Obstetrics and the risk of Pelvic Floor Disorders

or

Should We Avoid or Promote Vaginal Delivery
Boston Scientific: Legal advisor for midurethral sling litigation
Pfizer: Consultant
International Urogynecology Journal: Editor

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No honorarium
Objectives

- Relationship of Pregnancy, Labor and Delivery to Pelvic Floor Disorders
- Pelvic Floor Disorder Prevention after Delivery
- Planned Vaginal Delivery Vs. Cesarean Delivery on Maternal Request
Pelvic Floor Disorders include...

- Pelvic organ prolapse
- Urinary incontinence
- Overactive bladder
- Sexual dysfunction
- Recurrent urinary tract infections
- Pelvic Organ Fistulae
- Painful bladder syndrome (interstitial cystitis)
- Myofascial pain
- Fecal Incontinence
- Voiding Dysfunction
Overall prevalence in women of at least one PFD is 23.7%\(^1\)
- Increases with age
- 49.7% in those ≥80 years of age

Likelihood of having surgery in a woman’s lifetime for prolapse or incontinence is 11%\(^2\)

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Pelvic Floor Disorders

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Pudendal nerve terminal motor latency
- Normal latency in pregnant non-labored women\(^1\)
- 43% women with prolonged PNTML after vaginal or operative delivery \(\rightarrow\) most normalized by 2 month postpartum\(^2\)

MRI of pelvic floor muscles\(^3\)
- No levator ani defects in nulliparous women
- 20% primiparous women with levator ani defects

\(^3\) Delancey JO, et al. The appearance of levator ani muscle abnormalities in MRIs after vaginal delivery. OG 2003.
Incidence of anal sphincter injury noted after delivery is approximately 10% (range 1-24%).

Endoanal ultrasound may show occult sphincter injury in up to 35% primiparous women within a few months postpartum.

Risks
- Forceps delivery
- Prolonged second stage
- Large birth weight
- Midline episiotomy
- Occiput posterior position

Pelvic Floor Anatomy ➔ Function
Anal sphincter laceration doubles risk of anal incontinence 6 months after delivery (26%), compared to vaginal delivery without anal sphincter laceration (11%) \(^1\)

- Cesarean not entirely protective (7.6% with AI) \(^1\)

Impact of delivery type declines with age\(^2\)

21 Studies comparing postpartum anal incontinence in women who had cesarean Vs. vaginal delivery
  - 31,698 women (6,028 CD and 25,170 VD)

Only 1 RCT (breech presentation)

Only one study showed CD with decreased risk AI

Conclusion ➔ CD not recommended for Al prevention in average risk women

Prevalence SUI increases during pregnancy

Up to 1/3 of women will report SUI postpartum

SVD with 3 times increased likelihood of SUI compared to CD without labor\(^1\)

No difference in rates of stress urinary incontinence based upon mode of delivery\(^2,3\)

- 2 years and 5 years after delivery

Prevalence is variable based upon definition

Women with advanced prolapse more likely to have a history of parity and a vaginal delivery

POP increases 3-5 fold with ≥1 vaginal delivery

Forceps delivery increases risk POP

Increased weight of vaginally delivered fetus correlates with prolapse

Levin, et al. Characterizing the phenotype of advanced pelvic organ prolapse. FPMRS 2012.
Pelvic Floor Muscle Training for Prevention of Pelvic Floor Disorders
22 RCT’s of PFMT versus usual antenatal or postnatal care
  - 8485 women (4231 PFMT and 4254 controls)

Antenatal PFMT: with 30% less likelihood of UI symptoms 6 months postpartum

Postnatal PFMT: if SUI symptoms at 3 months, 40% less likely to report UI at 12 months

Insufficient evidence for FI

Little evidence regarding long-term effects

Cesarean Delivery on Maternal Request
A cesarean delivery that is...

- Planned
- Primary
- Pre-labor
- In the absence of any maternal or fetal indication for cesarean delivery
Actress Elizabeth Hurley had one. So did supermodel Claudia Schiffer. Ex-Spice Girl Victoria Beckham and singer Toni Braxton had two each. TV mom Patricia Heaton had four. They're so popular among the upper class in Brazil that the only way you won't get one in Rio de Janeiro, as the joke goes, is if your doctor gets stuck in traffic.

What all these women had are C-sections. Not the emergency caesareans that have been performed for hundreds of years to rescue babies from women in medical crisis. (Legend has it that Julius Caesar was born this way.) Rather, they had an increasingly popular modern-day variation: planned, scheduled operations for all sorts of less-than-critical reasons.
Too Posh To Push?
NOT Too Posh to Push
SER of 9 studies (8 international) investigating antenatal preferences of nulliparous women on planned cesarean

0-100% women expressed a preference for cesarean

Variable cultural preferences

Rates of CDMR

• NIH State-of-the-Science Conference 2006

• Little confidence in published estimates

  1. US and internationally: 4 – 18%

  2. Birth certificate data for primary cesarean with “no indicated risk:” 3.3 – 5.5%

  3. Statistical algorithms: 2.6%

  4. NHDS data: 0.75 – 1.3%

54 Studies comparing key reference group (CDMR or proxies) to planned vaginal delivery

- Urinary incontinence and maternal hemorrhage lower with planned cesarean
- Neonatal respiratory morbidity higher and maternal length of stay longer with planned cesarean
- Subsequent uterine rupture or placenta previa increased with planned cesarean

“No strong evidence on any outcome”

Designed to focus on neonatal outcomes after planned vaginal delivery vs. planned cesarean for breech presentation at term

- Included multiparous women
- Allowed randomization in labor
- >50% women required assistance completing the symptom questionnaires
- Questionnaires at 3 month and 2 years inquired about UI symptoms within past 7 days and 3-6 months respectively

>1000 women 5-10 years after delivery

Classified each delivery:
  - CD without labor
  - CD during active labor
  - CD at full dilation
  - Spontaneous vaginal delivery
  - Operative vaginal delivery

Compared to CD without labor ➔ Vaginal delivery with 3-fold increase in SUI and operative delivery with 4.5-fold increase in SUI

Compared to CD without labor...

- Spontaneous vaginal delivery $\rightarrow$ 5 times increased likelihood of prolapse to the hymen or beyond 5-10 years after delivery
  - 8.9 vaginal deliveries lead to 1 more case of prolapse

- Operative vaginal delivery $\rightarrow$ 7.5 times increased likelihood of prolapse
  - 6.8 operative deliveries lead to 1 more case of prolapse

- Not powered to evaluate cesareans with labor
  - No differences

>100,000 women, Mean follow-up >25 years

Women who had only vaginal deliveries have a 3-fold increased likelihood of UI and a 9-fold increased likelihood of POP, compared to women who only had cesarean deliveries

- Risks increased with number of vaginal deliveries
- NNT to prevent surgery for SUI = 357
- NNT to prevent surgery for POP = 135

“In the absence of maternal or fetal indications for cesarean delivery, a plan for vaginal delivery is safe and appropriate and should be recommended to patients.”

Vaginal Delivery increase the risk of stress urinary incontinence and pelvic organ prolapse.
  - Probably not anal incontinence unless there is a tear

Pelvic Floor Muscle Therapy improves postpartum urinary incontinence.
  - Can reduce rates by roughly 50%
  - Long term prevention effect unknown

Maternal request C-section has a very limited role in prevention.
  - NNT of 135-357 to prevent one case of prolapse or incontinence.
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