

# PELVIC ORGAN PROLAPSE

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- ▶ Prolapse (Latin: Prolapsus—“a slipping forth”) refers to a falling, slipping, or downward displacement of a part or organ.
- ▶ The descent of one or more of the anterior vaginal wall, posterior vaginal wall, the uterus (cervix), or the apex of the vagina (vaginal vault or cuff scar after hysterectomy).

# Mechanism of normal supports of Uterus and Vagina

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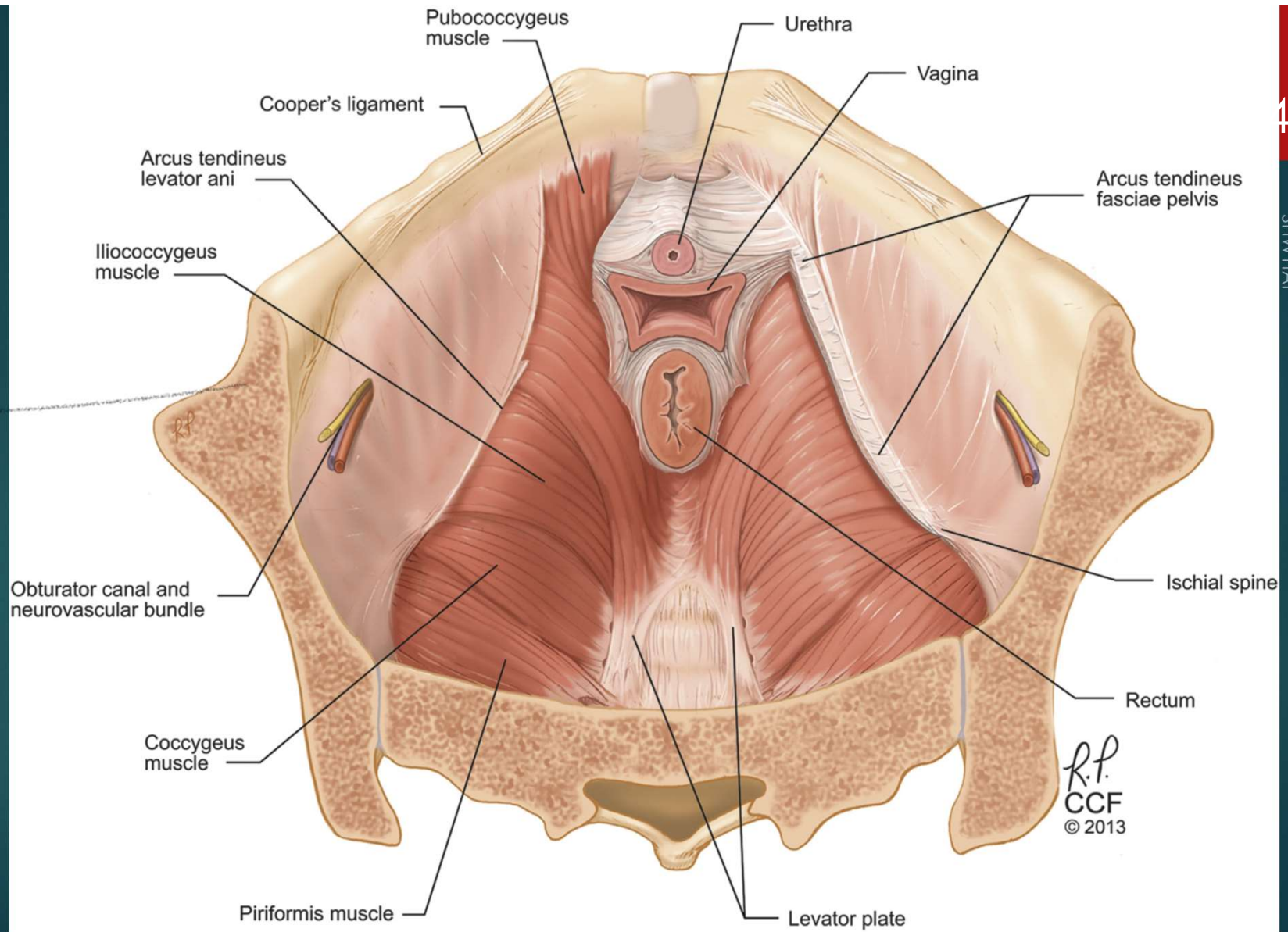
## Interaction between :

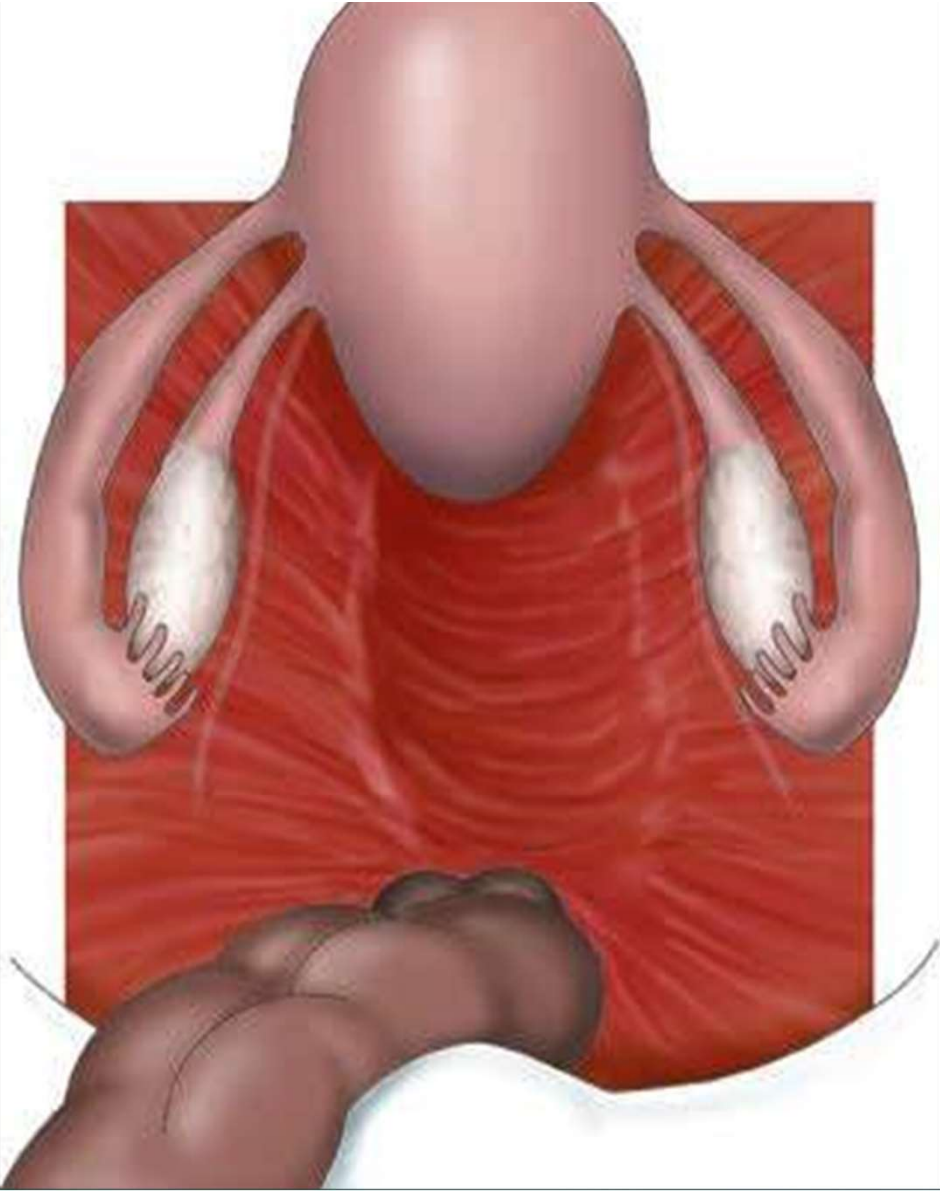
### ▶ Pelvic muscles ( Levator Ani group)

Primary support gives a firm elastic base on which organs rest.

### 2. Connective Tissue

Stabilize the organs in Correct position





# Functional Anatomy of the Pelvic Floor

- ▶ Related to the functions of support of the pelvic organs as well as storage and elimination of feces and urine, continence, and incontinence.
- ▶ Dynamic interaction of the endopelvic fascia, pelvic floor muscles, perineal body, and perineal muscles.

# Pelvic Diaphragm

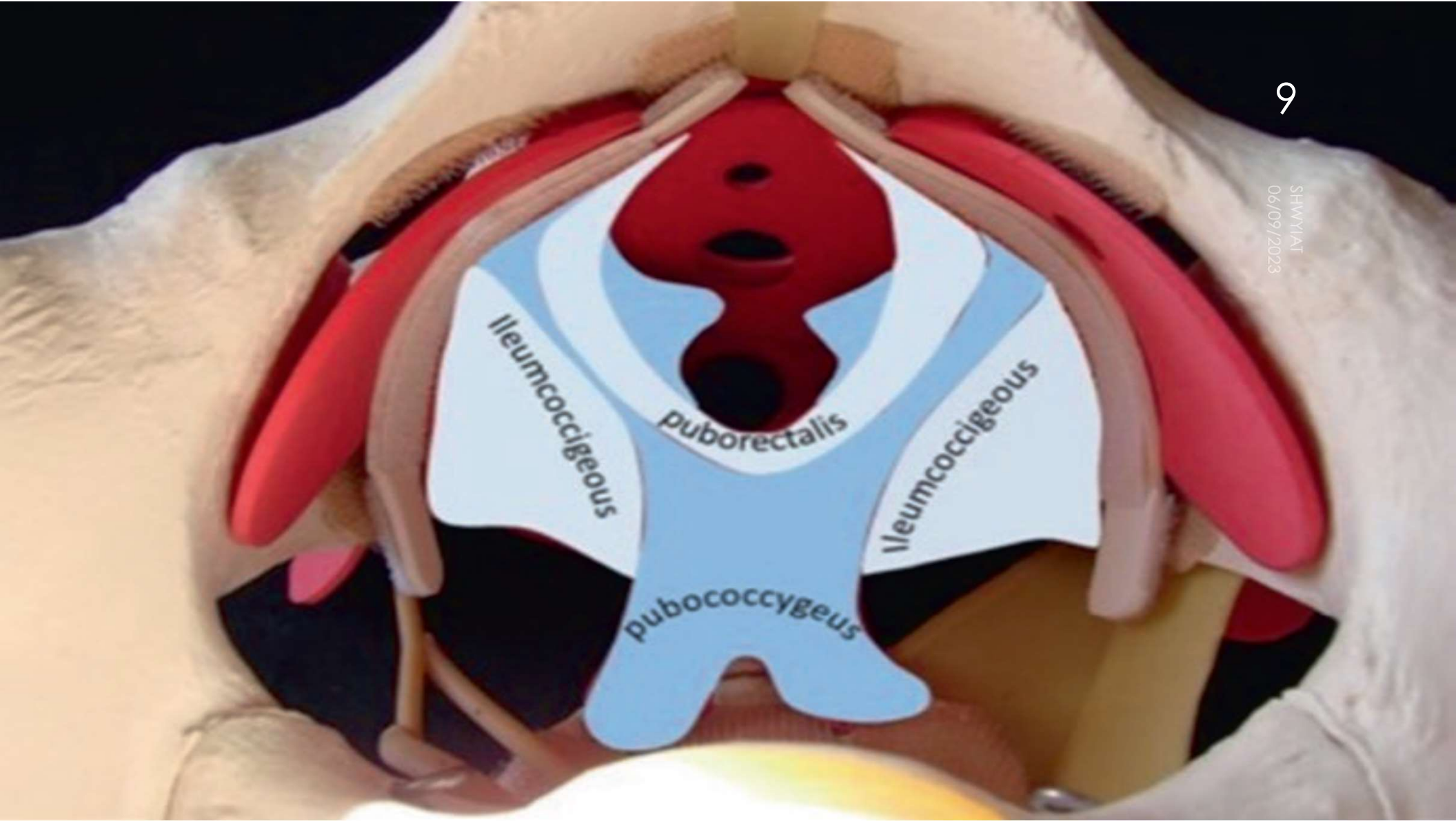
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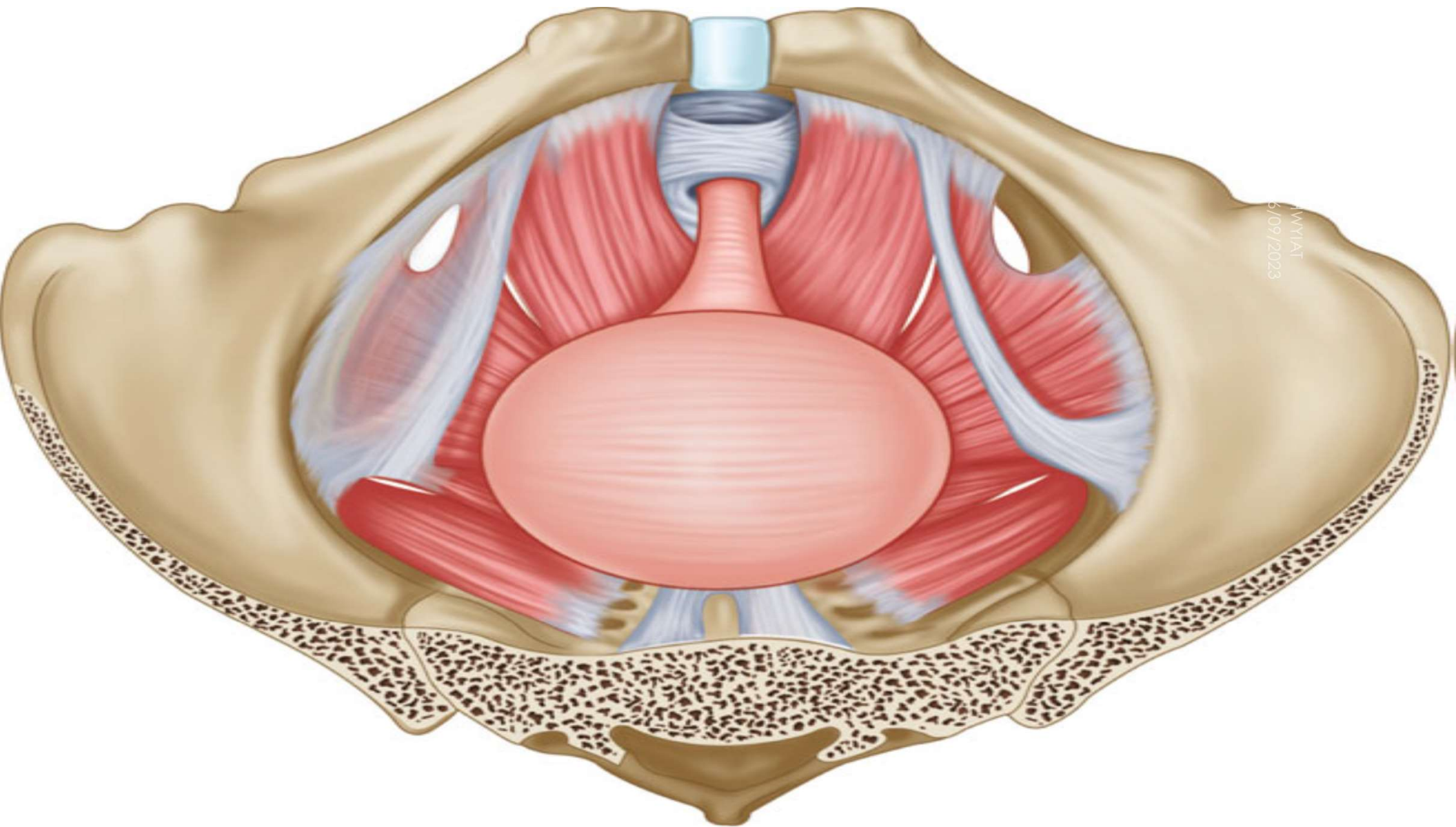
- ▶ Many controversies regarding the terminology of the levator ani muscle and related fascias
- ▶ Is made of the muscles levator ani and ischiococcygeus.

# The levator ani is made of

1. Pubococcygeus (pubovisceral) muscle: Originates in the pubic bone and inserts in the coccyx .
2. Puborectalis muscle: This muscle originates from the pubic bone and inserts in the contralateral side of the same bone, forming a sling that involves the distal rectum. Its contraction results in the rectoanal angle.
3. Iliococcygeus muscle: Originates at the arcus tendineus fascia pelvis, extends posteromedially, and inserts in the anterior aspect of the sacrum, resulting in the levator ani plateau.



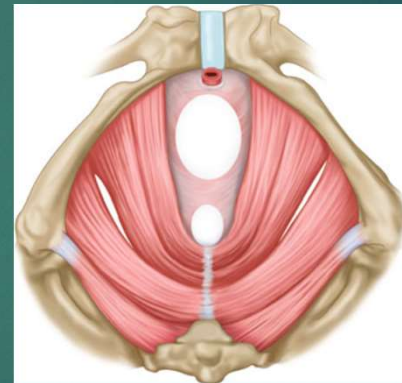




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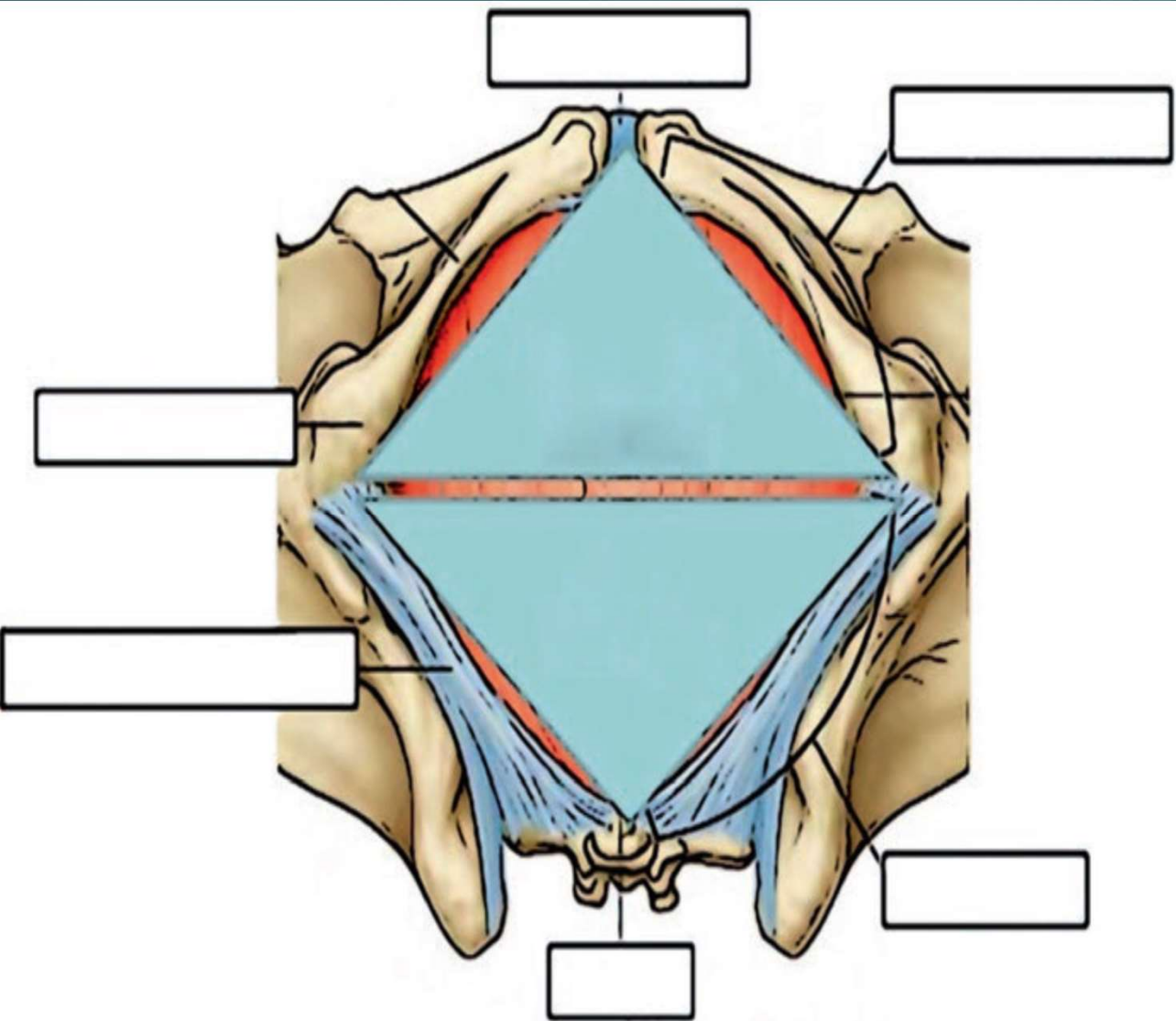
# Female perineum

- ▶ Rhomboidal in shape and delimited
  - Anteriorly by the pubic bone and symphysis.
  - Anterolaterally by the iliopubic ramus of the iliac bones.
  - Laterally by the ischial tuberosities.
  - Posterolaterally by the sacrotuberous ligaments.
  - Posteriorly by the coccyx.



An imaginary line from one ischiatic tuberosity to the other divides the perineum in two triangles:

- ▶ Urogenital (anterior) .
- ▶ Anal (posteriorly).

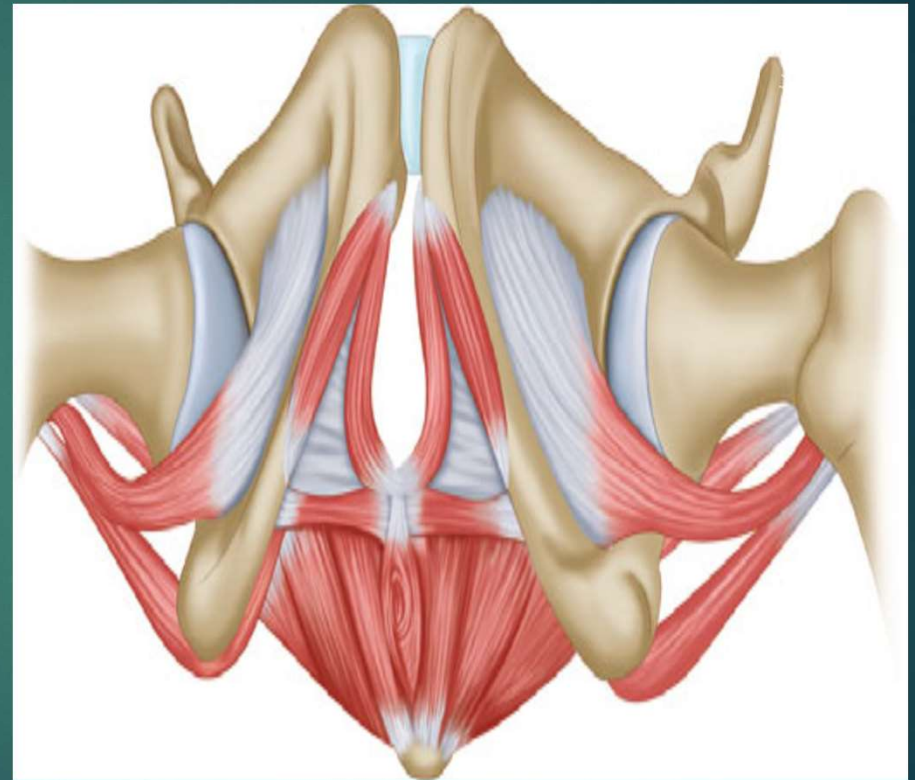


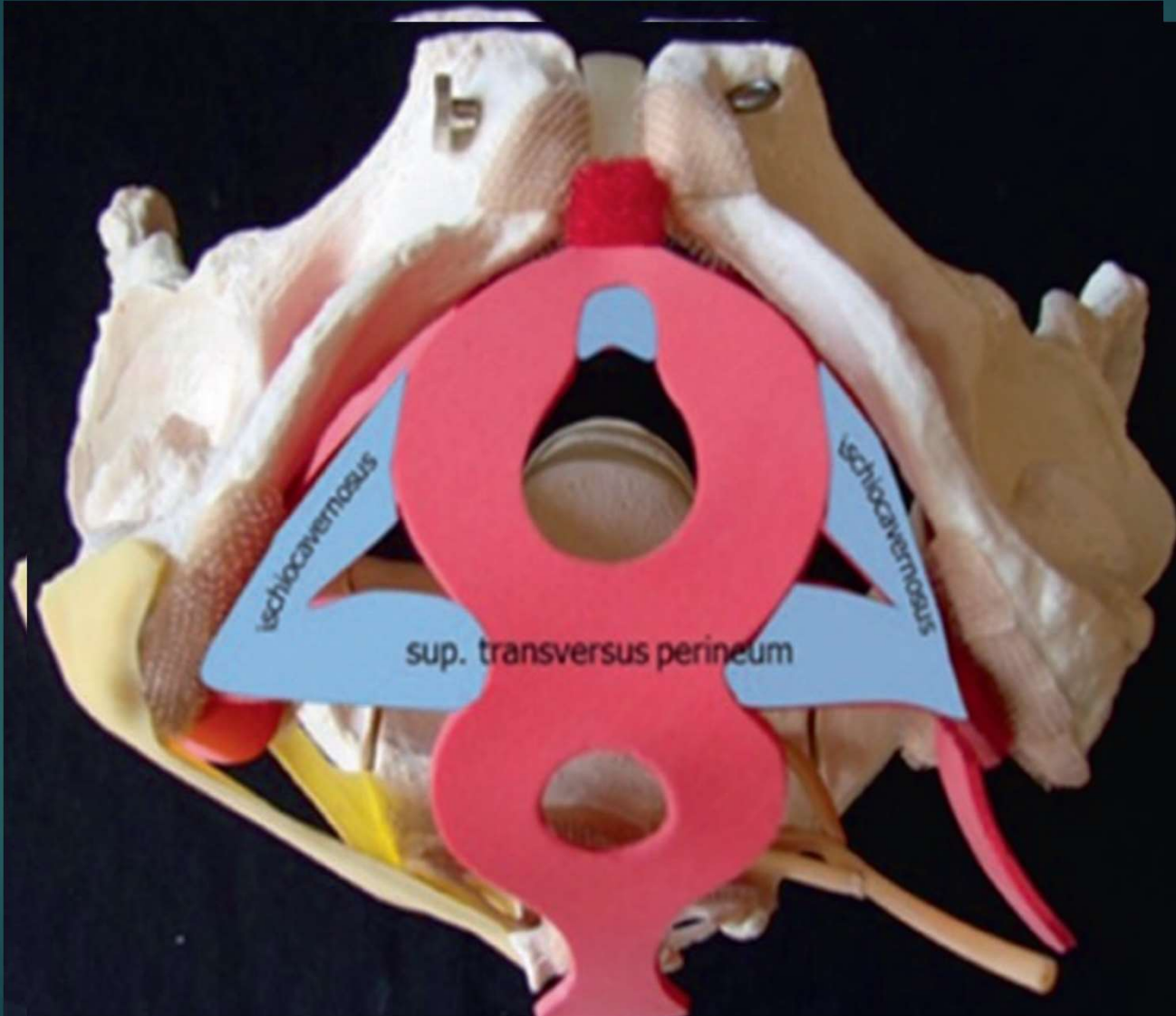
# Muscles of the urogenital triangle

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## *Superficial*

- **Superficial transversus perineum:** Originates at the ischiatic tuberosity and inserts at the perineal body.
- **Bulbospongiosus:** Originates at the perineal body and inserts at the corpus cavernosum of the clitoris.
- **Ischiocavernosus:** Originates at the ischial tuberosity and inserts at the crura of the clitoris.





# Deep

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- Deep transversus perineum: Originates at the ischial tuberosity and inserts at the base of the perineal body.
- Urethrovaginal sphincter: Analogue to the bulbospongiosus muscle, surrounds the urethra and vaginal introitus

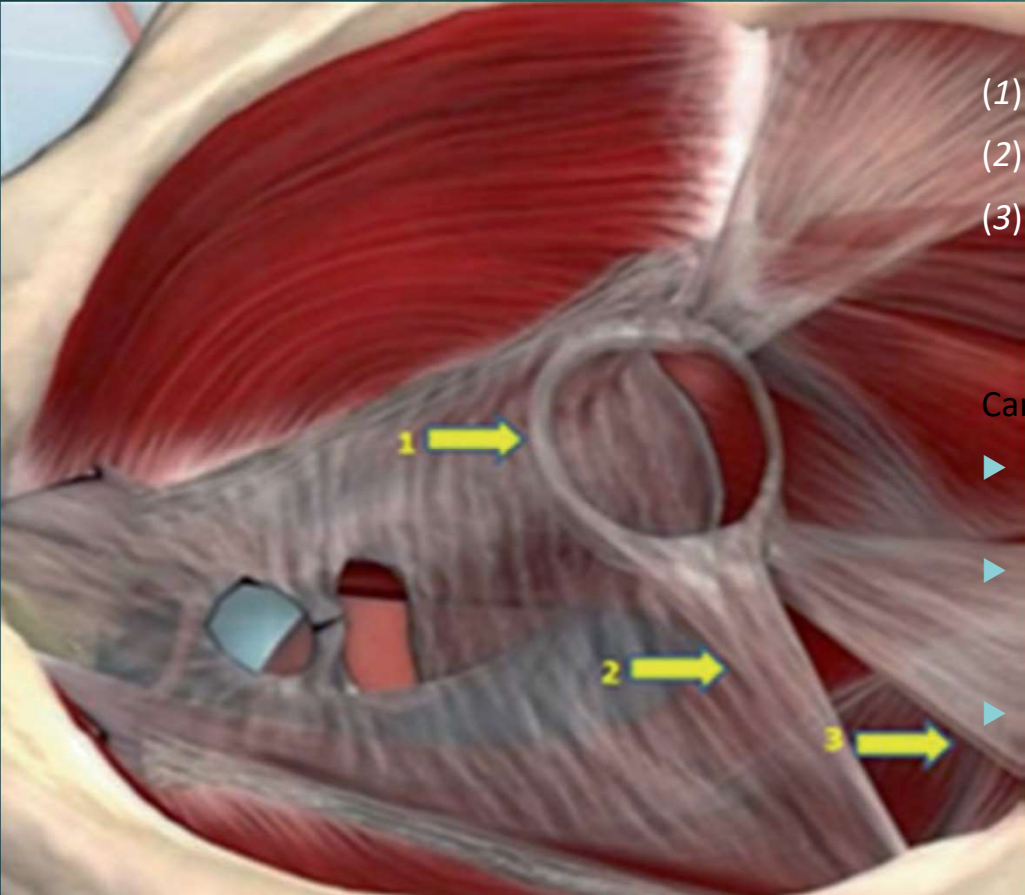


# Endopelvic Fascia

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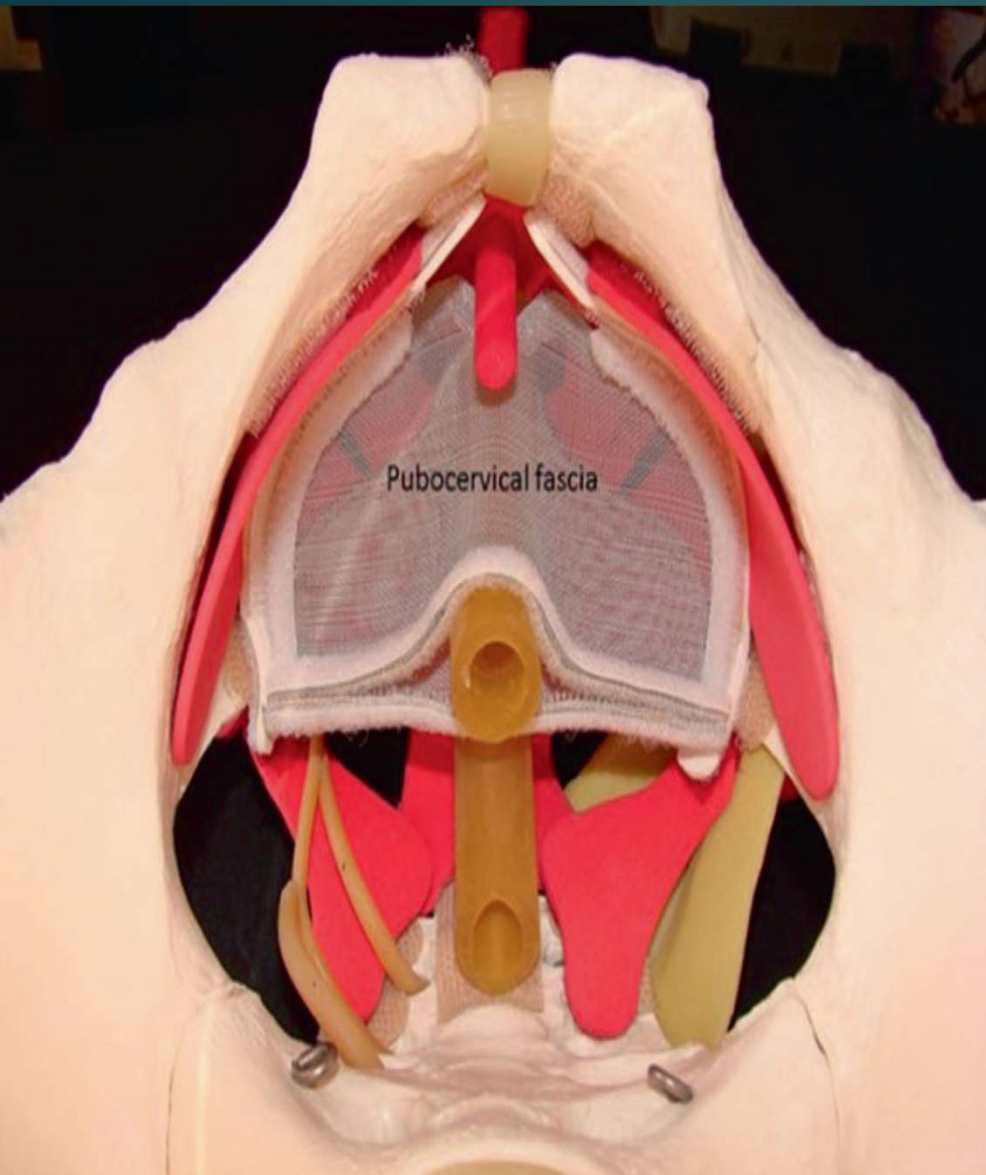
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- ▶ Connects viscera to the pelvic wall
- ▶ Is named according to its localization and function

- 
- (1) Pericervical ring,
  - (2) cardinal ligament,
  - (3) sacrouterine ligament.

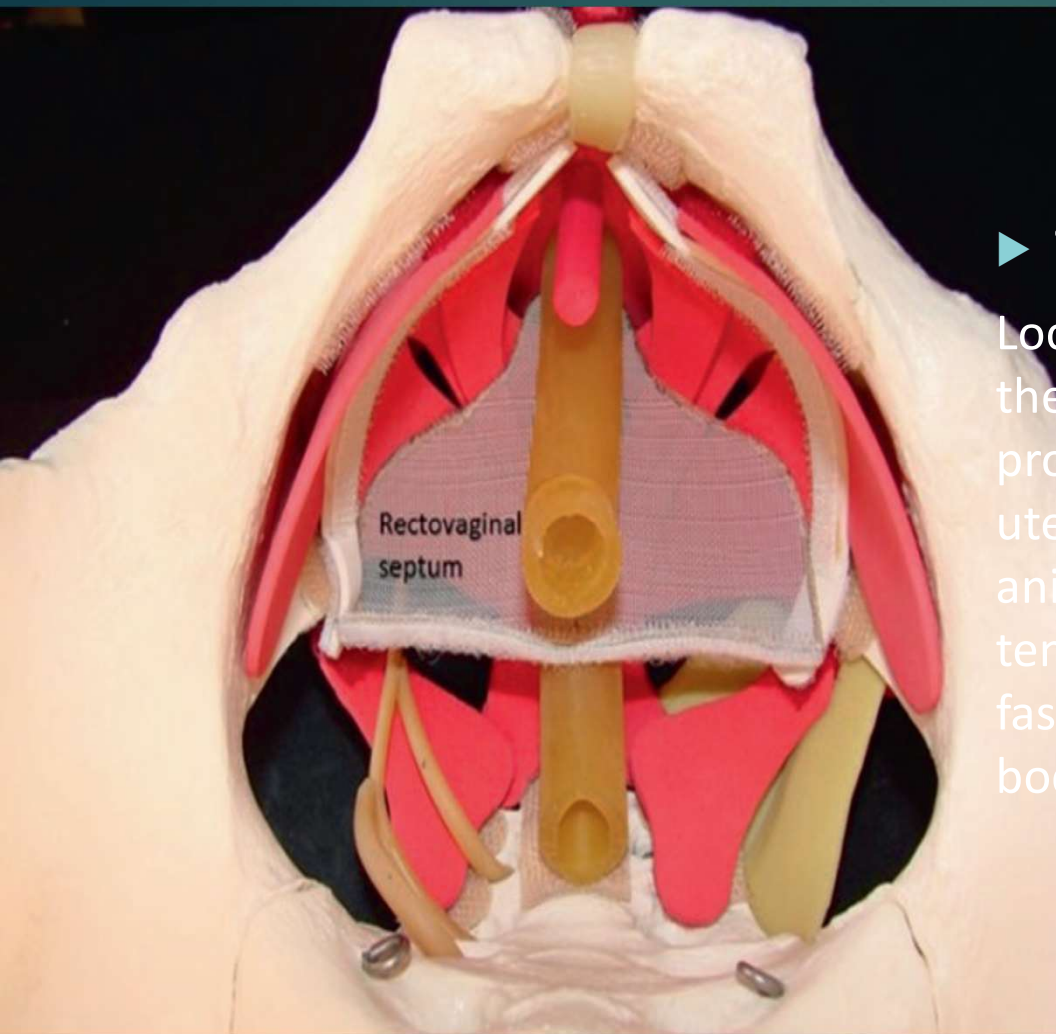
#### Cardinal-Sacrouterine Complex

- ▶ Is made of the cardinal and sacrouterine ligaments and the paracolpos
- ▶ Forms a single structure that originates at the sacroiliac synostosis from S2 to S4 and inserts in the pericervical ring [
- ▶ Provides support to the uterus and the apex of the vagina



▶ The pubocervical fascia

Originates at the pubic bone and inserts laterally in the white line, arcus tendineus fascia pelvis, and proximally at the pericervical ring



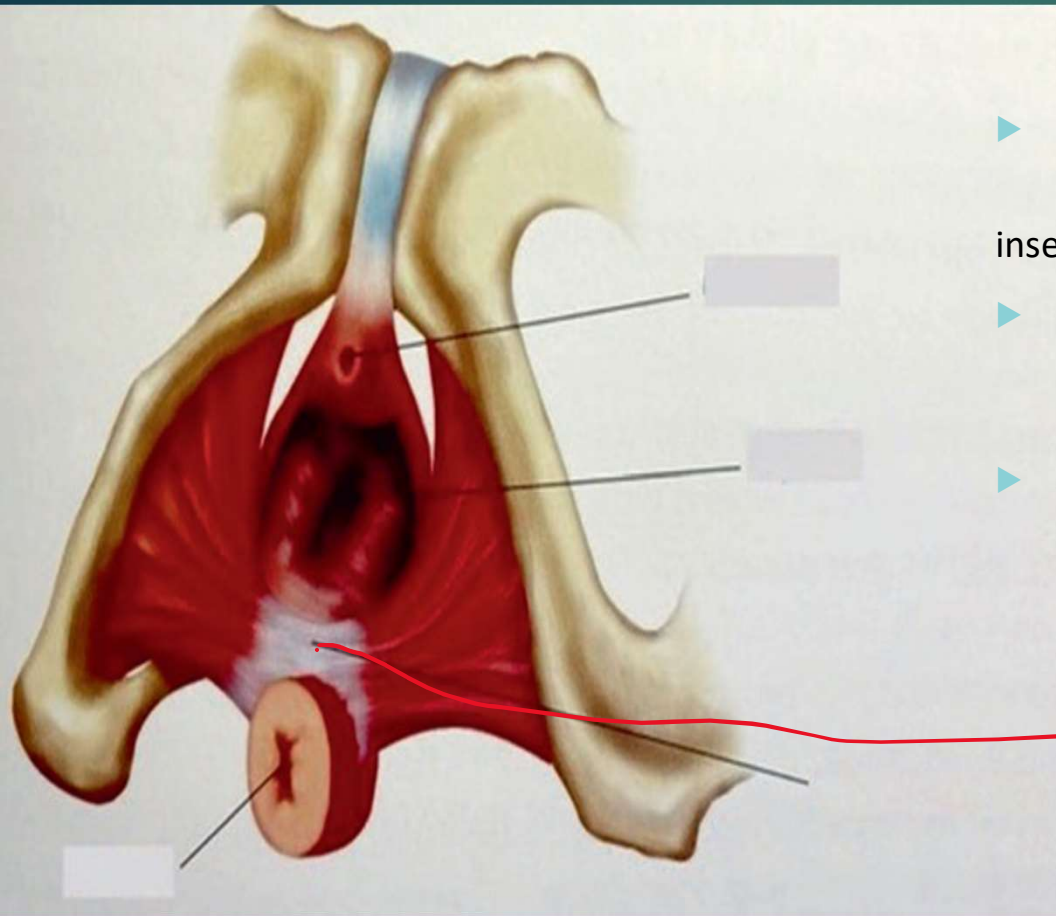
► **The rectovaginal fascia**

Located between the rectum and the vagina and connects proximally to the cardinal uterosacral complex and levator ani plateau, laterally to the arcus tendinous of the rectovaginal fascia, and distally to the perineal body

## Perineal Membrane

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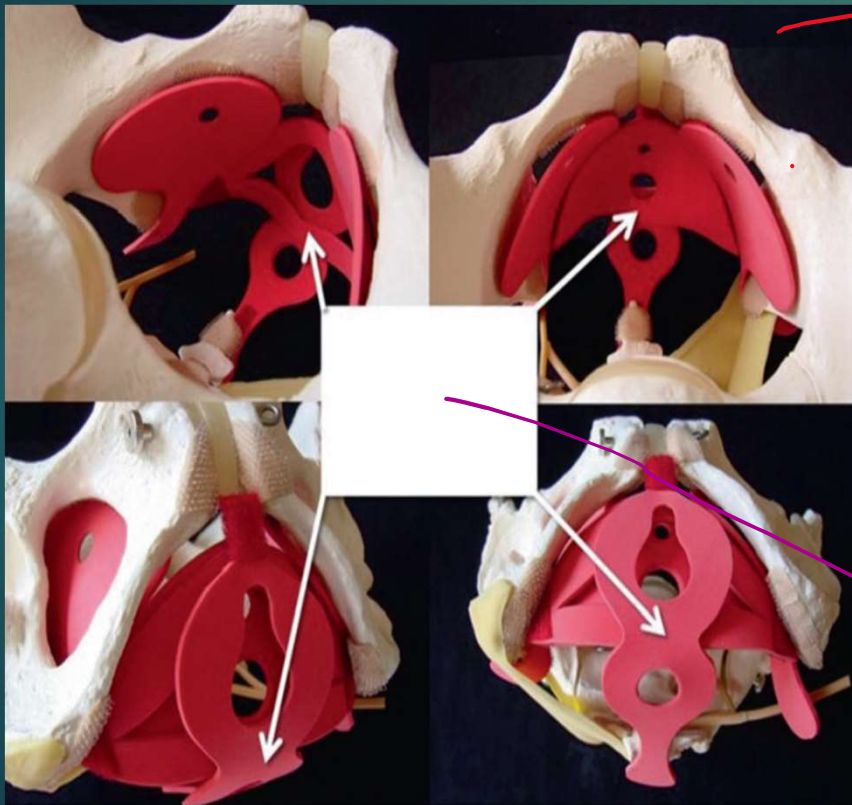


- ▶ Is a triangular-shaped structure) on each side that inserts in the perineal body.
- ▶ The lateral insertion includes ischiopubic ramus bone, ischiocavernosus muscles, and levator ani.
- ▶ Stabilizes the perineal body and plays a role in the dynamics of the distal urethra.

# Perineal Body

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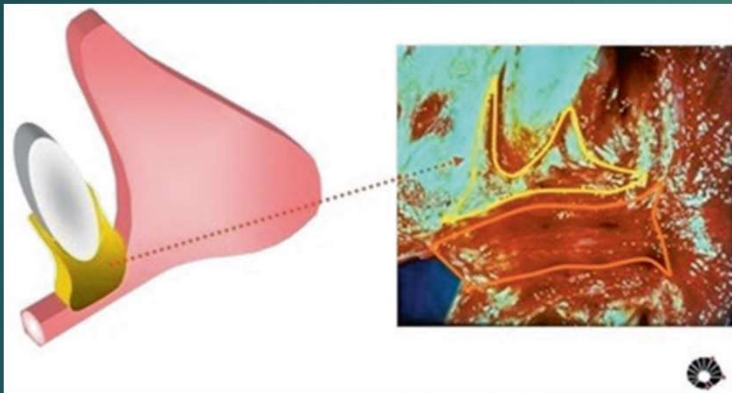


- ▶ Is a conic structure with the base looking at the perineum.
- ▶ At this point insert the external sphincter of the anus, the bulbocavernosus muscle, the transversus superficial and Deep of the perineum and its apex continues along with the rectovaginal fascia.
- ▶ Is connected to the ischiopubic rami and ischiatic tuberosities by the perineal membrane and the transverse muscle of the perineum, to the coccyx by the external anal sphincter and anococcygeal ligament, and to the pelvic diaphragm by the rectovaginal fascia

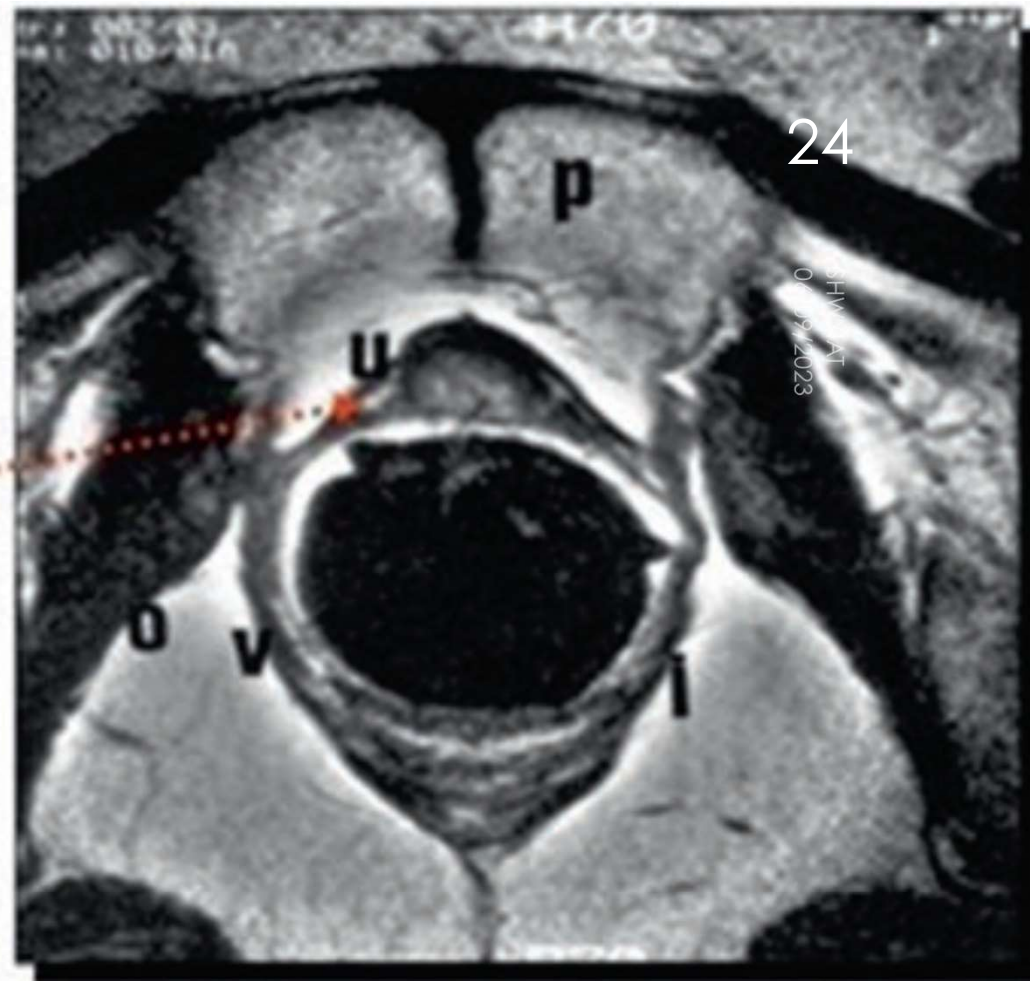
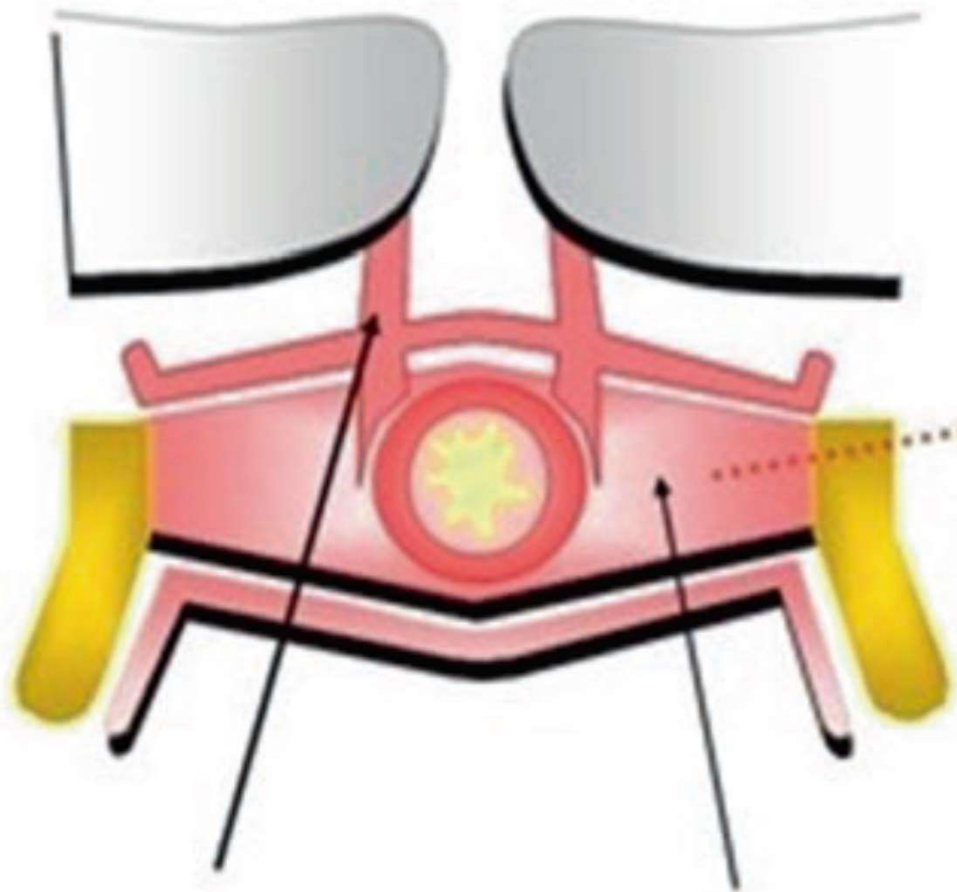
## Urethral Support

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- ▶ Pubourethral ligaments
- ▶ Urethropelvic ligament
- ▶ Vaginal wall itself



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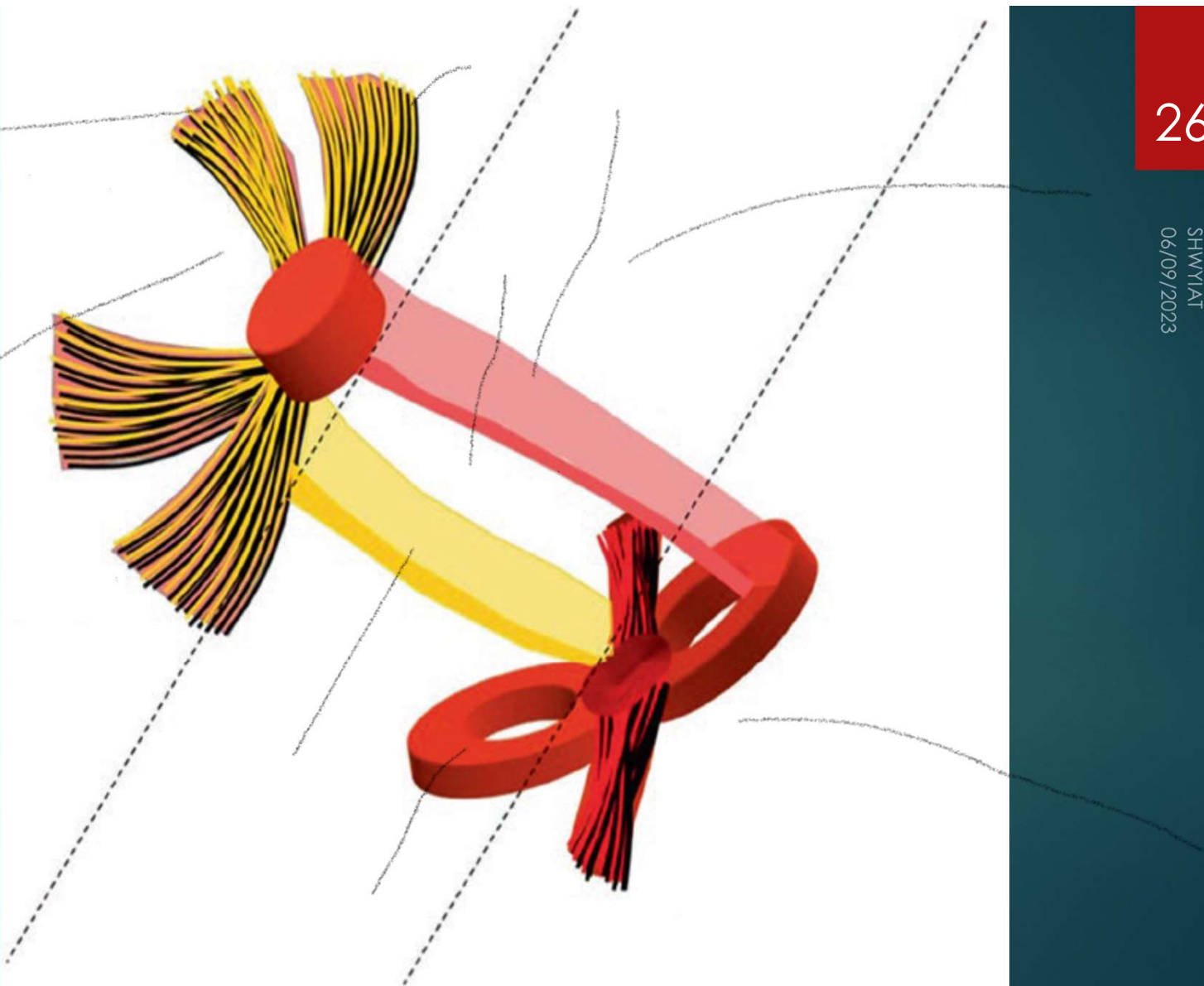


## Level of Vaginal Support

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- ▶ Level I: Support of the uterus and upper third of the vagina by fibers of the complex cardinal-sacrouterine ligaments
  - Level II: Lateral fixation of the vagina, provided by the pubocervical and rectovaginal fascia and its insertions in the arcus tendineus fascia pelvis and arcus tendineus fascia rectovaginalis, respectively
  - Level III: Fusion of the vagina, pubovaginal muscle, and perineal body



- ▶ Is the bottom of the pelvic cavity.
- ▶ It consists of several components: peritoneum, pelvic viscera, endopelvic fascia, levator ani muscles, perineal membrane, and superficial genital muscles.
- ▶ The support for all these structures comes from connections to the bony pelvis and its attached muscles.
- ▶ It should not be considered as a single compartment but as a complex of structures in strong synergism, to ensure multiple functions.
- ▶ The interaction and integrity of muscular, connective, and nerve structures is essential to guarantee normal pelvic organ support.
- ▶ If one of these factors fails, the other might be able to compensate to a certain degree until pelvic organ prolapse occurs

superficial perineal fascia  
(of Colles)

bulbocavernosus muscle

superficial transverse  
perineal muscle

external sphincter  
muscle of anus

great gluteus muscle

anococcygeal  
ligament

pubic  
symphysis

coccyx

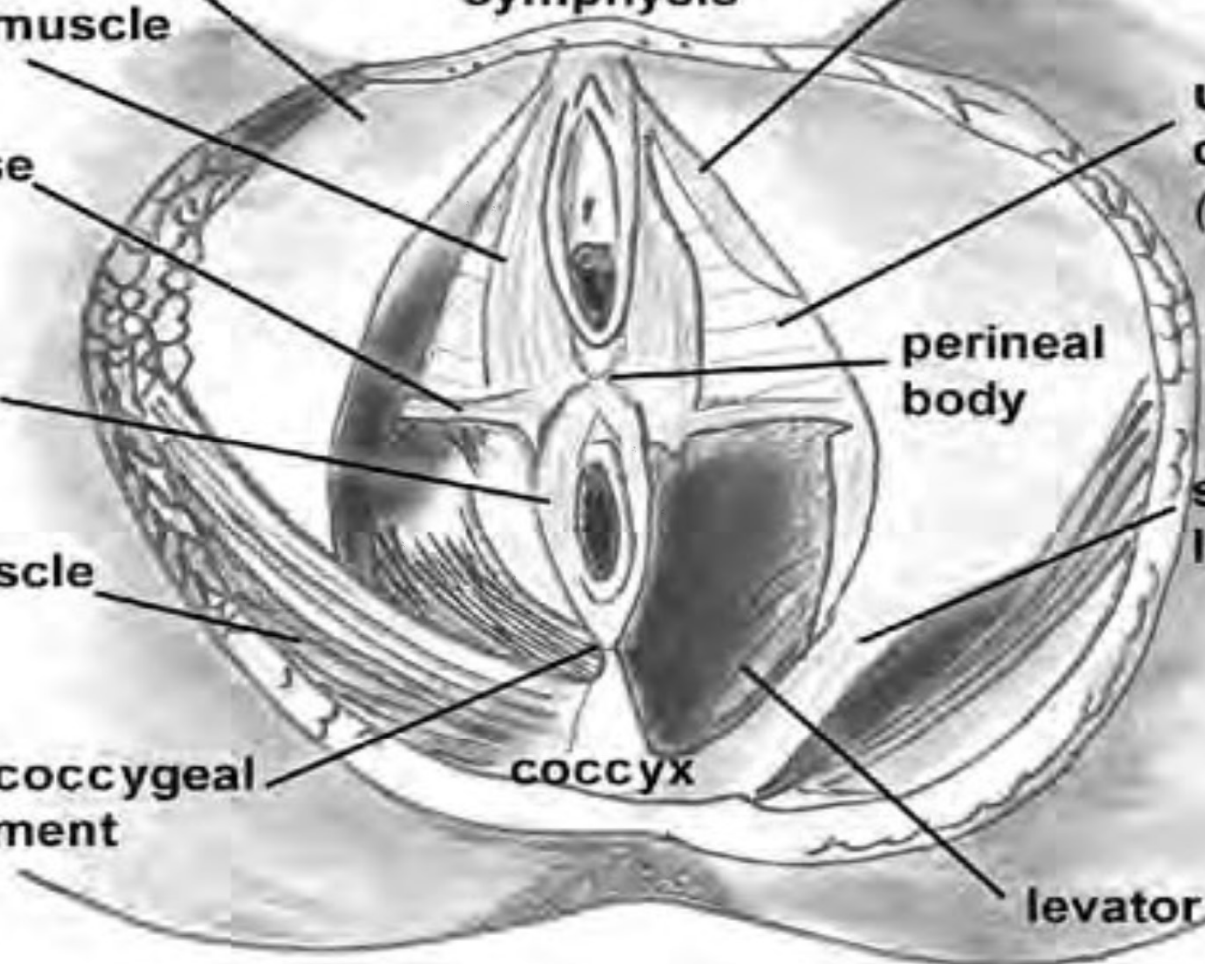
ischiocavernosus muscle

urogenital  
diaphragm  
(*deeper fascia*)

perineal  
body

sacrotuberous  
ligament

levator ani muscle



J. S.

# Prolapse Symptoms

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- ▶ Vaginal bulging.
- ▶ Pelvic pressure.
- ▶ Bleeding.
- ▶ Discharge.
- ▶ Infection.
- ▶ Splinting/digitation.
- ▶ Low back pain.
- ▶ These are generally worse at the times when gravity might make the prolapse worse (e.g. after long periods of standing or exercise) and better when gravity is not a factor, for example, lying supine.

## Prevalence and Incidence of POP

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- ▶ In the USA, (POP) is the cause of more than **300,000** surgical procedures per year (22.7 per 10,000 women) with **13–25%** leading to reoperation.
- ▶ Is an underreported condition and occurs in up **to 50%** of parous women, but only **10–20%** of those seek evaluation for their condition.
- ▶ The overall prevalence of POP varies significantly depending upon the definition used, ranging from **3 to 50%** . When based on symptoms, it is **3–6%**; when based on examination, it is **41–50%**, because mild prolapse on examination is common and frequently asymptomatic
- ▶ Distinguishing symptomatic and asymptomatic POP is clinically relevant for its treatment.

**Table 2.1** Prevalence and incidence of pelvic organ prolapse (POP)

Study	Definition	Prevalence	Incidence	Country
Rortveit [22]	Symptom-based	5.7%		The United States
Nygaard [12]	Symptom-based	2.9%		The United States
Hendrix [14]	WHI study, Examination	Any prolapse: 41.1% Cystocele: 34.3% Rectocele: 18.6% Uterine: 14.2%		The United States
Swift [15]	Examination	6.4% stage 0 43.3% stage 1 47.7% stage 2 2.6% stage 3		The United States
Handa [23]	WHI study, Examination	Cystocele: 24.6% Rectocele: 12.9% Uterine: 3.8%	Cystocele: 0.3/100 Rectocele: 5.7/100 Uterine: 1.5/100	The United States
Nygaard [24]	Examination	2.3% stage 0 33% stage 1 63% stage 2 1.9% stage 3		The United States
Bradley [18]	Examination	23.5–49.9%	26%/1 year 40%/3 year	The United States
Marchionni [25]	Examination	Vault prolapse: 12%		Italy
Aigmueller [26]	Examination	Vault prolapse: 6–8%		Austria

Adapted from Maher et al. [11]

- ▶ Following hysterectomy 6–12% of women will develop vaginal vault prolapse, and in two thirds of these cases, multi-compartment Prolapse is present .
- ▶ The reported incidence for cystocele is around 9 per 100 women-years, 6 per 100 women-years for rectocele, and 1.5 per 100 women-years for uterine prolapse
- ▶ The peak incidence of prolapse symptoms is between ages of 70 and 79, while POP symptoms are still relatively common in younger women



## Childbirth

overt or occult pelvic floor tissue trauma.

- ▶ Secondary to stretching, compression, or avulsion during labour that causes structural compromise and/or denervation to the levator ani musculature (LAM).
- ▶ The occurrence of levator trauma postpartum is reported to be between 15 and 39.5% with ultrasound.
- ▶ The single strongest risk factor for developing prolapse in women under 59 years of age and the risk increased by every delivery.
- ▶ Compared with nulliparous women, women with 1 child were 4 times more likely and women with 2 children were 8.4 times more likely to experience POP that required hospital
- ▶ Among parous women, 75% of prolapse can be attributed to pregnancy and childbirth.

# Pregnancy

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- ▶ Hormonal-induced collagen alterations, that include increased distensibility and decreased stiffness and maximal stress.
- ▶ Overall POPQ stage was significantly higher in the third trimester than in the first.
- ▶ Sze et al. reported that 46% of 94 nulliparous women had pelvic organ prolapse at their 36-week antepartum visit. Of them, 26% had a stage 2 prolapse

## Obstetric Factors

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- ▶ Operative vaginal delivery with the use of forceps.
- ▶ Infant birth weight (>4500 g), vaginal delivery of a macrosomic infant.
- ▶ Prolonged second stage of labour. Age < 25 years at first delivery

# Obesity

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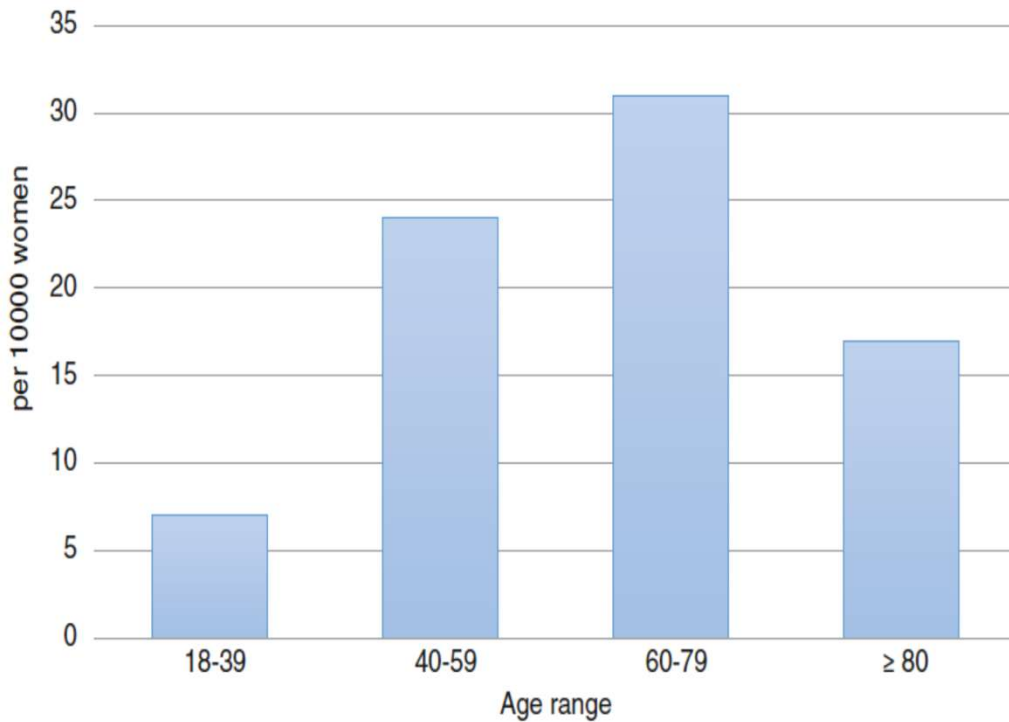
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- ▶ Mass index  $>25$  is associated with a twofold higher risk .
- ▶ Increased waist circumference was associated with more pelvic organ prolapse in some studies, especially for progressive rectocele.
- ▶ Weight gain is a risk factor for developing prolapse, weight loss does not appear to be significantly associated with regression of POP, suggesting that damage to the pelvic floor related to weight gain might be irreversible.
- ▶ Obese women, after surgically induced weight loss, showed an improvement in anterior vaginal support and pelvic floor symptoms.

## Age

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- ▶ Prevalence of this disorder rose by about 40% with every decade of life



**Fig. 2.3** Surgical treatment for POP/rate per 10,000 women (modified from Barber et al. [11])

## Inheritance and Genetic Factors

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- ▶ Familial transmission of pelvic organ prolapse has been shown.
- ▶ The risk of urogenital prolapse was higher in women with mother or sisters reporting the condition.
- ▶ Pelvic organ prolapse segregated in a dominant fashion with incomplete penetrance
- ▶ Relative risk of POP among siblings of young women affected of POP was five times higher than the general population

# Race

- ▶ Hispanic and European women appear to be at higher risk for POP than those of African.
- ▶ African-American women have a lower prevalence of symptomatic POP than other racial or ethnic groups in the United States.
- ▶ The risk in Latina and white women for POP was four- to fivefold higher than in African-American women
- Chinese women have stronger and thicker pubourethral ligaments, endopelvic fascia, and endopelvic attachment to the obturator fascia compared to Caucasian women,
- African-American women have smaller pelvic outlets than those of European descent

## Connective Tissue Disorders

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- ▶ Marfan or Ehlers-Danlos syndrome have high rates of POP. Intrinsic
- ▶ Joint hypermobility is another well-recognised connective tissue disease that is associated with pelvic descent



# Pelvic Organ Prolapse Etiology

## Collagen Abnormalities.

- ▶ C.T. disorder associated prolapse
- ▶ women genital prolapse ↑ joint hyper mobility
- ▶ women genital prolapse > proportion type 111 (weaker but flexible) collagen than type 1
- ▶ ↓ total collagen, ↑ collagenase, elastolytic

## Previous Surgery

- ▶ The cumulative risk rises from 1% 3 years after a hysterectomy to 5% 15 years after hysterectomy.
- ▶ The risk of prolapse following hysterectomy is 5.5 times higher (95% CI 3.1–9.7) in women whose initial hysterectomy was for genital prolapse as opposed to other reasons.

## Clinical Evaluation and Diagnostic Tools in Women with Prolapse

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- ▶ Family history
- ▶ Past medical history
- ▶ Present medical history
- ▶ Physical examination and POP quantification
- ▶ Imaging and instrumental examination

## Past Medical History

▶ Pregnancy and Childbirth.

▶ Menopause and Age:

Age itself is characterized by an alteration of the normal type I–type III collagen ratio

Physiological weakening of connectives and may be related to the loss of strength and resiliency of support and suspension structures.

▶ Previous Pelvic Surgery performed for correction of prolapse.

▶ Coexisting diseases associated with a chronic increase in abdominal pressure, such as obesity, chronic respiratory diseases, and constipation.

▶ Chronic smoking :the damage mechanism would not be associated with increased intra-abdominal pressure due to coughing but with the action of chemical substances on tissues.

▶ Neurological disease: diabetes mellitus, Parkinson’s disease, or multiple sclerosis or acute conditions, such as a cerebrovascular accident, can cause a peripheral neuropathy that could affect pelvic organ support

## Present Medical History

- ▶ The “sense of weight” is a non-specific symptom: It doesn't correlate with the degree of prolapse neither with a specific compartment.
- ▶ The “sense of bulge,” of foreign body, is typical of patients with prolapse. It correlates to a more advanced staging.
- ▶ Splinting/digitation: the need to manually reduce the prolapse or apply pressure to the perineum, to the vagina or to the rectum, to facilitate micturition and/or defecation.
- ▶ Low back pain
- ▶ **Urinary symptoms: Stress and Urge**
- ▶ Voiding dysfunctions.
- ▶ **Bowel symptoms:** Constipation is the most common defecatory symptom related to prolapse, in case of advanced prolapse, the patient may be forced to assume particular positions, to manually reduce the prolapse or to use the fingers in order to allow the evacuation

- ▶ **Sexual symptoms:** Vaginal bulge, dyspareunia, body image dissatisfaction that can induce women to avoid sexual intercourse causing
- ▶ Coital incontinence:
  - ❑ Leakage of urine during sexual intercourse, either on penetration or during orgasm.
  - ❑ In women with anterior vaginal wall prolapse, urinary incontinence on penetration can frequently occur because of altered urethra bladder-neck anatomic ratio

# Diagnostic Tools

- ▶ Questionnaires and structured interviews
- ▶ Bladder diary

# Physical Examination and POP Quantification

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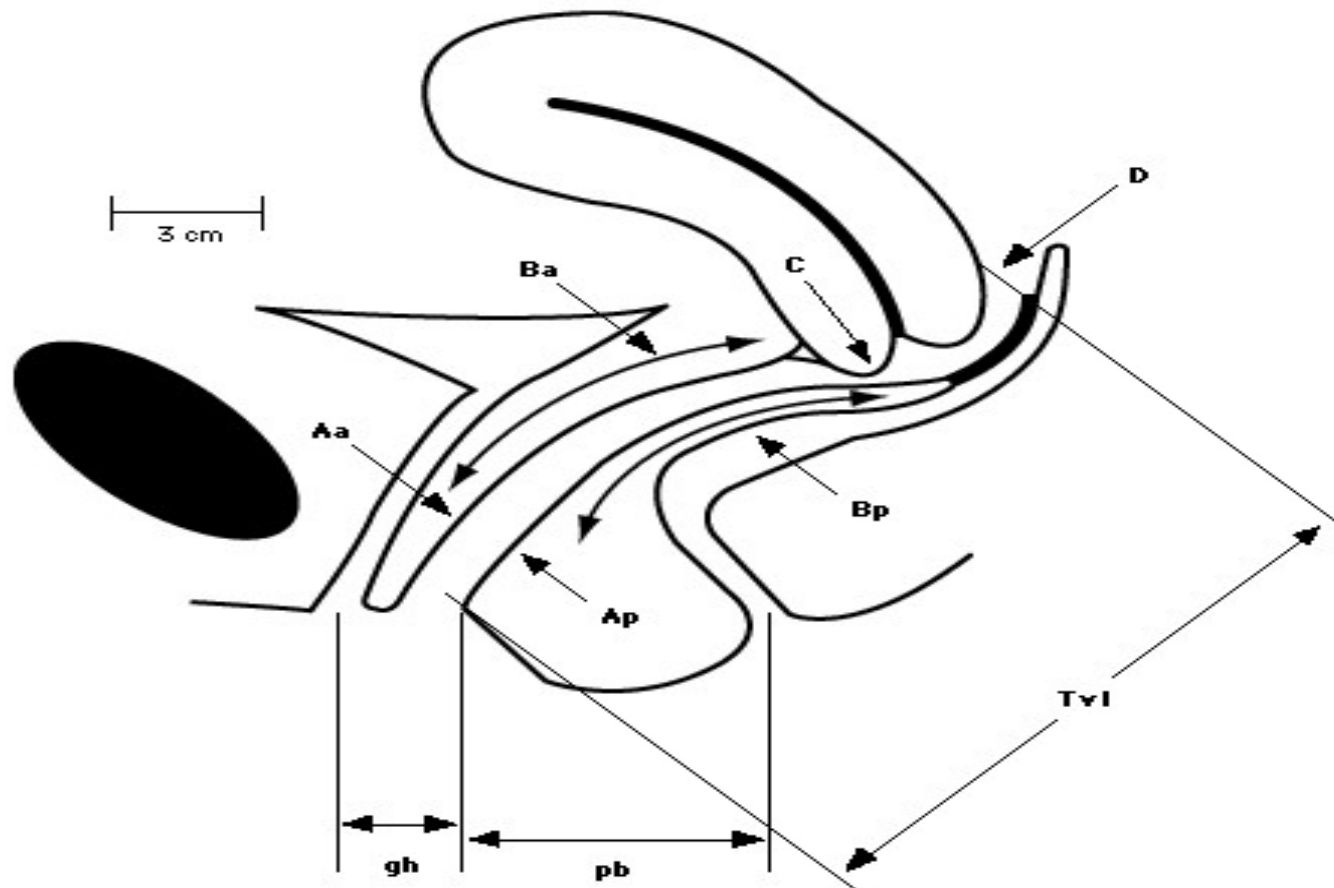
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- ▶ Inspection of vulvar skin and the assessment of vulvovaginal mucosa.
- ▶ A bimanual examination
- ▶ Lithotomy position: Women may be then reexamined in standing position.
- ▶ To differentiate between lateral and central defects
- ▶ Stage of prolapse



# New Classification POP-Q System

- ▶ ICS 1996 Bump et al.
  - Standardization of terminology
  - Pelvic Organ Anatomy
  - Site – Specific
  - Quantitative
  - Compartments or Segments.



**Pelvic organ support quantitation** Six sites (points Aa, Ba, C, D, Bp, Ap), genital hiatus (gh), perineal body (pb), and total vaginal length (tvl) used for pelvic organ support quantitation. (Reproduced with permission from Bump, RC, Mattiasson, A, Bø, K, et al, Am J Obstet Gynecol 1996; 175:10. Copyright © 1996 Mosby, Inc.)

### Pelvic Organ Prolapse Staging†

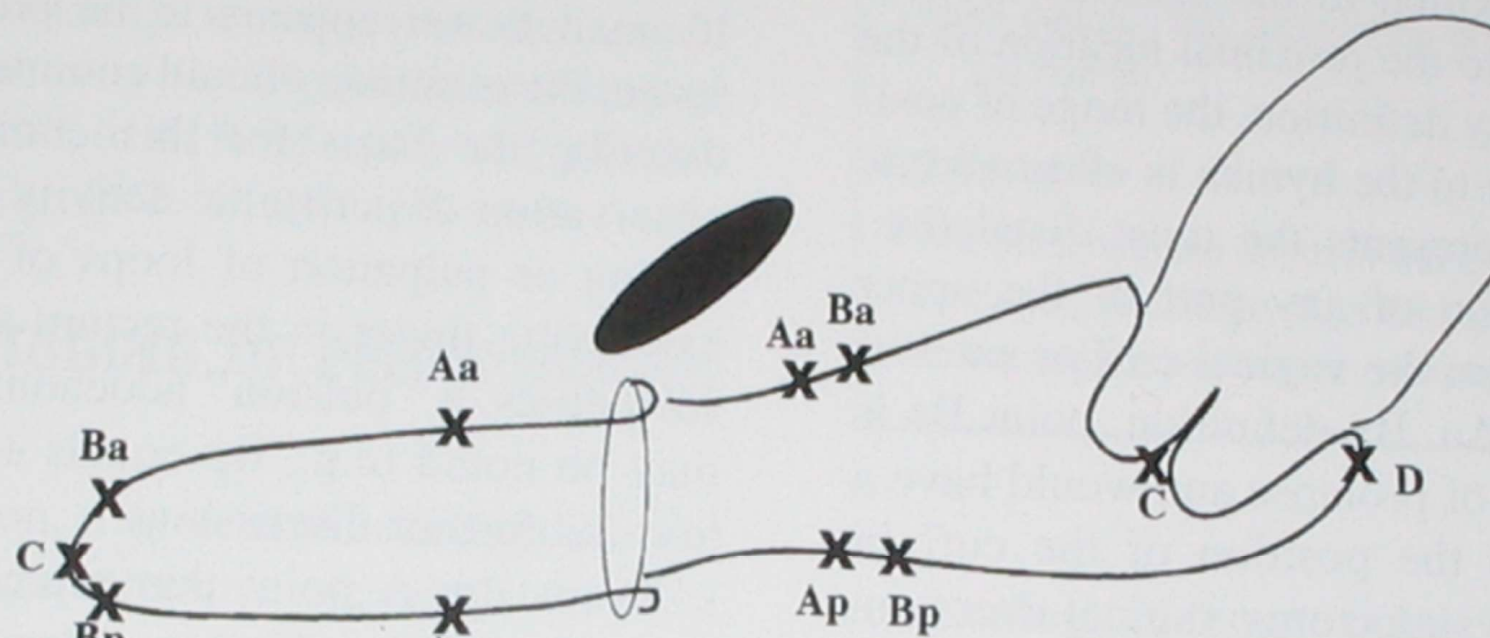
<b>Stage 0</b>	No prolapse Aa, Ba, Ap, Bp are $-3$ cm and C or D $\leq -(tvL - 2)$ cm
<b>Stage 1</b>	Most distal portion of the prolapse $-1$ cm (above the level of hymen)
<b>Stage 2</b>	Most distal portion of the prolapse $\geq -1$ cm but $\leq +1$ cm ( $\leq 1$ cm above or below the hymen)
<b>Stage 3</b>	Most distal portion of the prolapse $> +1$ cm but $< +(tvL - 2)$ cm (beyond the hymen; protrudes no farther than 2 cm less than the total vaginal length)
<b>Stage 4</b>	Complete eversion; most distal portion of the prolapse $\geq + (tvL - 2)$ cm

Aa = Point A of anterior wall; Ba = point B of anterior wall; Ap = point A of posterior wall; Bp = point B of posterior wall; -, above the hymen; +, beyond the hymen; tvL = total vaginal length.

† Reproduced with permission from Harvey, M-A, Versi, E. Urogynecology and pelvic floor dysfunction. In: Kistner's Gynecology and Women's Health, 7th ed, Ryan, KJ, Berkowitz, RS, Barbieri, RL, Dunaif, A (Eds), St. Louis, Mosby 1999. Copyright © 1999 Elsevier.

<b>Aa</b>	<b>Ba</b>	<b>C</b>
<b>gh</b>	<b>Pb</b>	<b>tvL</b>
<b>Ap</b>	<b>Bp</b>	<b>D</b>

**Three-by-three grid used to express the quantified pelvic organ prolapse (POP-Q) system** Aa = point A of the anterior wall; Ba = point B of the anterior wall; C = cervix or cuff; D = posterior fornix; gh = genital hiatus; pb = perineal body; tvL = total vaginal length; Ap = point A of the posterior wall; Bp = point B of the posterior wall. Reproduced with permission from Harvey, M-A, Versi, E. Urogynecology and pelvic floor dysfunction. In: Kistner's Gynecology and Women's Health, 7th ed, Ryan, KJ, Berkowitz, RS, Barbieri, RL, Dunaif, A (Eds), St. Louis, Mosby 1999. Copyright © 1999 Elsevier.



<b>+3</b> Aa	<b>+8</b> Ba	<b>+8</b> C
<b>4.5</b> gh	<b>1.5</b> pb	<b>8</b> tvl
<b>+3</b> Ap	<b>+8</b> Bp	--

<b>-3</b> Aa	<b>-3</b> Ba	<b>-8</b> C
<b>2</b> gh	<b>3</b> pb	<b>10</b> tvl
<b>-3</b> Ap	<b>-3</b> Bp	<b>-10</b> D



## ▶ Perineal/Translabial Ultrasound

### ▶ *Post-voiding residual (PVR) urine:*

- Haylen (volume in mL = height × depth × 5.9 – 14.6)
- Dietz (volume in mL = height × depth × 5.6)
- Dicuio (volume in mL = height × depth × transverse × 0.5)

### ▶ *Bladder wall thickness (BWT):*

- Anterior prolapse is the cause of chronic obstruction that can lead to the development of overactive bladder, with no more 50 cc urine in
- Taking measures from three sites that are anterior wall, trigone, and dome and calculate an average value

## Magnetic Resonance Imaging

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- ▶ Could be useful for more complex cases of genital prolapse, when the physical findings are equivocal or do not explain the patient's symptoms.
- ▶ Straining or while defecating, without contrast material, with vaginal and rectal markers, and with rectal, vaginal, urethral, and bladder contrast material.



## Urodynamic studies

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- ▶ Rarely leads to a change in the management plan or the type of surgical procedure
- ▶ surgical correction of prolapse can improve not only the symptom of vaginal bulging but also the symptoms of OAB and could cure the concomitant SUI.
- ▶ Could also help patients accurately assess the risks and benefits of surgery and facilitate optimal preoperative counselling directed towards appropriate patient expectations as well as guide proactive management of postoperative symptom

# Treatment Options

# Pelvic Floor Muscle Training and Prolapse: Prevention or Treatment?

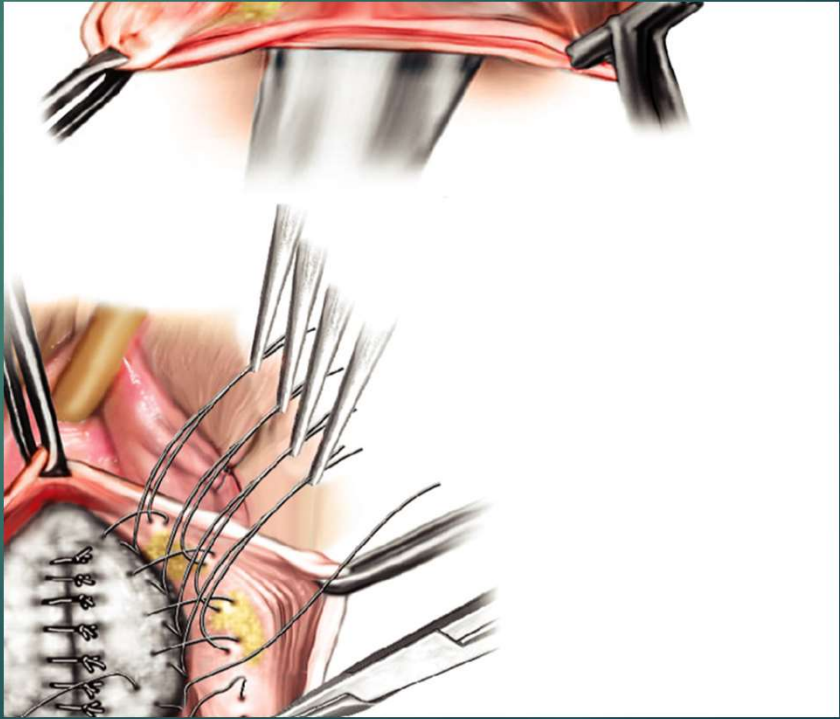
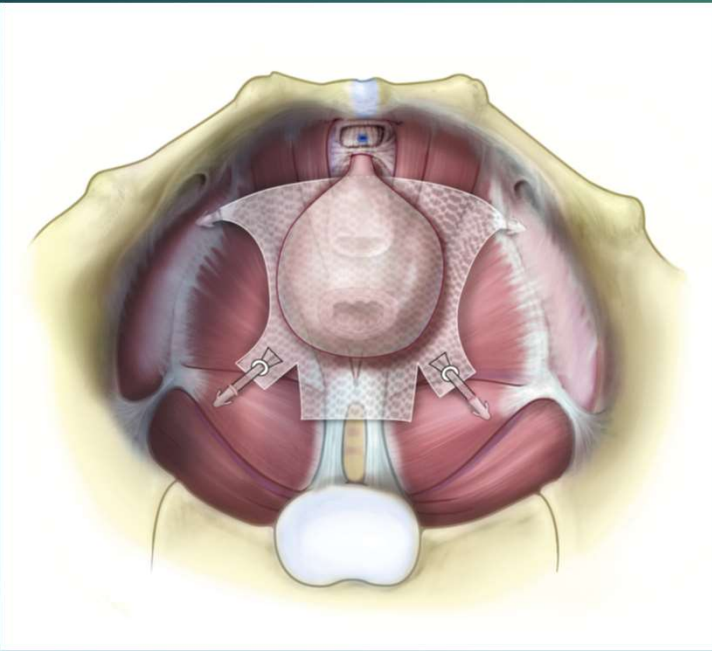
- ▶ Increases pelvic floor muscle strength and function, so it may help to prevent prolapse worsening .
- ▶ Improve specific prolapse symptoms, as feeling of vaginal bulging or heaviness, and other associated symptoms, as urinary and anal incontinence.
- ▶ May be considered a first-line therapy, especially when the prolapse is mild.
- ▶ Augment the effect of surgery in women with pelvic organ prolapse
- ▶ *Recently updated literature search of randomised controlled trials confirmed that PFMT might improve symptoms and reduce the severity of prolapse*

# Pessary Usage

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- ▶ Without a comprehensive and evidence-based assessment of its effectiveness in relation to other therapies, both surgical and conservative.
- ▶ *A recent Cochrane review concluded there is no good-quality evidence available in literature to be able to structure practical guidelines on the correct use (indications, shape choice, type of follow-up, role of local estrogen therapy) of pessaries.*



## Uterine Prolapse: Options



Bottom Up



Top Down

### ***Vaginal (+/- Hysterectomy)***

- Uterosacral Ligament Suspension
- Sacrospinous Fixation
- Manchester Repair
- Mesh procedure
- Colpocleisis

### ***Abdominal Sacrocolpopexy (+/-Hysterectomy)***

- Total Hysterectomy
- Supracervical Hysterectomy
- Sacrohysteropexy

(Uterosacral ligament plication)

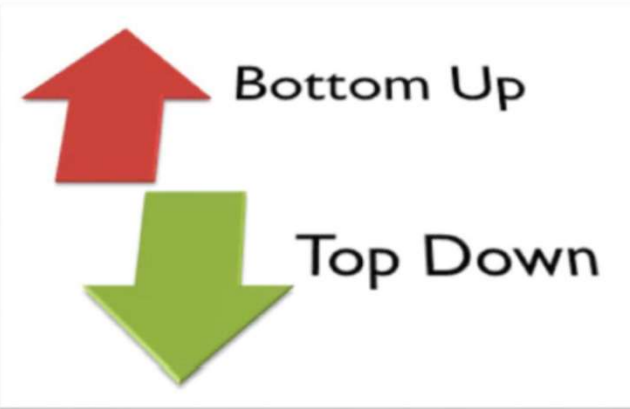
# A number of questions?

- Vaginally or Abdominally?
- Hysterectomy or not ?
- Mesh or no mesh?









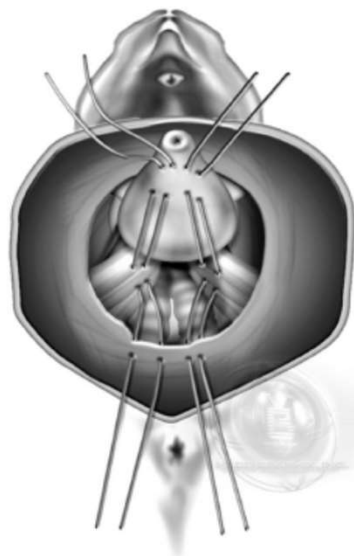
Does one size fit all in the selection of a surgical procedure for uterine prolapse?



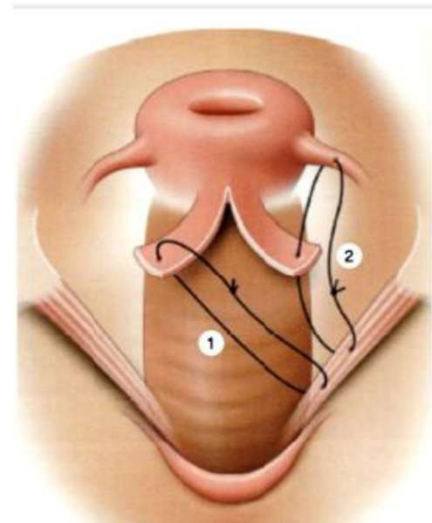
**If you are doing something  
vaginally**

**You have to do something  
to support the vault**

## Support options



Uterosacral ligament suspension



Sacrospinous ligament fixation

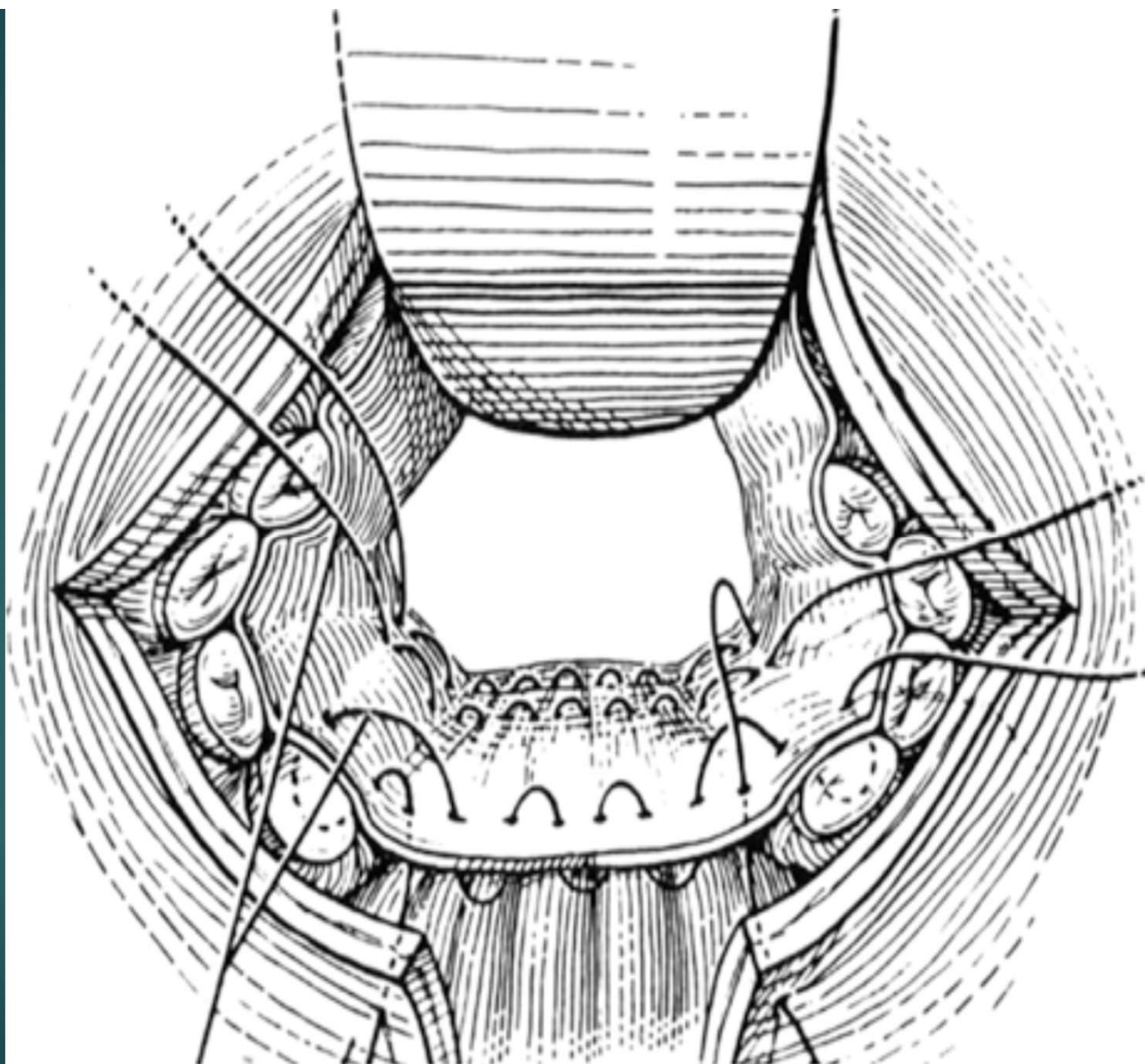
# Apical Compartment Repair

- ▶ Support of the apex must be assessed regardless of the presence or absence of the uterus
- ▶ The best surgical correction of the anterior and posterior walls may fail unless the apex is adequately supported

## McCall Culdoplasty

- ▶ McCall described the technique of closing the deep cul-de-sac at the time of vaginal hysterectomy to prevent enterocele formation
- ▶ The modified McCall culdoplasty is performed by placing one or two delayed absorbable suture through one of the uterosacral ligaments, incorporating the cul-de-sac peritoneum and vaginal cuff, and placing the final suture through the opposite uterosacral ligament
- ▶ It is uncertain if nonabsorbable sutures provide higher rates of cure; they do however result in more suture erosions.
- ▶ As part of every vaginal hysterectomy, even in the absence of prolapse, to minimize future formation of apical prolapse.
- ▶ Risks of McCall's culdoplasty include ureteral obstruction or injury.
- ▶ Cystoscopy should be recommended intraoperatively with intravenous injection of indigo carmine or methylene blue to confirm ureteral patency



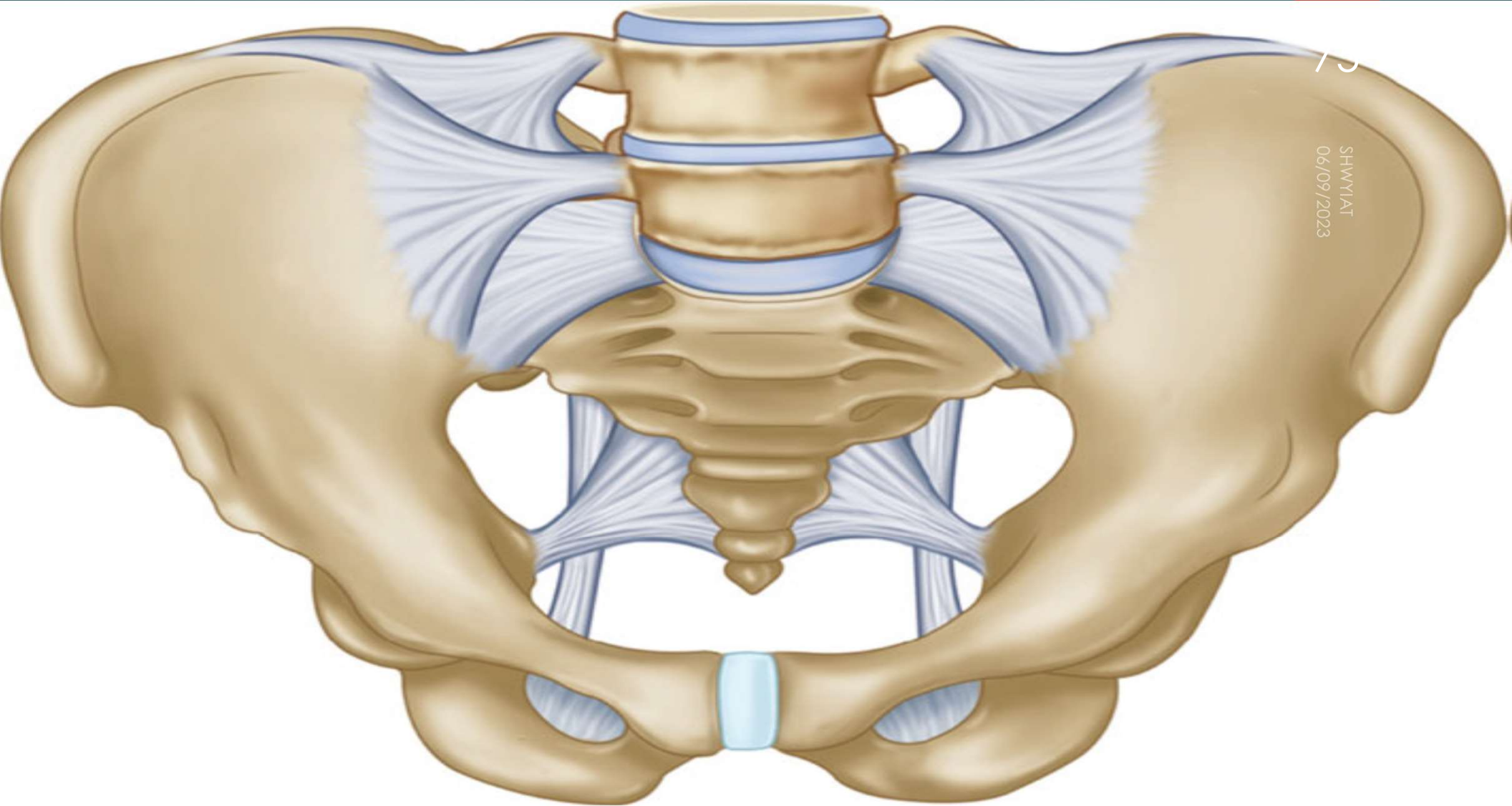


## Sacrospinous Ligament Fixation

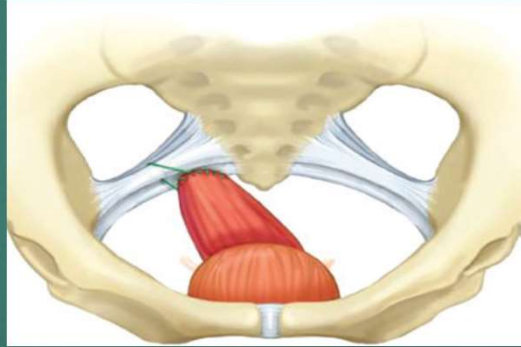
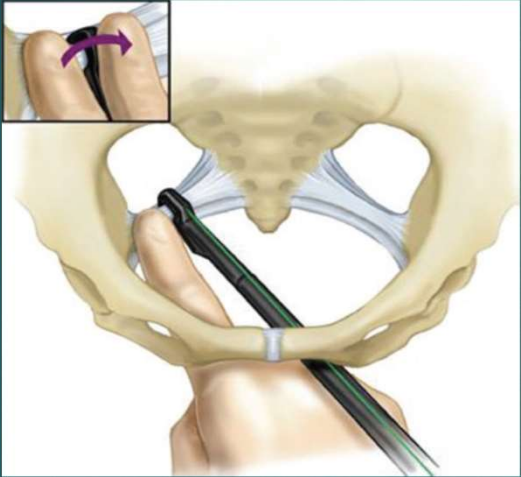
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- ▶ Is one of the most frequently reported procedures for apical repair, in particular for vault prolapse.
- ▶ It is performed mainly unilaterally and no evidence exists on better outcomes if the procedure is done bilaterally
- ▶ Can be performed also at the end of vaginal hysterectomy in cases of severe uterine prolapse (stage  $\geq$  III) or preserving the uterus by fixating the cervix to the ligament.
- ▶ Access to the sacrospinous ligament can be through a posterior vaginal dissection, through the apex, or by an anterior approach
- ▶ The posterior approach is the most popular
- ▶ Sacrospinous ligament identified after palpation of the ischial spine, as it courses from the ischial spine to the sacrum.
- ▶ Optimal suture placement is 1.5–2.0 cm medial to the ischial spine to avoid damages to the pudendal neurovascular bundle.



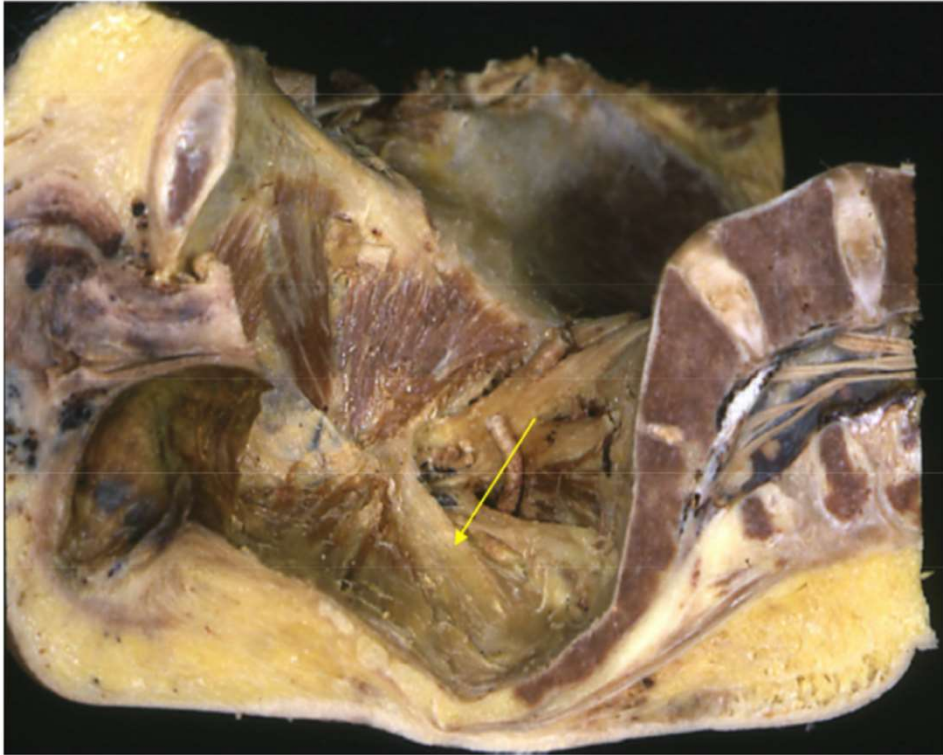
- ▶ Excellent success rates for correcting apical prolapse, although high rates of anterior vaginal prolapse.
- ▶ Posterior deflection of the vaginal axis with sacrospinous ligament fixation has been usually considered the reason for anterior recurrences;
- ▶ Recurrent anterior wall prolapse beyond the hymen in 13.7%.
- ▶ Anterior vaginal wall descent has been reported most often as an asymptomatic recurrence, which requires treatment only in 3–5% of patients undergoing SSLF
- ▶ Postoperative buttock pain on the side on which the sacrospinous suspension probably related to compression of the levator ani nerve that runs through the coccygeus-sacrospinous ligament and can be more bothersome when sacrospinous hysteropexy is performed.
- ▶ Pain resolves usually within the course of the first month with the use of anti-inflammatory agents.



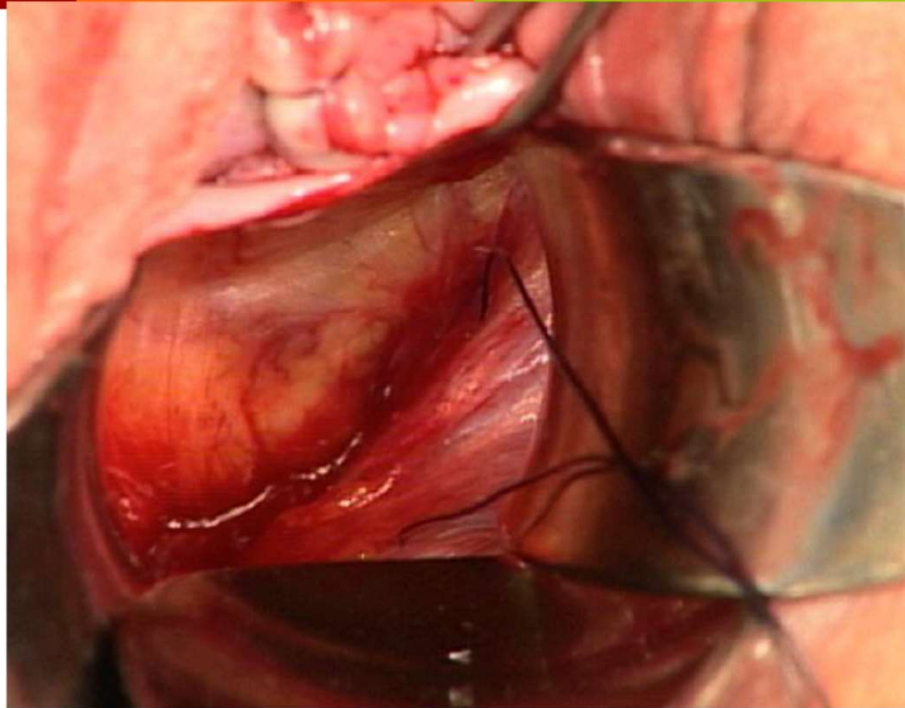


## Sacrospinous Fixation

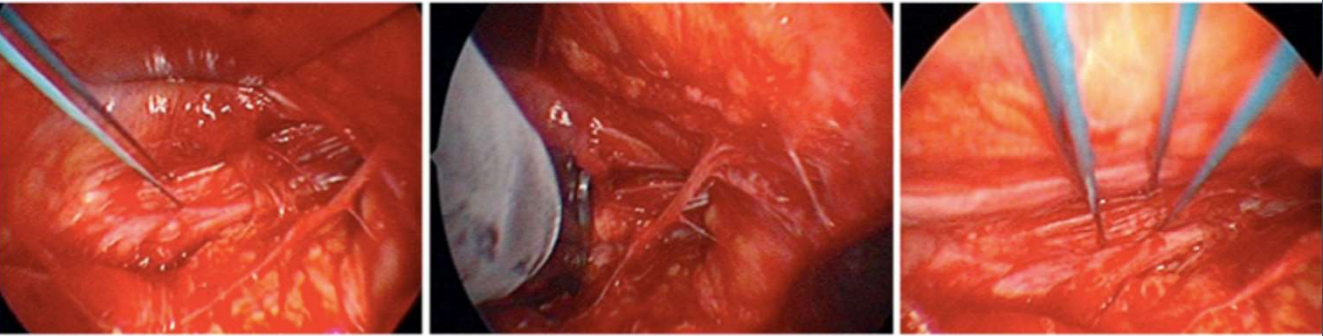


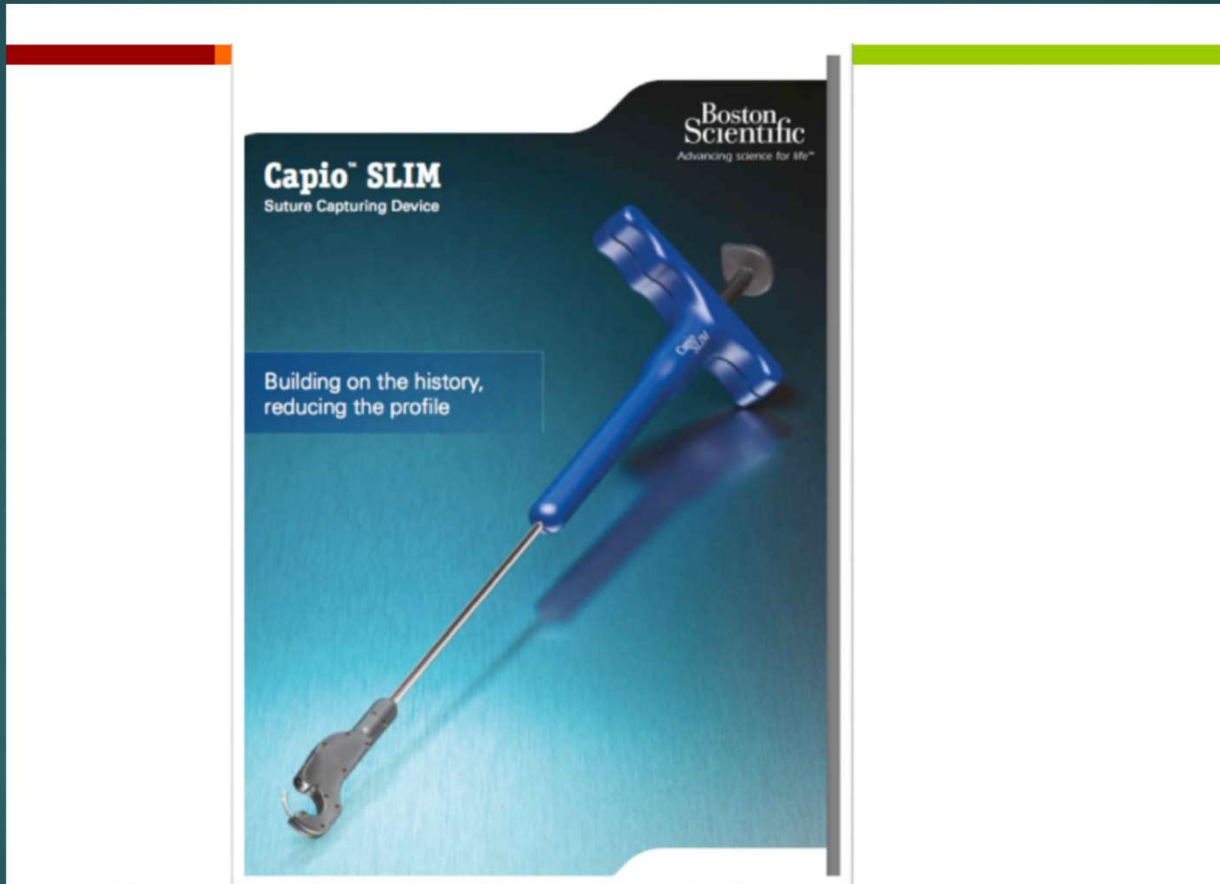


## Sacrospinous fixation

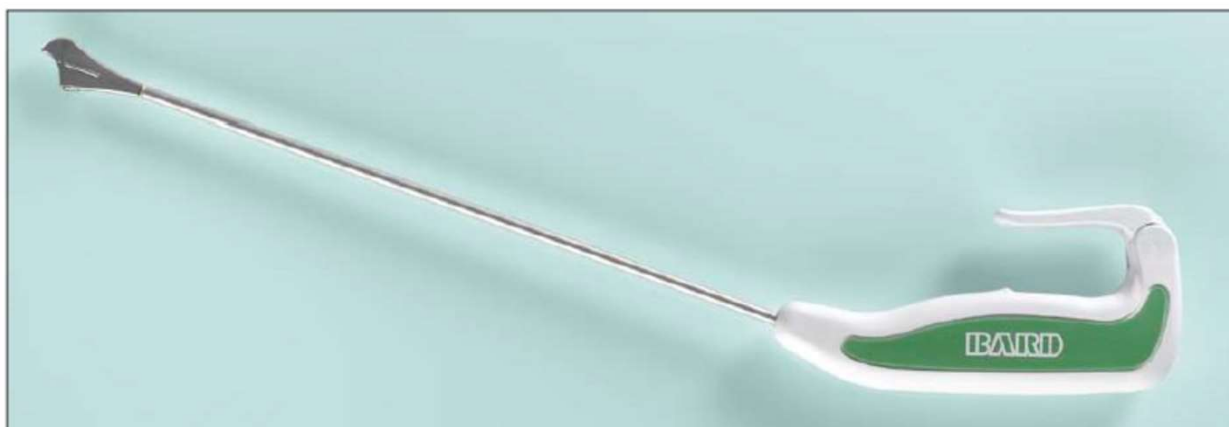








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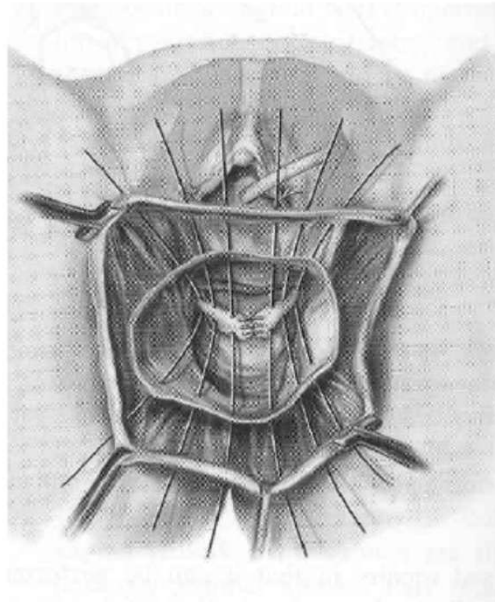


## Sacrospinous Fixation

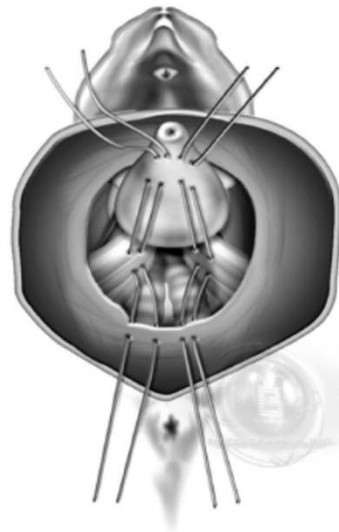
### Complications of SSF:

- Haemorrhage
- Buttock pain
- Nerve injury
- Rectal injury
- Stress incontinence
- Vaginal stenosis
- Anterior vaginal wall prolapse

## Uterosacral Ligament Suspension: With vaginal hysterectomy



## Uterosacral Ligament Suspension: With retention of the uterus



REVIEWS

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UROLOGY

## Outcomes of transvaginal uterosacral ligament suspension: systematic review and metaanalysis

Rebecca U. Margulies, MD; Mary A.M. Rogers, PhD, MS; Daniel M. Morgan, MD

➤ Ureteric Injury	1.8%
	(0.6% re-implantation)
➤ Blood transfusion	1.3%
➤ Re-operation	9.4%

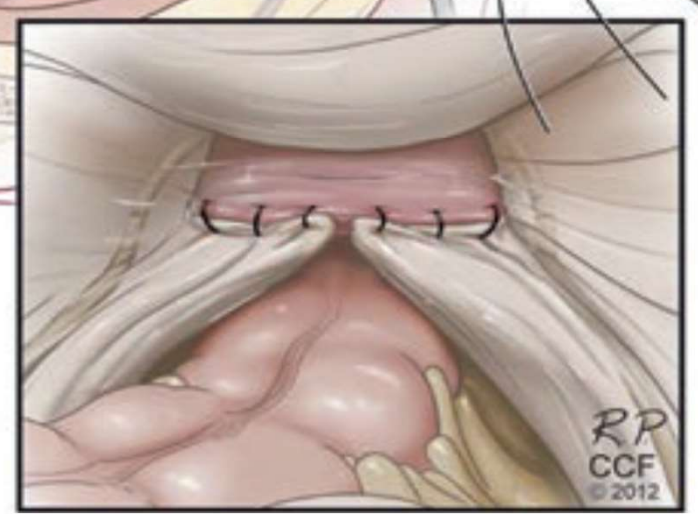
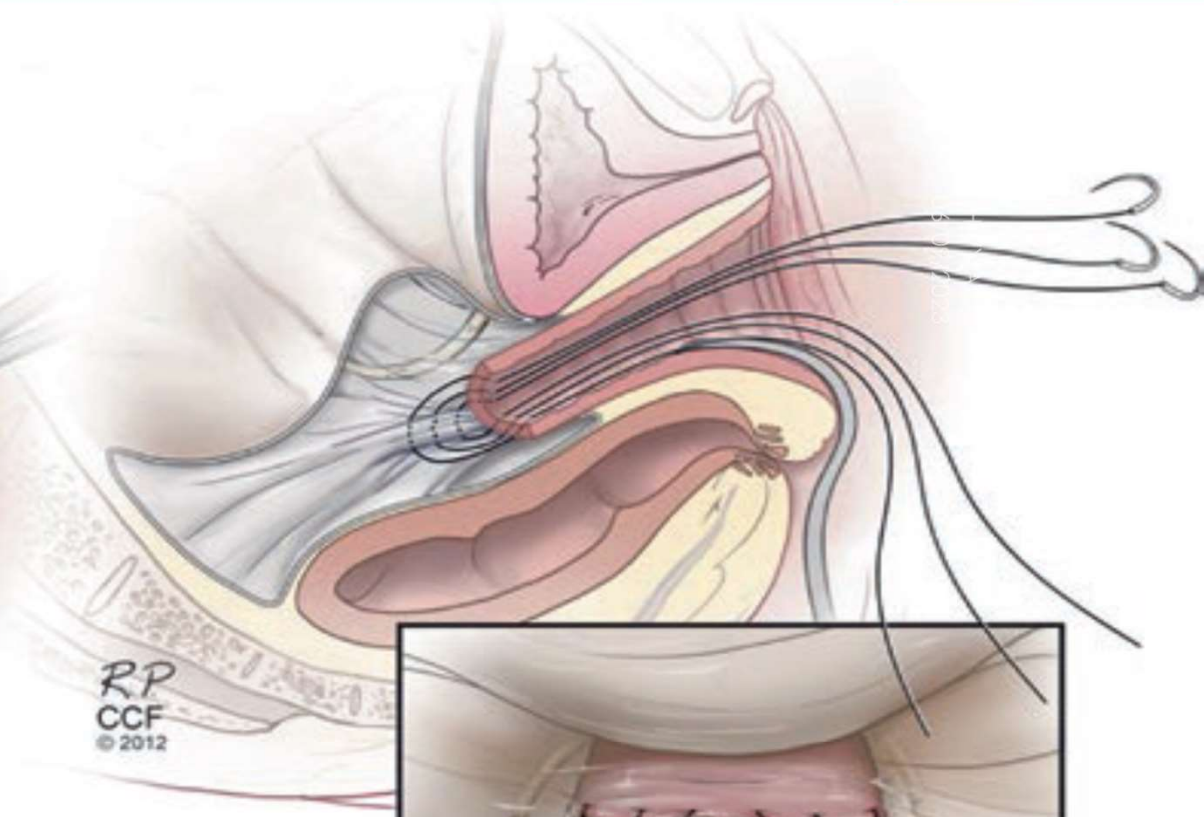
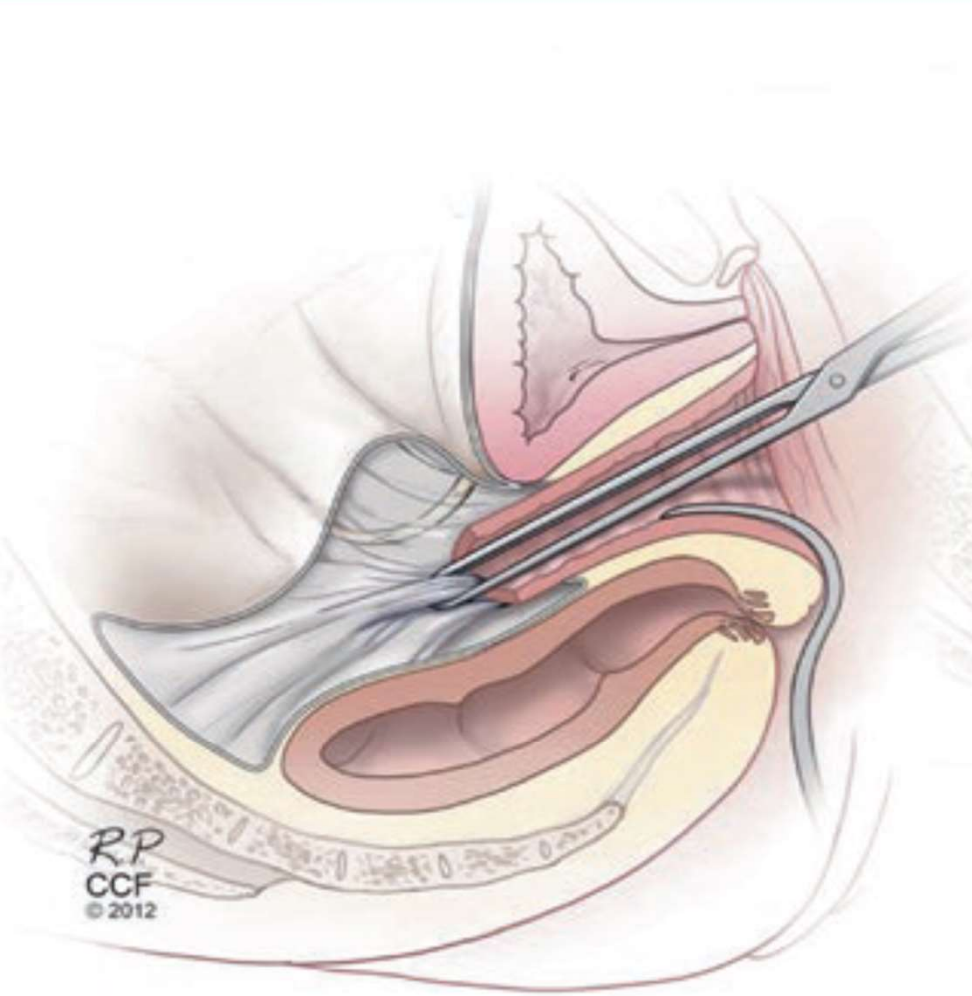
## Uterosacral Ligament Vaginal Vault Suspension

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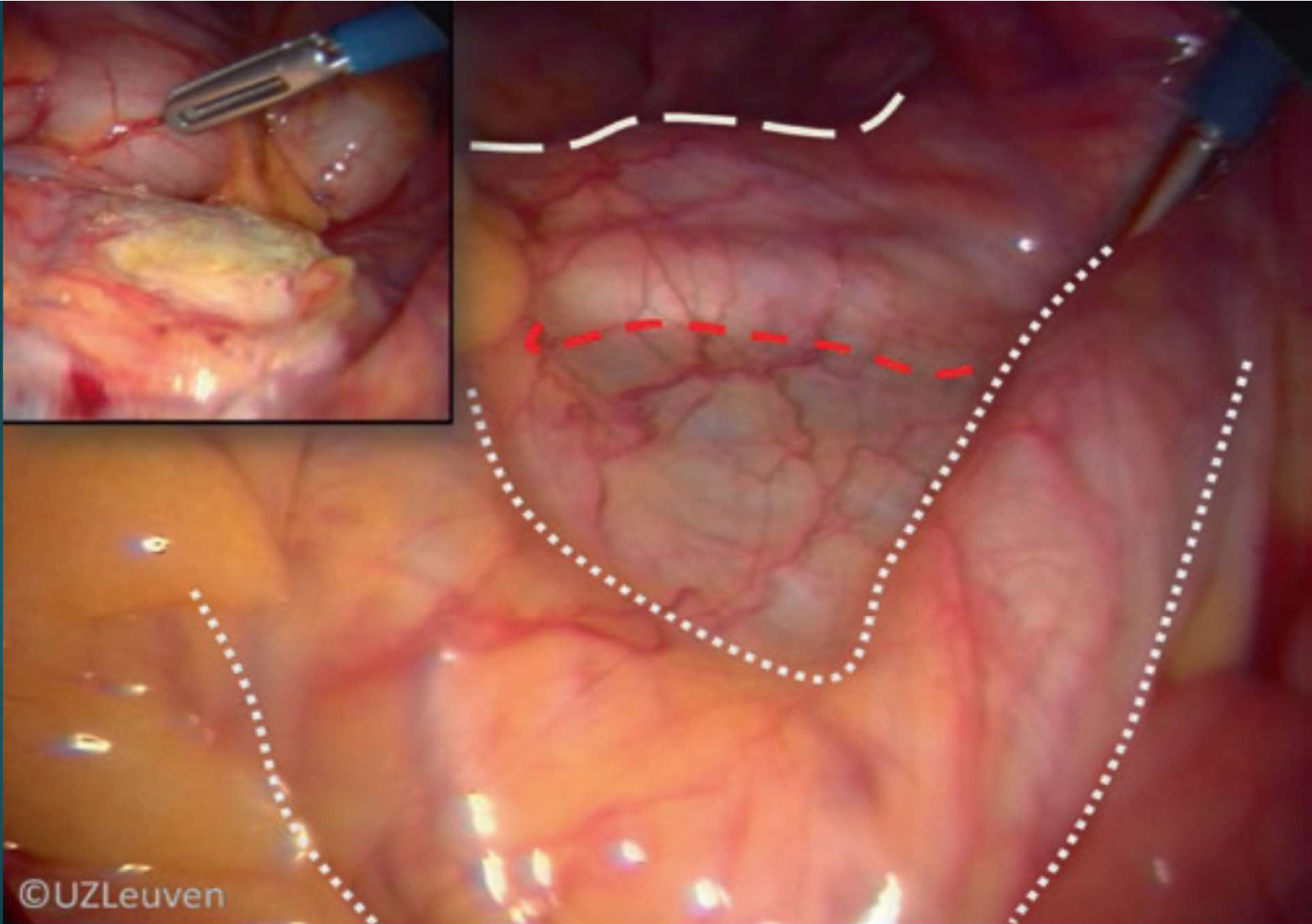
- ▶ Attach a strong segment of the USL to the rectovaginal and pubocervical fascia.
- ▶ Intraperitoneal exposure is accomplished through the vaginal cuff after hysterectomy or through a transverse colpotomy incision at the vaginal cuff in cases of vaginal vault prolapse.
- ▶ A gentle traction with an Allis clamp is exerted on the caudal part of the ligament, and triple transfixion of USL is performed bilaterally with a monofilament number 0 delayed absorbable suture.
- ▶ The lowest suture is placed at the level of the ischial spine, and the two following are placed 1 cm above each
- ▶ The suspending sutures are attached sequentially to the anterior and posterior leaves of the vaginal cuff, including the peritoneum. The most distal USL sutures are passed laterally, the proximal ones medially, and the intermediates ones between the previous ones.



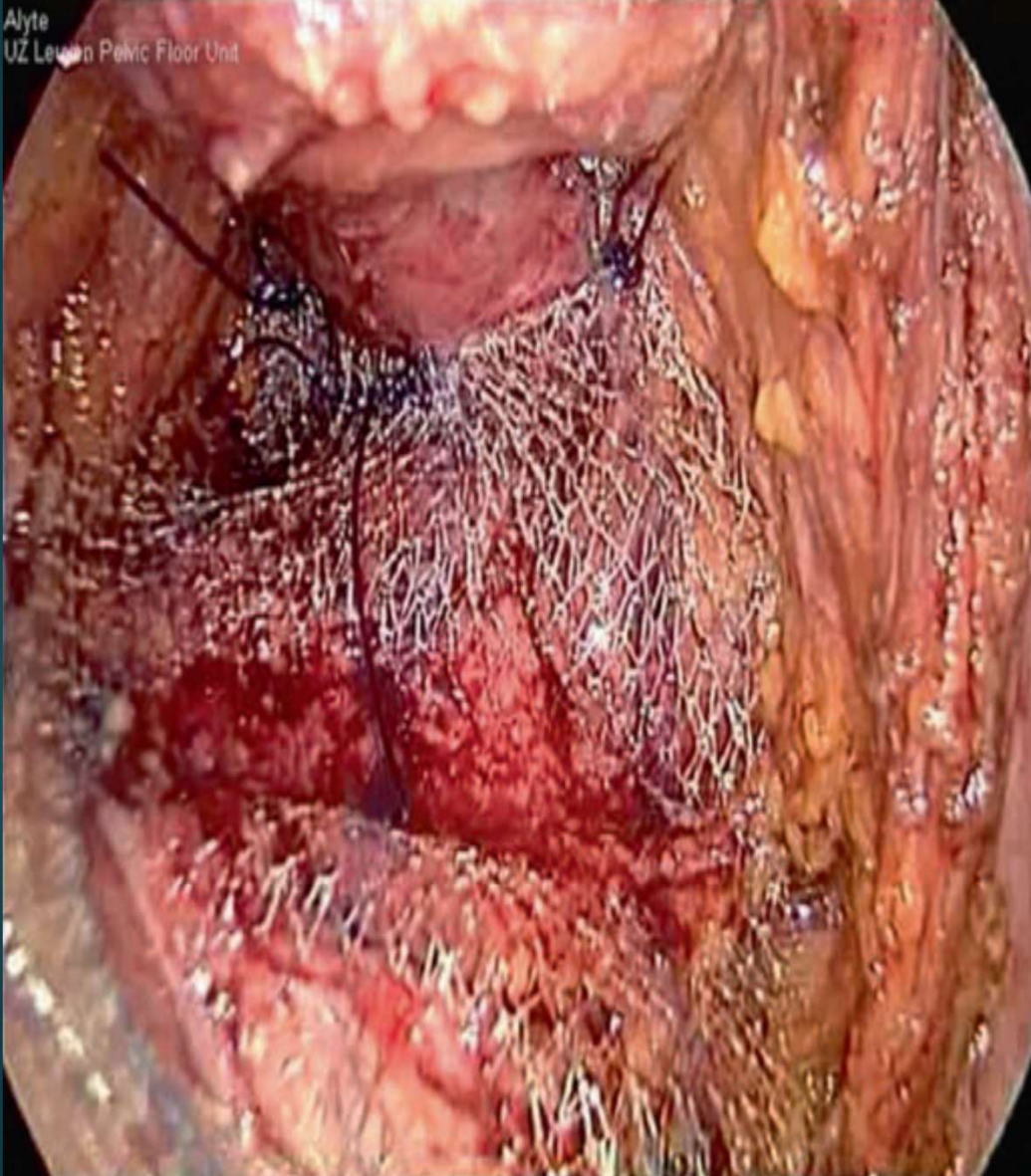


- ▶ ureteral injuries.  
intraoperative cystoscopy

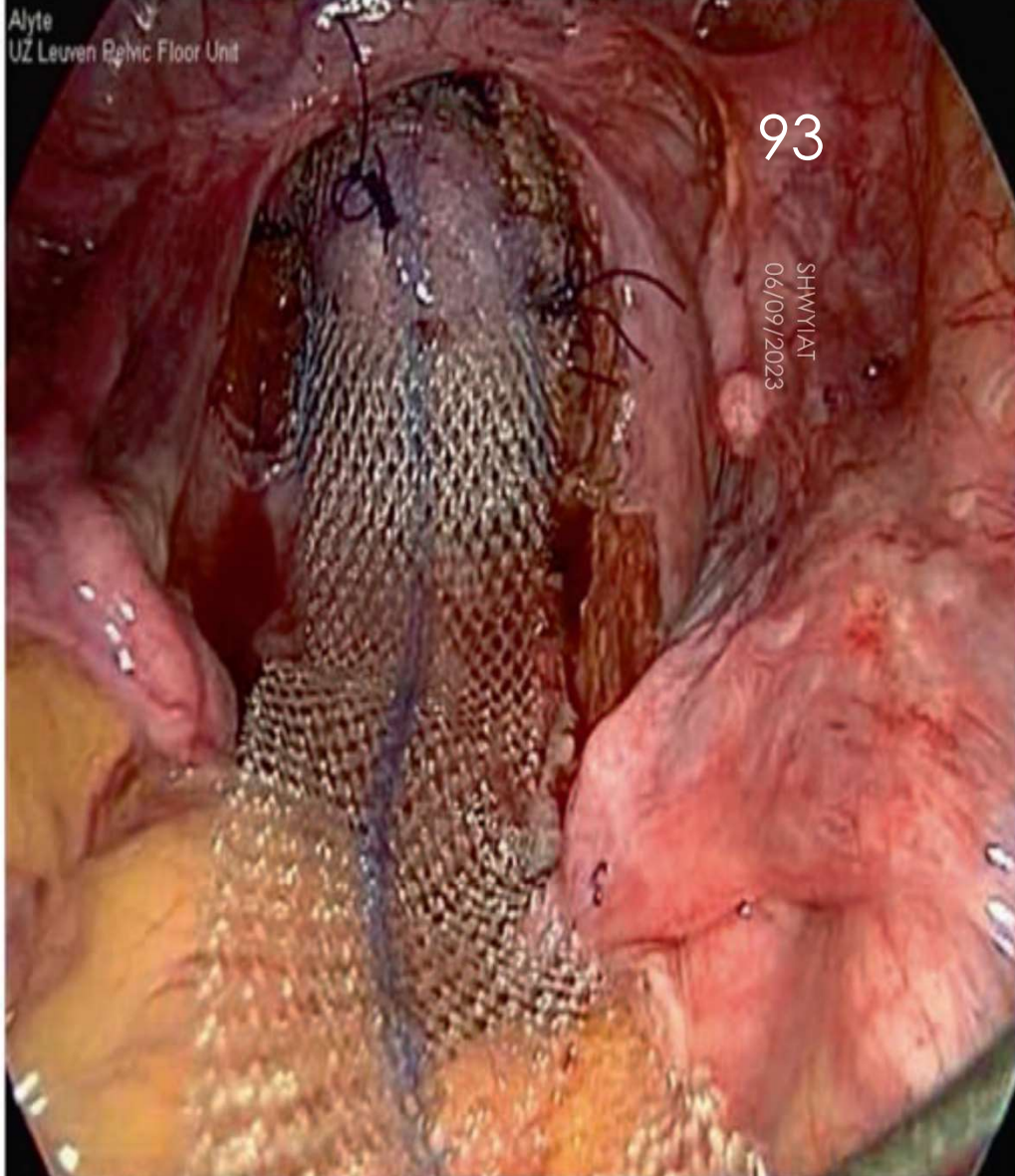
- ▶ Sacrocolpopexy (SC) is a well-established and accepted procedure for the treatment of Level 1 POPAs such, sacrocolpopexy
- ▶ Further indications include multicompartment POP .
- ▶ recurrent prolapse after failed vaginal repair.
- ▶ For younger (<60 years old) and sexually active women with symptomatic POP, SC with mesh provides:
  - Anatomic pelvic restoration.
  - Durable results and less dyspareunia by maintaining vaginal length and axis.
  - Aseptic mesh placement, thus reducing the risk of mesh infection and erosion.



Alyte  
UZ Leuven Pelvic Floor Unit



Alyte  
UZ Leuven Pelvic Floor Unit

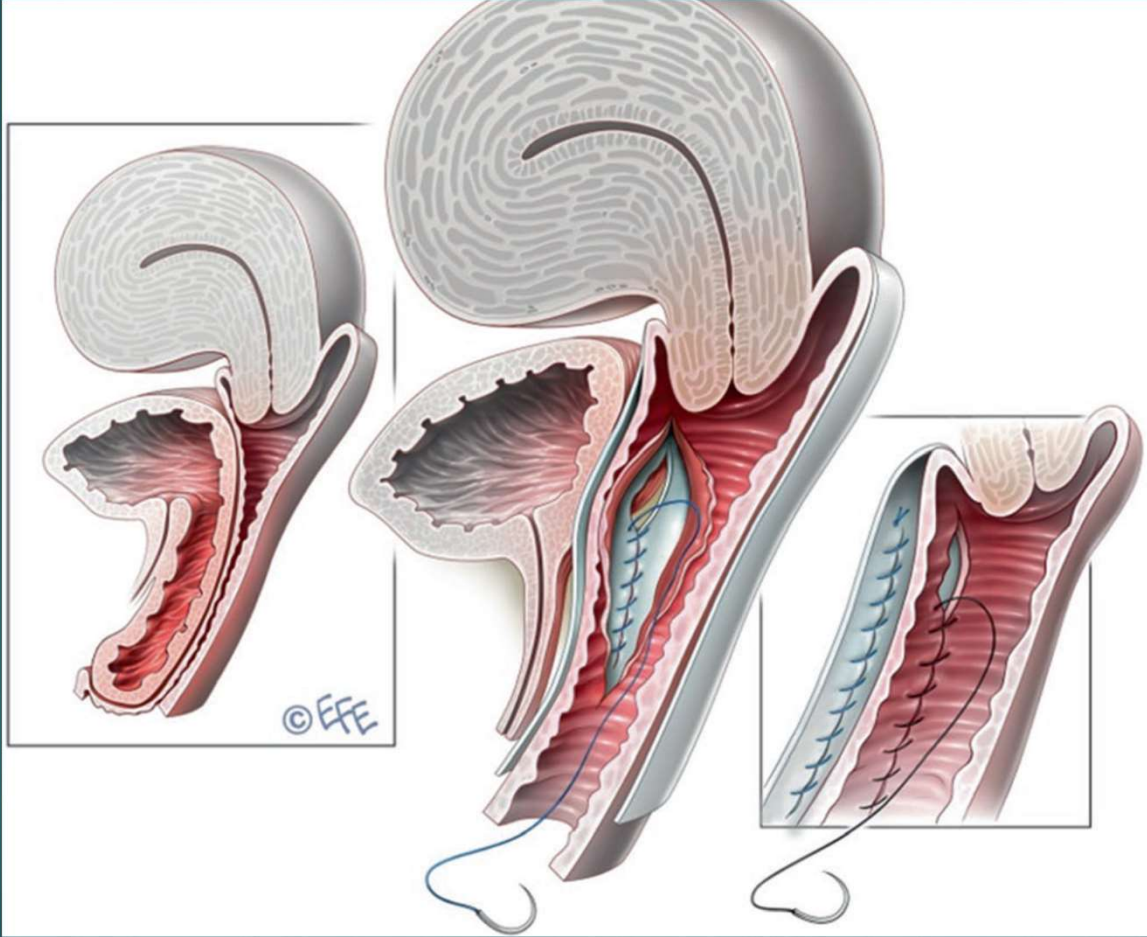


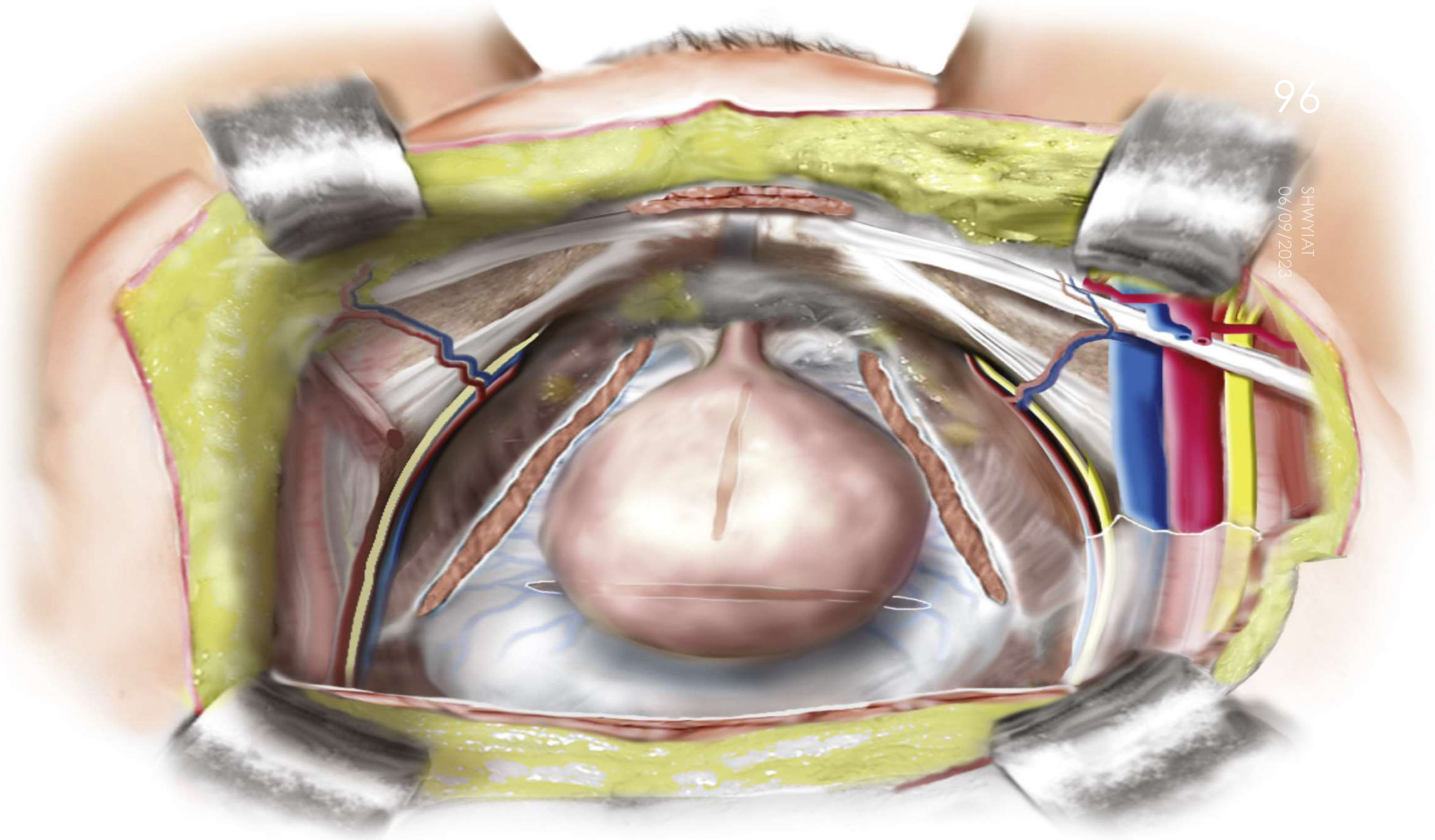
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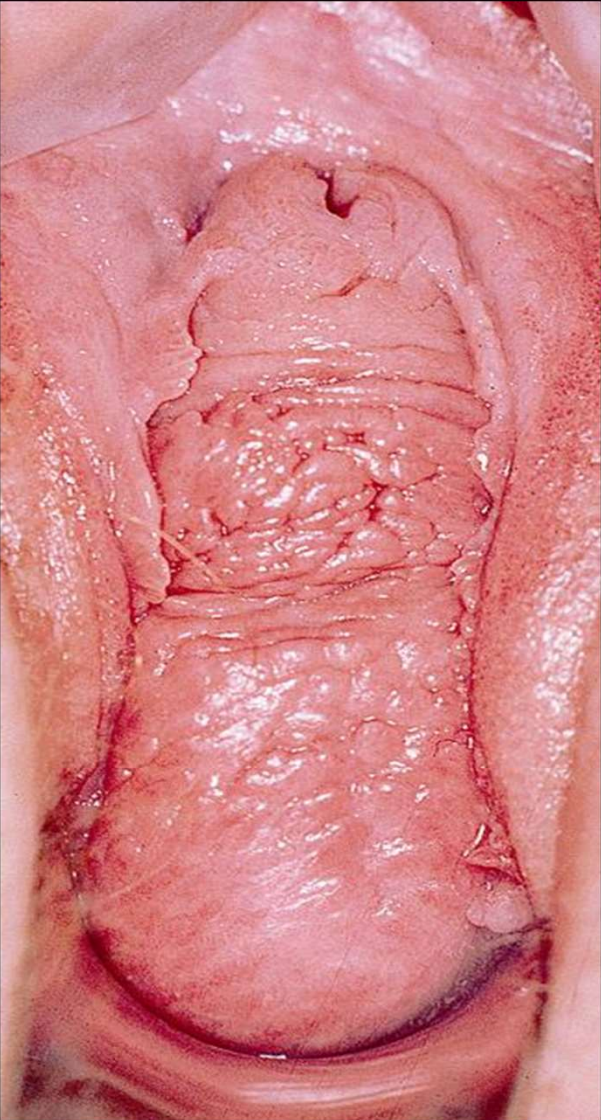
## Anterior Compartment Prolapse

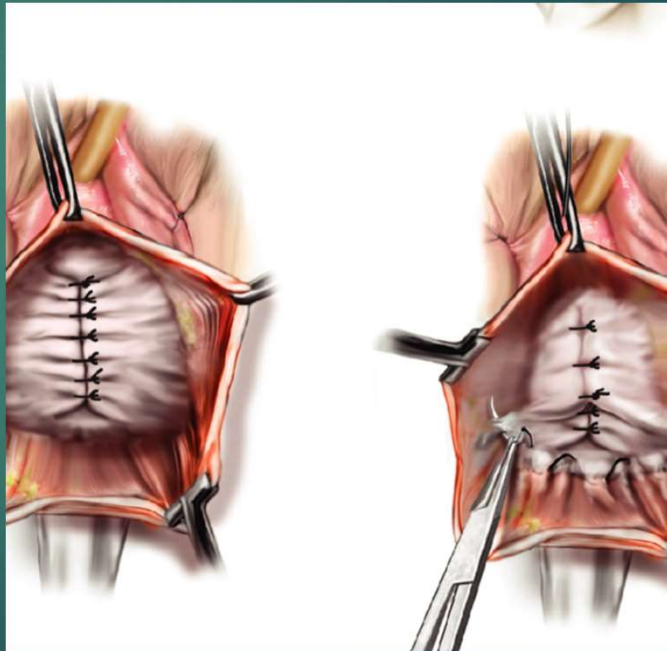
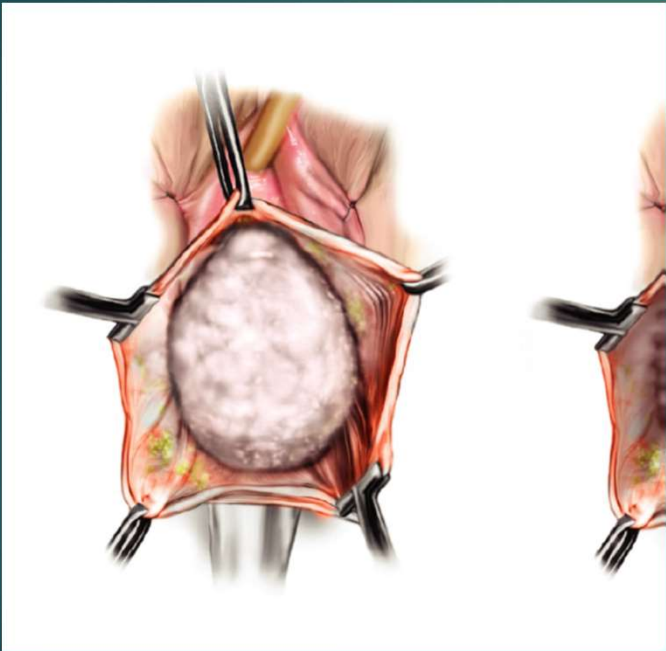
- ▶ Central defect in the vaginal wall,
  - ▶ A defect in the lateral attachments of the pubocervical fascia to the arcus tendinous fascia pelvis, or
  - ▶ A transverse defect in the separation between the pubocervical fascia and the cervix.
- 
- ▶ Proper identification of the location of defect is crucial for selecting the appropriate repair











## A question

Is it better to leave the prolapsing uterus or  
must we remove it then ?

## Advantages of Uterine Preservation

- Less bleeding
- Psychological advantage
- Fertility
- Less ureteric injury
- May be quicker

## My feelings about uterine sparing

- ➔ If it is a large bulky barrel-shaped cervix then it should be removed



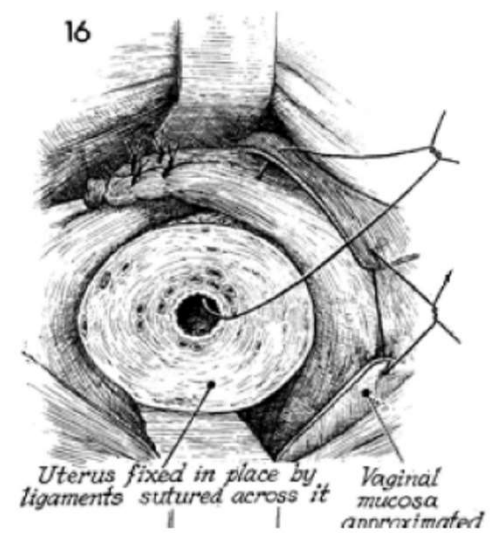
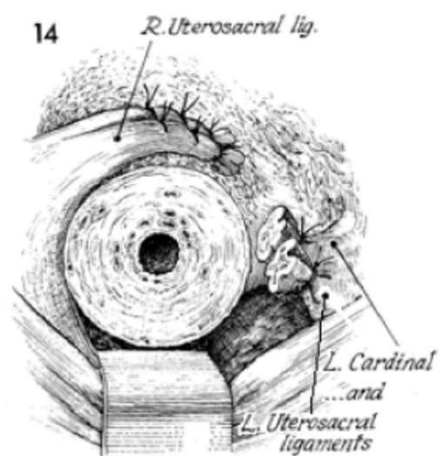
## Manchester Repair



## Manchester Repair

- Amputation of Cervix
- Shortening of Uterosacral Ligaments and Re-attachment
- Closure with a Sturmdorf Suture

# Manchester Repair





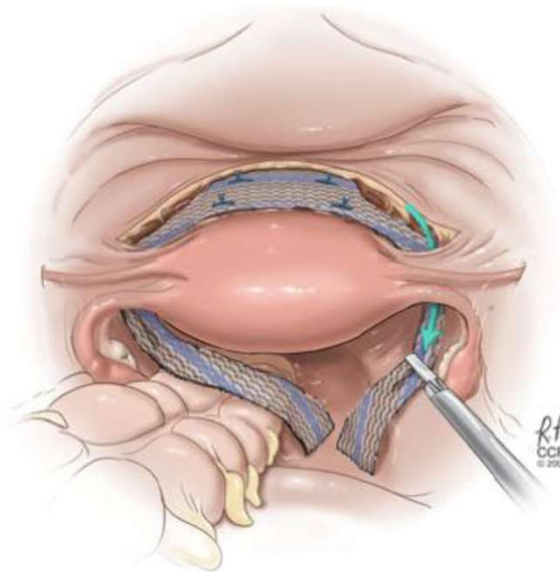
## Abdominal approach

- Young women
- Sexually active
- Healthy, low BMI
- Physically active

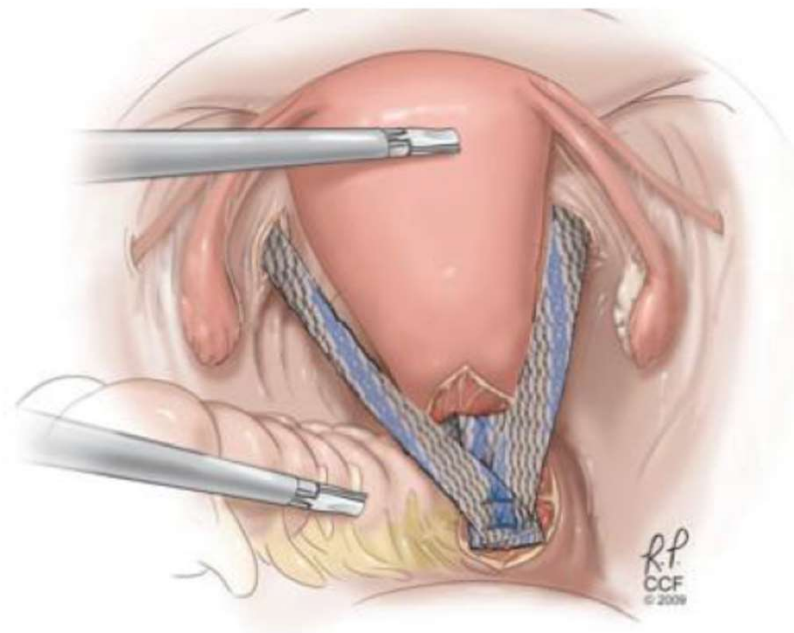
## Abdominal approach: Options

- Sacrohysteropexy
- Total Hyst and sacrocolpopexy
- Supracervical Hyst and sacrocolpopexy
- Uterosacral ligament suspension

# Sacrohysteropexy



# Sacrohysteropexy



What is better

Sacrohysteropexy  
*VS*  
Hysterectomy and Sacrocolpexy

	Sacrohysteropexy	Hysterectomy and Sacrocolpopexy
OP Time	+	+++
Mesh Erosion	-	+++
OP blood loss	+	+++
Addresses anterior prolapse	+/-	+++
Option of pregnancy	+++	-
Problem of future uterine pathology	++++	-

## Management Options for Women with Uterine Prolapse Interested in Uterine Preservation

Nathan Kow · Howard B. Goldman · Berl Ridgeway

**Table 1** Preoperative considerations in women considering uterine preservation

Future pregnancy
Obstetrical history including mode of delivery
Risk assessment for cervical disease
Recent normal pap smears
Negative testing for oncogenic HPV or
History of prior HPV vaccine
Risk assessment for uterine disease
Normal menstrual cycles in premenopausal women
No abnormal uterine bleeding
No history of postmenopausal bleeding
Ultrasound (recommended if history of abnormal uterine bleeding)
Endometrial biopsy (recommended if history of abnormal uterine bleeding)
Counseling regarding need for continued screening for gynecologic disease

*If you are  
going  
to leave  
the uterus*

