with oil or butter be substituted for a pomegranate as a pessary



POP treatment- Pessaries

- Several different shapes and sizes
- Most are made of silicone- nonallergenic
- Target symptoms of POP, SUI, or both.
- Two categories: support and space-filling

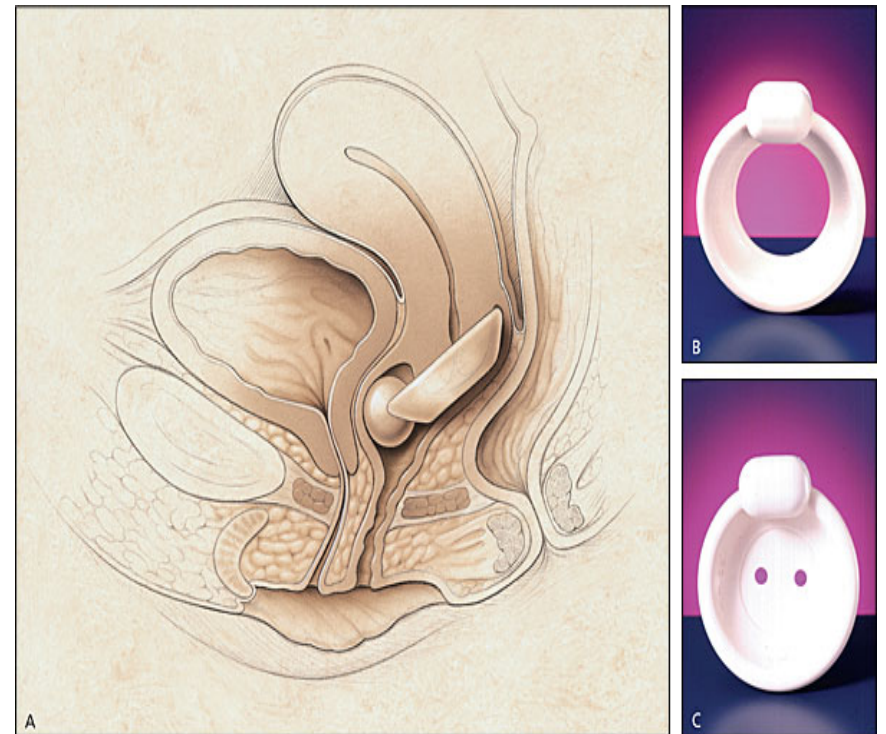
support pessary is used to treat all stages of POP and SUI

space-filling pessary is mostly used for severe POP



POP treatment- Support Pessaries

- Essentially two-dimensional
- Sit in the long axis of the vagina.
 - Ring (+/-support diaphragm)
 - Lever ; Hodge, Smith & Risser
 - Gehrung
 - Shaatz
 - Incontinence ring or dish



POP treatment- Space filling Pessaries

- Essentially three-dimensional,
- Often needed in women with severe (stage III or IV) POP especially post-hysterectomy vaginal vault prolapse
- Offer no advantage in the treatment of SUI.

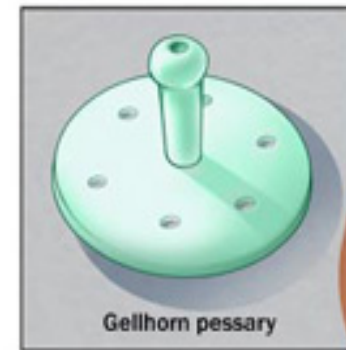
Gellhorn,

Donut

Cube,

Inflatoball

Colpexin sphere



POP treatment- Surgery

- Patient goals- elderly vs. young
Reconstructive vs. Obliterative
- Address all levels of support
- Minimally invasive vs. open
- Combined with treatment for urinary incontinence

POP treatment- Surgery

- After Primary surgery 30-60% risk of need for second surgery.
- Newer studies: 2nd surgery rate 6-30%
- POP surgery that includes suspension of vaginal apex → assoc. with decreased re-operation rate.
- Risk for recurrent prolapse
 - Having 1st surgery before age of 60
 - Obesity
 - Stage III/IV prolapse

POP treatment- Surgery

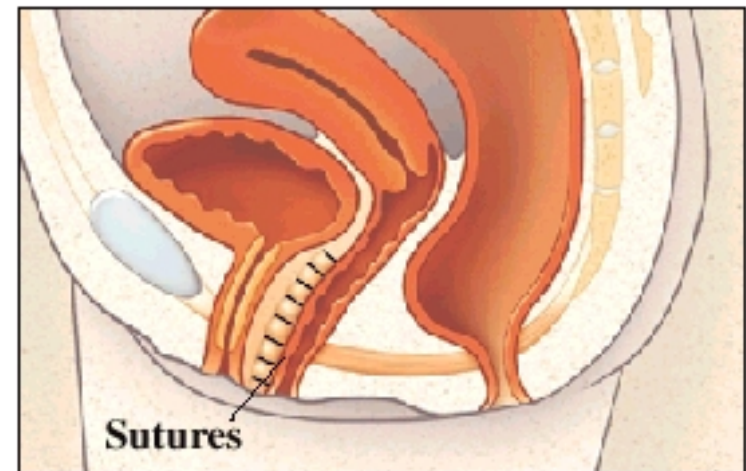
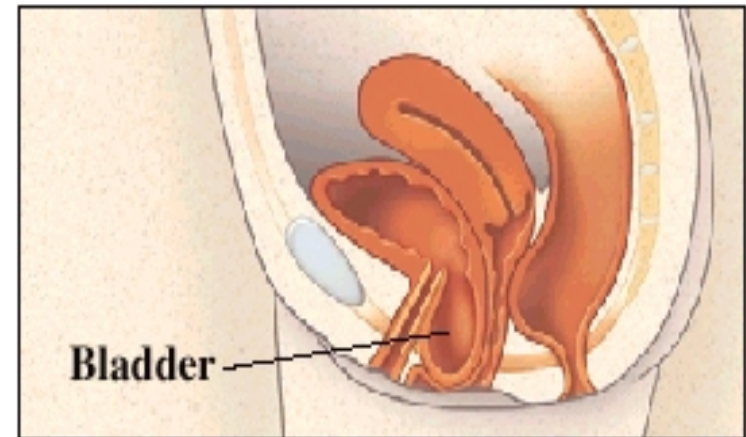
- Multiple Approaches-
 - Vaginal
 - Laparoscopic
 - Robotic,
- Augmentation with mesh or without

POP treatment- Surgery

- Vault repair-consider at time of Hysterectomy
- Abdominal Sacral Colpopexy with mesh- lowest recurrence rate but more risks of complications
- Colpocleisis- Obliterative procedure-1st line in elderly female with multiple co-morbidities who does not wish to preserve future vaginal intercourse.

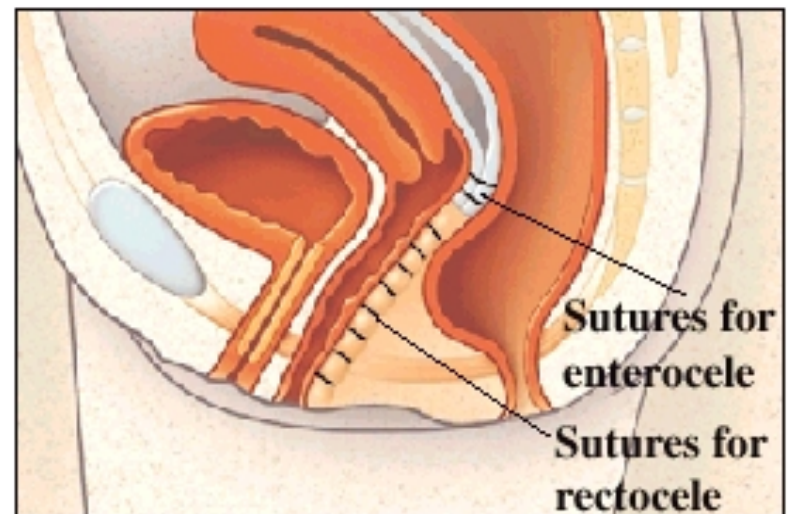
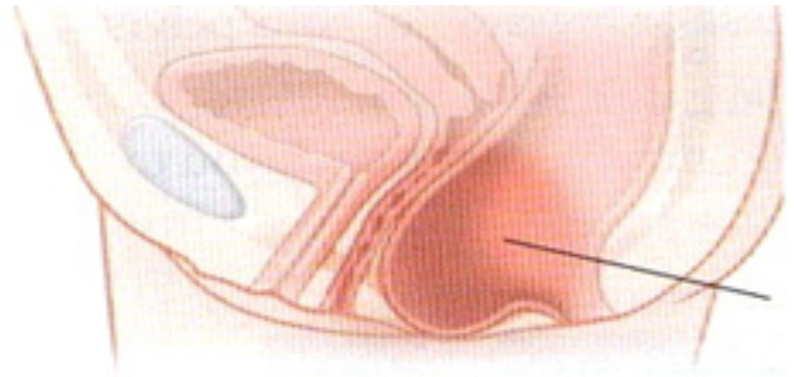
POP treatment- Surgery; Cystocele

- Anterior repair-for AWD with native tissue
- High % of women with AWD also have Apical prolapse
- Support of Apex at time of AR reduces recurrent prolapse risk
- Paravaginal defect/repair → unreliable by exam
 - Usually indicates loss of apical support



POP treatment- Surgery; Rectocele

- More effective done transvaginally than transrectally
- Retrospective study: site specific repair higher recurrence rate
- Prospective study: comparable outcomes
- Mesh should not routinely be used



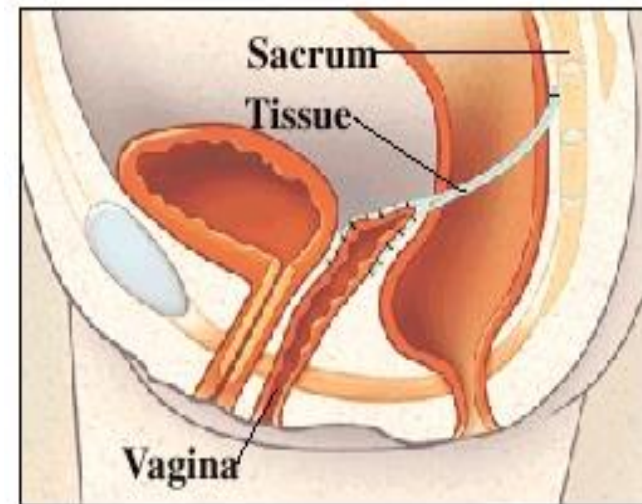
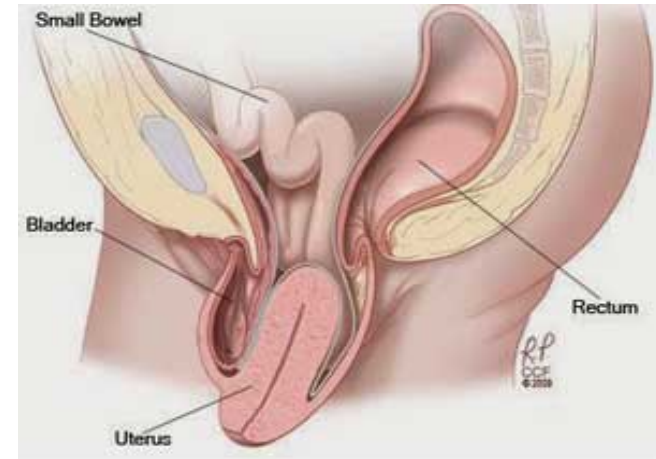
POP treatment- Surgery; Vault suspension

Vaginal native tissue repair

- Uterosacral vault suspension, Sacrospinous Ligament Fixation
- Less invasive & Less risk than abdominal approach
- Slightly higher recurrence risk (65-80% Success)
- Use Pelvic Ligaments for suspension/support

Sacral colpopexy

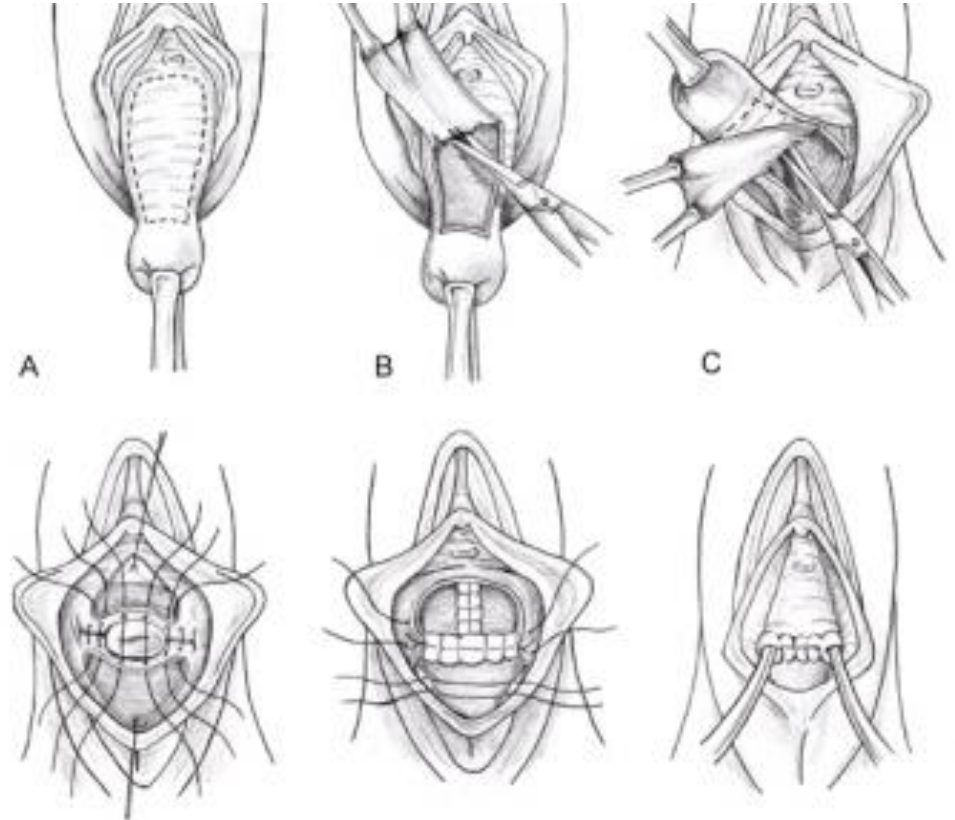
- Proven/effective surgery for POP
- Lower recurrence risk but higher complication rate (SBO, ileus, mesh and suture complication)
- CARE trial (7yr follow-up) 10% mesh complication rate
Most non-type 1 Mesh (small pore size, multifilament) no longer used
- Synthetic mesh bridge from vaginal apex → ant. Long. Lig of sacrum
- 5yr randomized study: mesh vs. cadaveric fascia → polypropylene mesh had better anatomical cure rate (93% vs. 62% P=0.2)



Vaginal vault suspension

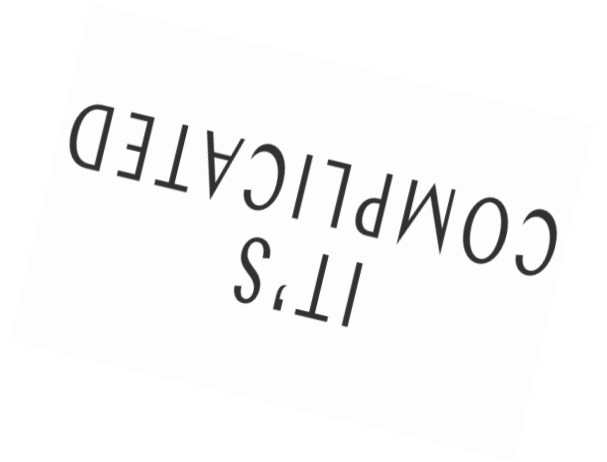
POP treatment- Surgery; Colpocleisis

- Obliterative procedure-narrow, shorten, closes off vagina
- With or without Hysterectomy
- 1st line: elderly patient, medical issues no longer desires vaginal intercourse as an option.
- Subj/Obj success rate over 95% with low recurrence rate
- Le Fort vs. total Colpectomy
- Pap, EMB, HPV prior to procedure – If no Hyst
- High risk of post-operative SUI



Transvaginal Mesh vaginal repairs for POP

- Considered high risk procedures
- Certain patients benefits justify risks
- Informed consent (and documentation) is crucial



References

- Obstet Gynecol. 2017 Apr;129(4):e56-e72. doi: 10.1097/AOG.0000000000002016.Practice Bulletin No. 176: Pelvic Organ Prolapse.Committee on Practice Bulletins—Gynecology and the American Urogynecologic Society.
- Obstet Gynecol. 2009 Dec;114(6):1278-83. doi: 10.1097/AOG.0b013e3181c2ce96.Forecasting the prevalence of pelvic floor disorders in U.S. Women: 2010 to 2050.Wu JM1, Hundley AF, Fulton RG, Myers ER.
- Obstet Gynecol. 2010 Nov;116(5):1096-100. doi: 10.1097/AOG.0b013e3181f73729.Lifetime risk of undergoing surgery for pelvic organ prolapse.Smith FJ1, Holman CD, Moorin RE, Tsokos N.
- Int Urogynecol J. 2015 Nov;26(11):1559-73. doi: 10.1007/s00192-015-2695-8. Epub 2015 May 13.Risk factors for pelvic organ prolapse and its recurrence: a systematic review.Vergeldt TF1, Weemhoff M2, IntHout J3, Kluivers KB4.
- Cochrane Database Syst Rev. 2013 Apr 30;(4):CD004014. doi: 10.1002/14651858.CD004014.pub5.Surgical management of pelvic organ prolapse in women.Maher C1, Feiner B, Baessler K, Schmid C.
- J Urol. 2016 Apr;195(4 Pt 1):1014-20. doi: 10.1016/j.juro.2015.10.138. Epub 2015 Oct 30.Risk of Prolapse Recurrence after Native Tissue Anterior Vaginal Suspension Procedure with Intermediate to Long-Term Followup
- Obstet Gynecol. 2017 Nov;130(5):1170-1172. doi: 10.1097/AOG.0000000000002393.Practice Bulletin No. 185 Summary: Pelvic Organ Prolapse.
- Int Urogynecol J. 2016 Jul;27(7):981-92. doi: 10.1007/s00192-015-2846-y. Epub 2015 Sep 25.The efficacy of pelvic floor muscle training for pelvic organ prolapse: a systematic review and meta-analysis.Li C1, Gong Y2, Wang B3.
- J Gynecol Obstet Biol Reprod (Paris). 1994;23(2):131-6.[Gynecology and obstetrics in ancient Egypt].[Article in French]Morice P1, Josset P, Colau JC.
- Int Urogynecol J Pelvic Floor Dysfunct. 2009 Jan;20(1):45-51. doi: 10.1007/s00192-008-0726-4. Epub 2008 Sep 20. A randomized controlled trial of pelvic floor muscle training for stages I and II pelvic organ prolapse.Hagen S1, Stark D, Glazener C, Sinclair L, Ramsay I.
- Am J Obstet Gynecol. 2010 Aug;203(2):170.e1-7. doi: 10.1016/j.ajog.2010.02.037. Epub 2010 May 1.Can pelvic floor muscle training reverse pelvic organ prolapse and reduce prolapse symptoms? An assessor-blinded, randomized, controlled trial.Braekken IH1, Majida M, Engh ME, Bø K.