Pregnancy, Childbirth And Pelvic Floor Disorders

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23/10/1400

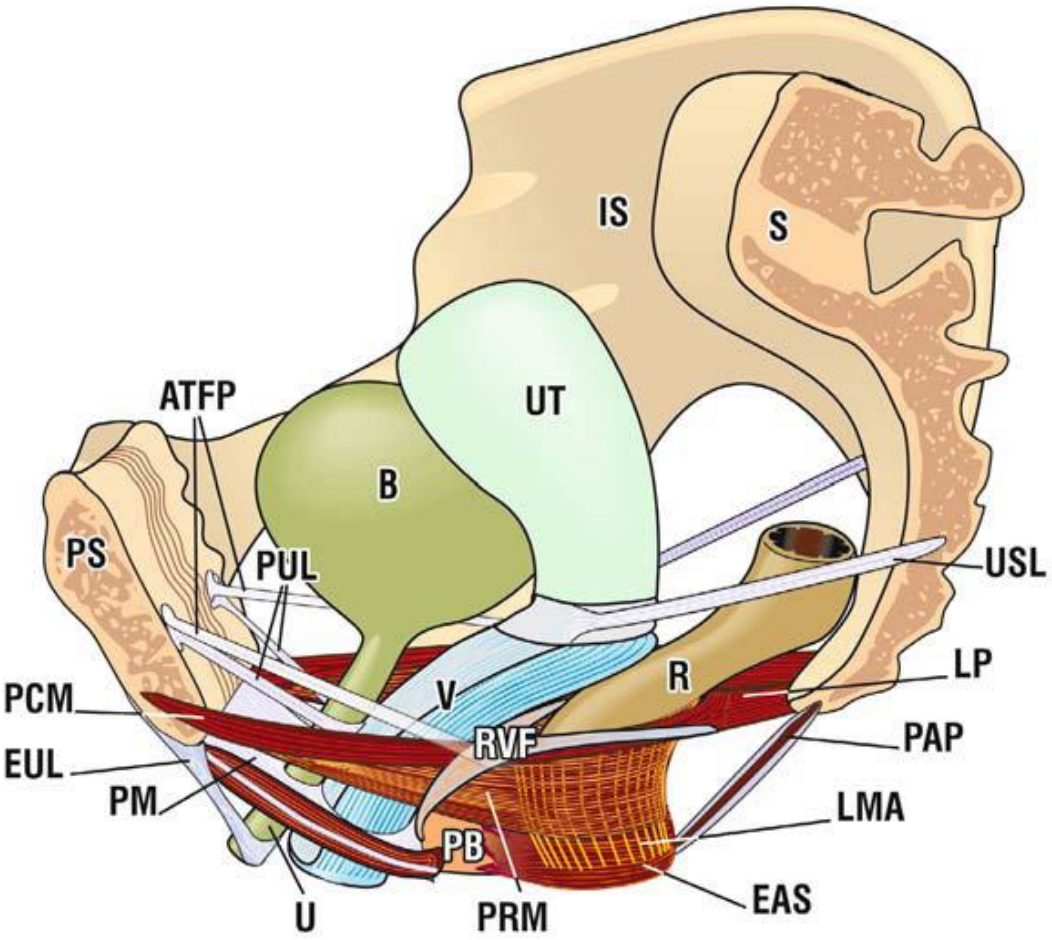
Introduction

Pelvic floor disorders (PFDs) include:

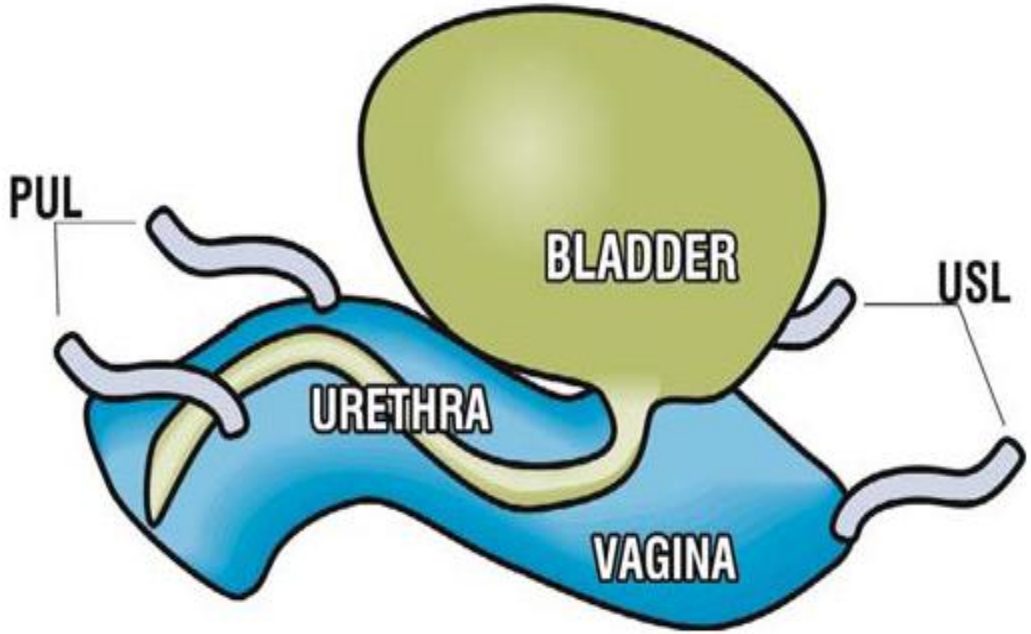
- urinary incontinence
- fecal incontinence
- pelvic organ prolapse

An area of intense investigation is the effect of pregnancy and childbirth on a woman's risk of developing pelvic floor disorders and whether this risk can be reduced by modifications to obstetric care such as planned cesarean delivery

The term “pelvic floor” is used broadly to include all the structures supporting the pelvic cavity, not the levator ani group of muscles



Pelvic organs support

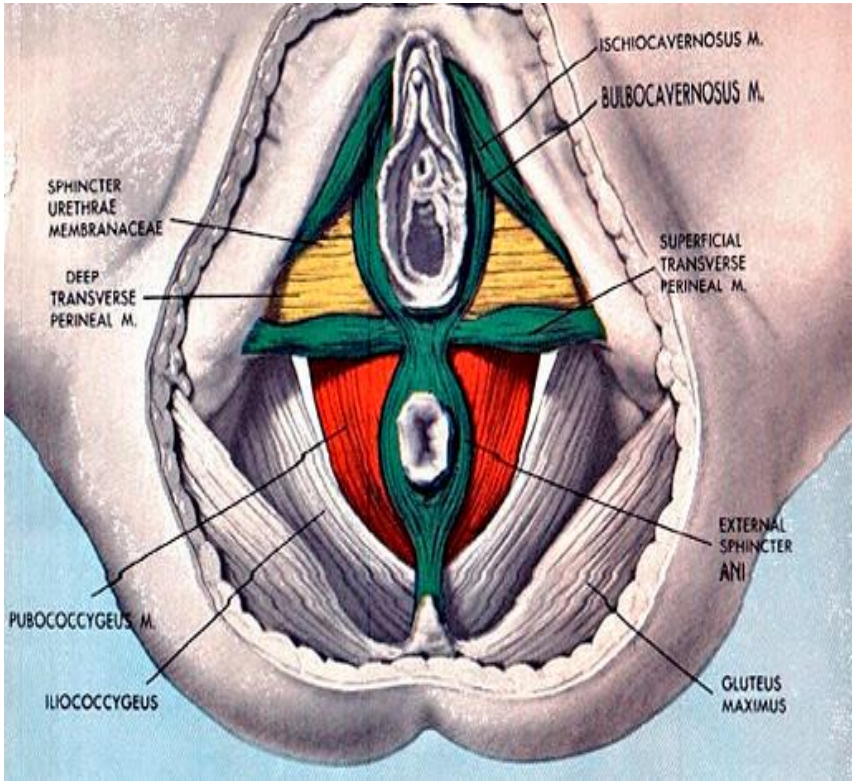


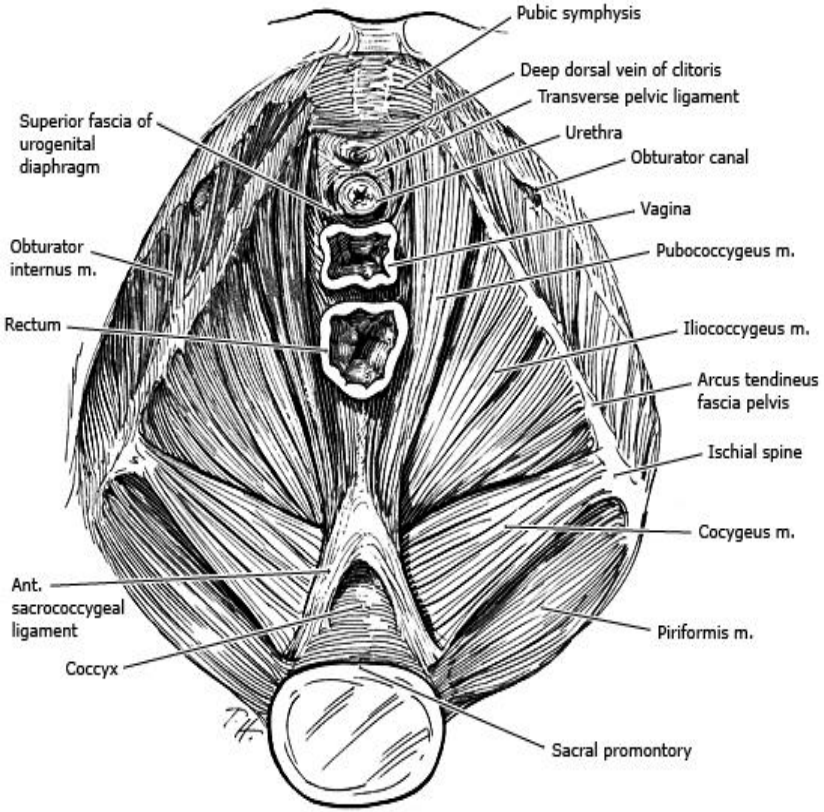
Pelvic organs support

- **Pelvic muscles** (dynamic support through constant activity; self-regulating trampoline effect): Levator ani , coccygeus and fascias

- **Connective tissue** (Endopelvic fascia): Visceral fascia, Parietal fascia, Deep endopelvic fascia

Pelvic muscles





- **visceral fasciae:**

Vagina ,Uterus ,Bladder ,Rectum

- **Parietal fascia:**

Obturator fascia

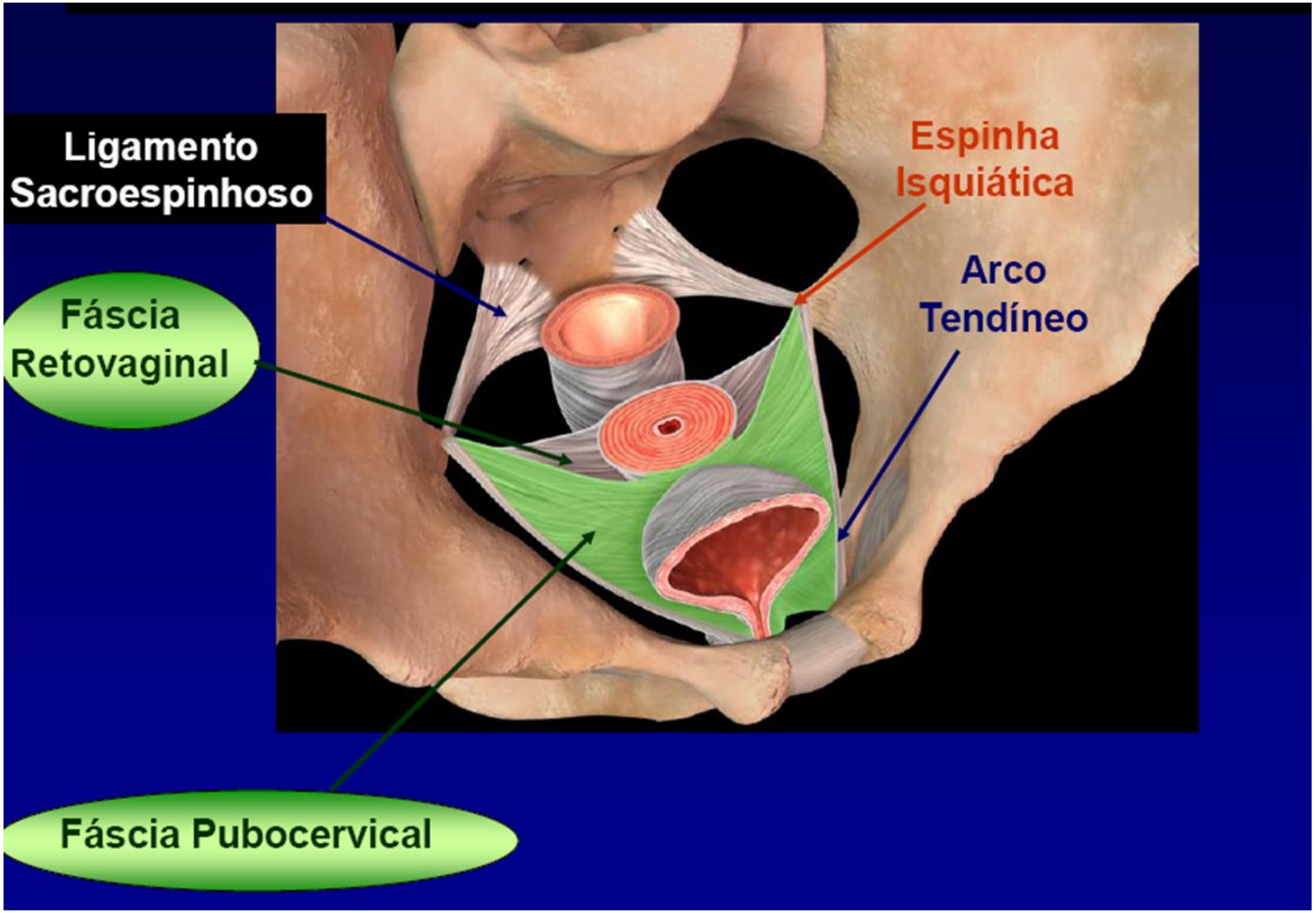
Levator ani fascia

Coccygeus fascia (Sacrospinous ligament)

Piriformis fascia

Components of the deep endopelvic fascia

- **Ligaments**(6): Uterosacral ligaments(2)
  Cardinal ligaments(2)
  Pubocervical ligaments(2)
- **Septums** (2): pubocervical septum
  Rectovaginal septum
- **Ring**(1): Pericervical ring


Ligamento Sacroespinhoso
Espinha Isquiática
Arco Tendíneo
Fáscia Retovaginal
Fáscia Pubocervical

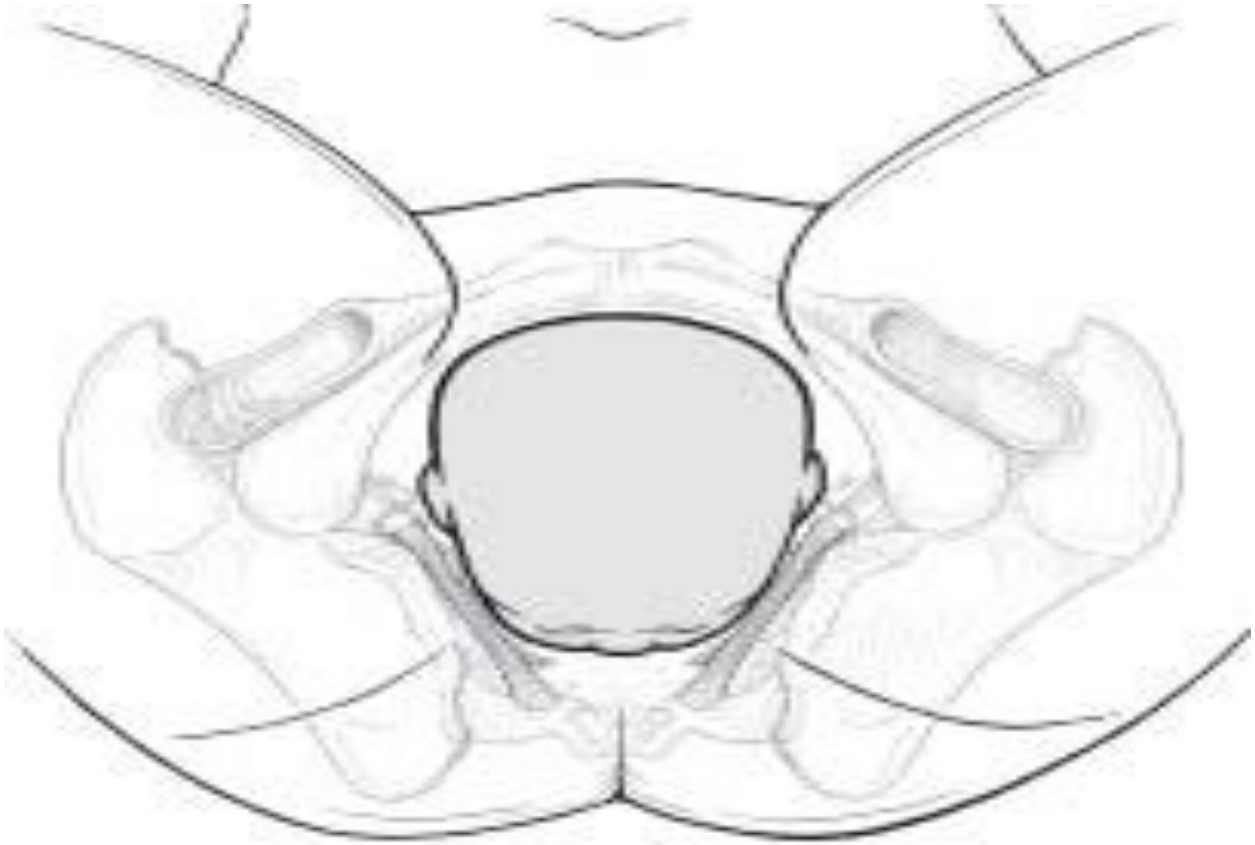
Mechanism for pregnancy and childbirth related PFD

pregnancy and delivery contribute to pelvic floor injury due to compression, stretching, or tearing of:

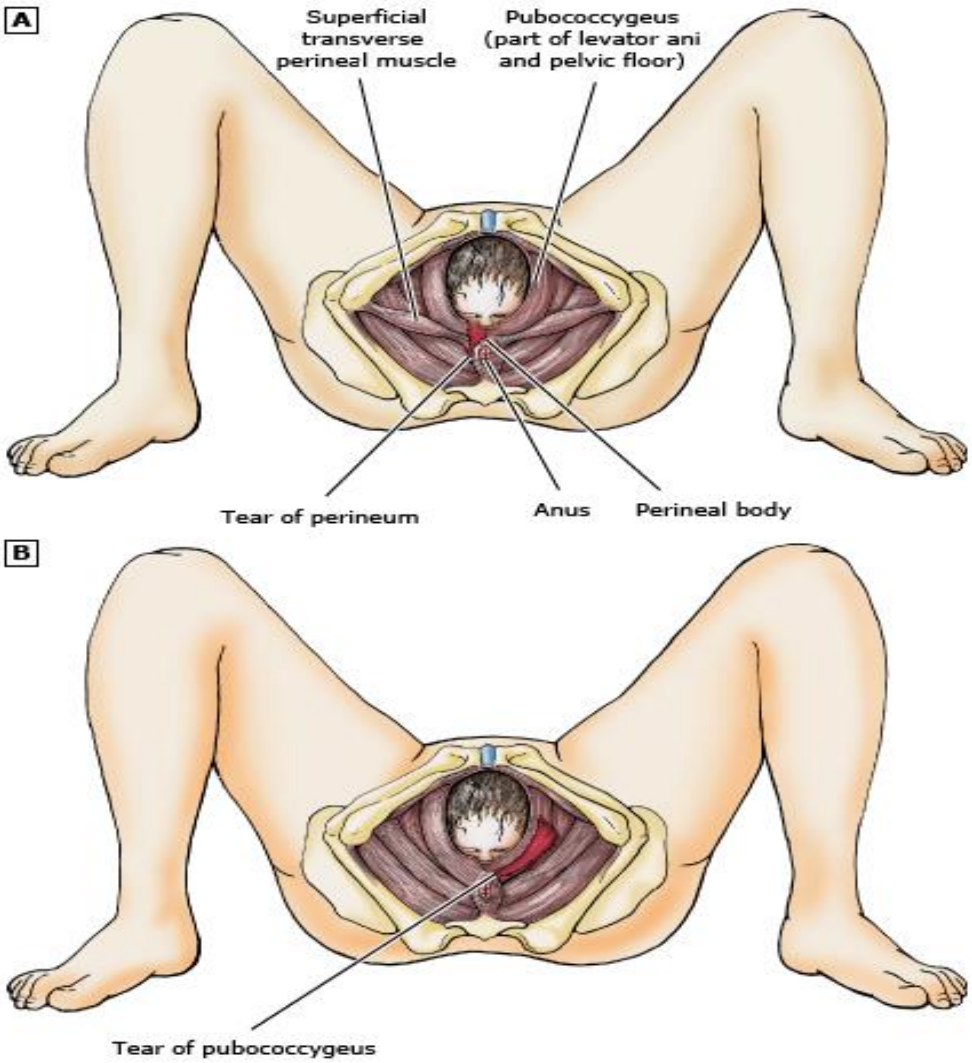
-Neural injury

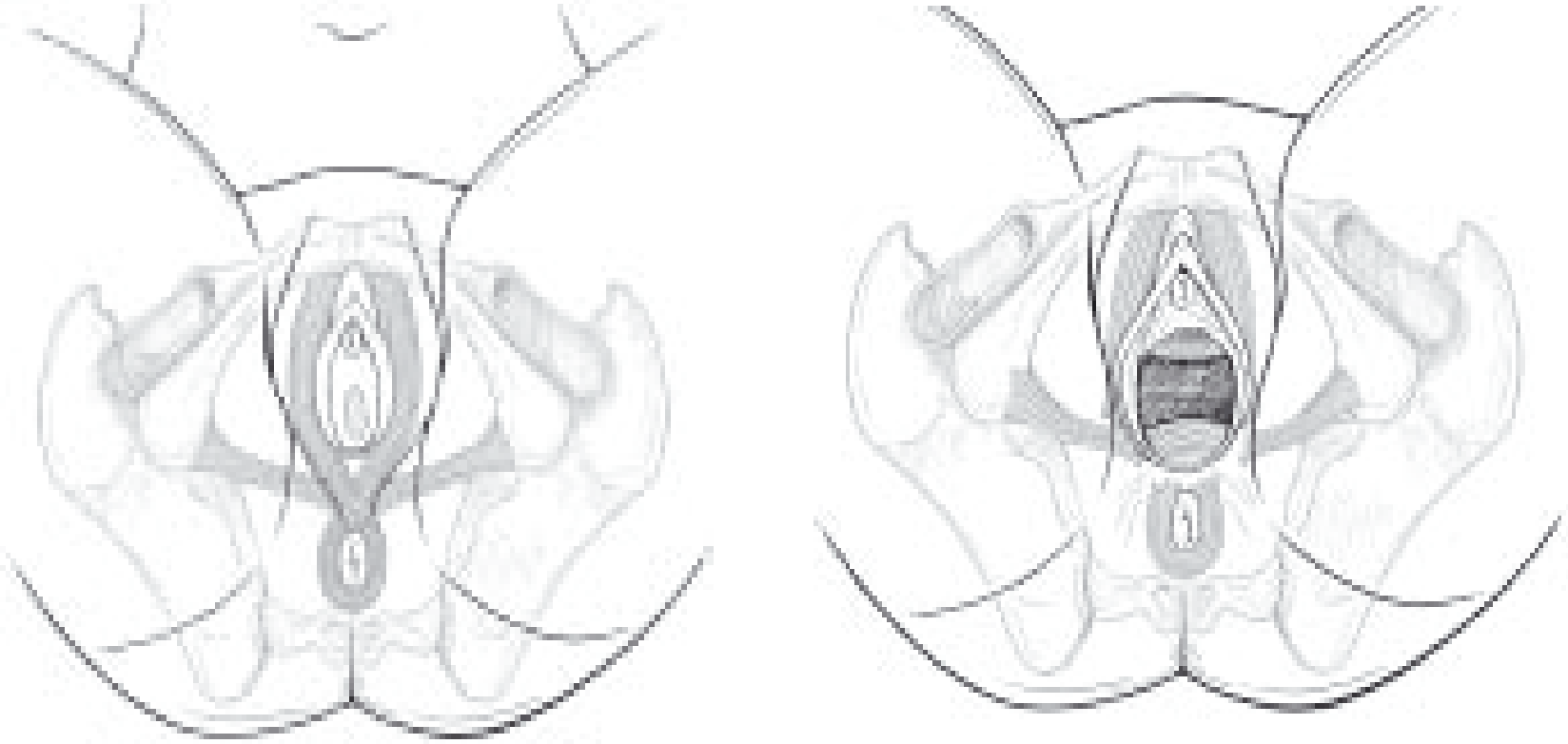
-Injury to the levator ani and coccygeus muscles

-connective tissues and ligaments



Pudendal nerve adjacent to ischial spine


A
Superficial transverse perineal muscle
Pubococcygeus (part of levator ani and pelvic floor)
Tear of perineum
Anus
Perineal body
B
Tear of pubococcygeus



Perineal anatomy before and after childbirth

Association of PFD with Parous Women

- Among twins, parous sisters with at least two births were more likely to report PFD than their nulliparous twin sisters
- A study of over 90,000 women in Sweden found the surgery for PFD was performed in a greater proportion of women with a history of vaginal delivery than those with a history of cesarean delivery
- A prospective cohort study of more than 17,000 women followed for 17 years, found that, compared with nulliparity, the risk of hospital admission for PFD increased markedly for the first (four-fold) and second birth (eight-fold), and then increased less rapidly for subsequent births (third: 9-fold; fourth: 10-fold)
- A national survey of United States nonpregnant women (n = 1961): urinary incontinence (15.7 percent), fecal incontinence (9.0 percent), and pelvic organ prolapse (2.9 percent) . Parous women had higher rates of PFDs

  Among parous women, it has been estimated that 50 percent of incontinence and 75 percent of prolapse can be attributed to pregnancy and childbirth.

Prevalence of PFD during pregnancy, Labor and delivery

- urinary incontinence during

pregnancy:

41.0% (range of 9–75%). Stress urinary incontinence (63%) is the most prevalent type of UI; 26% of the women reported daily loss, whereas 40% reported loss on a monthly basis.

labor:

in the absence of vaginal delivery, has a negligible effect on the development of PFDs later in life.

delivery:

-vaginal versus cesarean delivery

- operative vaginal delivery

- maternal age

Can obstetrical care be modified to reduce the pelvic floor disorders?

- **Prophylactic pelvic floor muscle exercises**

  Pelvic floor muscle exercises (PFME) performed during pregnancy help to decrease the short-term risk of urinary incontinence in women without prior incontinence, but a long-term benefit has not been established

  postpartum PFME
- **avoiding excessive weight gain**
- **Avoiding constipation**
- **Limiting parity**
- **Other strategies** : age and race

Can obstetrical care be modified to reduce the pelvic floor disorders?

- **Cesarean delivery before labor**

  Even if a reduction in pelvic floor disorders could be demonstrated, other harms and benefits of elective cesarean delivery need to be weighed against this benefit (Grade 2C)

  7-12 women would have to deliver all of their children by cesarean birth to prevent one woman from developing pelvic floor disorders later in life

Can obstetrical care be modified to reduce the pelvic floor disorders?

- **Changes in labor management**

✓ Avoidance of protracted active labor or second stage of labor

✓ Selective use of operative vaginal delivery (episiotomy and operative delivery have independent and significant impacts on urinary and anal incontinence after delivery(cephalopelvic disproportion, maternal race, and the use of other obstetrical interventions)

urinary incontinence

- stress UI (SUI)
- urgency UI (UUI)
- combination of both [mixed UI (MUI)]

stress urinary incontinence

- PFME is the first-line conservative treatment for women with SUI before consideration of other treatments. PFME is more a effective treatment for SUI during pregnancy because it is a safe treatment without complications, inexpensive, simple to perform, does not require instruments, and can be done anywhere and anytime

urgency urinary incontinence

- The prevalence of urinary symptoms such as urgency, frequency, and urge incontinence is high in pregnancy
- Despite the high prevalence of symptoms, the majority of women report to not find these symptoms bothersome
- First-line treatment often includes of behavioral modifications such as avoidance of caffeine and timed voiding, bladder training, pelvic floor physical therapy
- oral medications
- onabotulinum toxin A injections
- Sacral Neuromodulation

Selected management issues

- Women with urinary incontinence before or during pregnancy

  surgical treatment of incontinence or prolapse are deferred until childbirth is complete. There is no consensus on management of pregnancy and delivery in women who have undergone a surgical procedure for repair. Two small case series that included women who had a pregnancy following incontinence or prolapse surgery reported that two-thirds delivered by cesarean section

- onabotulinum toxin A injections

- Sacral Neuromodulation

Selected management issues

- There is evidence that an elective caesarean delivery protects against stress urinary incontinence in case of pregnancy after **bladder neck suspension**.
- For mid-urethral sling procedures, this evidence is not available. The presented case reports do not clearly demonstrate that caesarean delivery is necessary in case of pregnancy and delivery after **a mid-urethral sling procedure**. Furthermore, a second mid-urethral sling operation is a minor procedure compared to a caesarean section, and there is evidence that a second mid-urethral sling operation has the same success rate as the first procedure

Summary

- Pregnancy and childbirth appear to be associated with an increased risk of developing pelvic floor disorders.
- Pregnancy and delivery likely contribute to pelvic floor injury due to compression, stretching, or tearing of nerve, muscle, and connective tissue.
- Pelvic floor muscle exercises performed during pregnancy help to decrease the short-term risk of urinary incontinence in women without prior incontinence, but a long-term benefit has not been established.
- Based on the available evidence, we suggest against performing cesarean delivery to prevent pelvic floor disorders or worsening of existing pelvic floor disorders (**Grade 2C**).


THANK YOU FOR YOUR ATTENTION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