

# **Does elective caesarean section prevent incontinence and prolapse?**

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# “Cesarean Goddess”

- elective CS - absence of any maternal or obstetric indication
- ?4-48% of all caesarean sections
- most common indication - protect pelvic floor, prevent urinary & faecal incontinence, preserve sexual function



# urinary incontinence

- Up to 1/3 of women report urinary incontinence following vaginal delivery
- incidence is lower in women delivered by CS (0-10%), particularly pre-labour CS
- subsequent deliveries minimal effect on severity or development of stress incontinence

## Antenatal stress incontinence an independent risk factor

- Danish study of 8610 women in first pregnancy - 56.1% of cases of postpartum incontinence attributable to antenatal incontinence; no significant reduction with CS delivery. Foldsprung et al. Acta Obstet Gynecol Scand 2004;83(10):923
- 268 nulliparous pts, antenatal & 3/12 postnatal urodynamics - postnatal results dependent on antenatal values, not on obstetric variables. Chaliha et al. BJOG 2000 107(11):1354

## Antenatal stress incontinence 2.

- 15 year followup of neurophysiological studies in first pregnancy - 2/3 with antenatal stress incontinence had symptoms 15 years later; ie doubled the risk regardless of subsequent deliveries. Dolan et al. BJOG 2003;110(12):1107
- Canadian study > 900 women - antenatal stress incontinence doubled the risk of postpartum stress incontinence regardless of vaginal or CS delivery. Eason et al. BMC Pregnancy & Childbirth 2004;4(1):4

# Age a significant risk factor

- Urinary incontinence in elderly nuns similar to prevalence in parous postmenopausal women. Buchsbaum et al. Obstet Gynecol 2002;100:226
- Norwegian EPINCONT study of 15,000 women found rates of incontinence similar after 50 years, irrespective of mode of delivery. Rorkveit et al. NEJM 2003;348(10):900

# CS only partially protective

- SA community study of 1500 women found ↑ urinary incontinence with age; CS did not significantly reduce pelvic floor morbidity.  
MacLennan et al. BJOG 2000;107(12):1460
- 12 months postpartum: stress incontinence in 10.3% after NVD, 3.4% after elective CS. Groutz et al. Neurourol Urodyn 2004;23(1)2
- 7879 pts - protective effect of CS lost after 3 x CS. Wilson et al. BJOG 1996;103:154

## CS only partially protective 2.

- Danish study reported postpartum stress incontinence in 28.3% of women after vaginal delivery & 12% after CS
- urodynamic study found no significant difference in rates of stress incontinence between elective/early labour CS and vaginal delivery
- 2 yr F/U of term breech trial showed no differences in incontinence. Hannah et al. Am J Obstet Gynecol

# CS only partially protective 3

- systematic review of urinary incontinence (inc multiparas, labour CS, instrumental)
- for stress incontinence, risk reduced from 16% to 10% with CS
- no significant difference in severe stress incontinence based on mode of delivery; number to prevent 110
- (Press et al 2007. Birth 34:3 September)

# CS only partially protective 4.

- 50% of postmenopausal women with urinary incontinence; parous 5x rate of nulliparous women, CS 3.5x nulliparous women. Faundes et al. Int J Gynecol Obstet 2001;72(1):41
- POSST with 1004 pts - pregnancy per se increases risk of urinary & faecal incontinence; this risk not reduced by CS delivery. McKinnie et al. Am J Obstet Gynecol 2005;193(2):512

# EPINCONT study

- Attributable risk of vaginal delivery in causation of urinary incontinence ie amount preventable by CS - 35%
- individual women could reduce risk of moderate to severe urinary incontinence from 10% to 5% if delivered solely by CS - but only up to age 50 & if  $\leq 2$  pregnancies; protective effect lost after this.

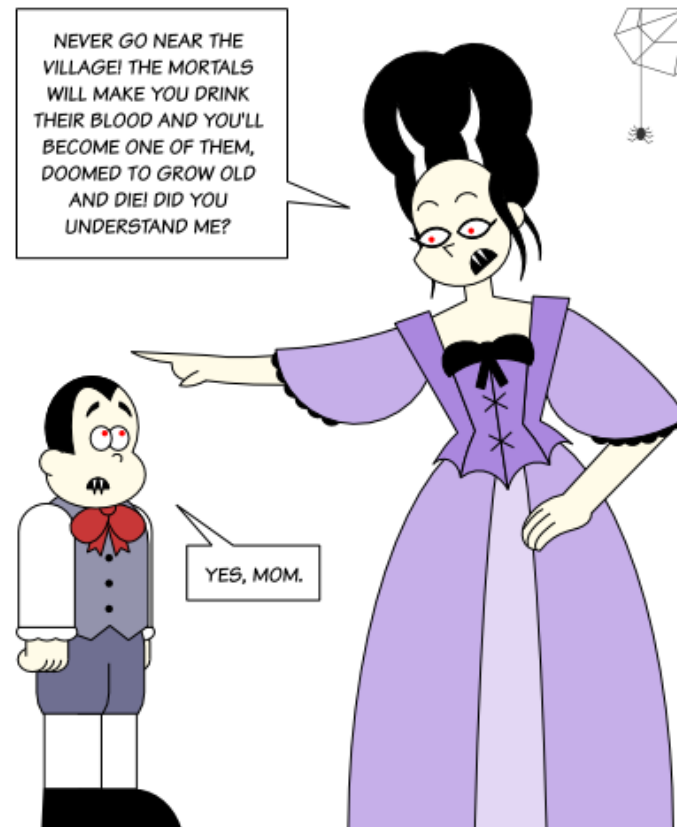
## **Westmead outcome –one year of across the board elective CS**

- 954 women with 3 or more deliveries
- potentially prevent incontinence in 3052 women, if para 2 have no more children
- using incidence of 17-18%, 549 women at risk of urinary stress incontinence by age 50
- elective CS would reduce this by 192 pts
- 7888 CS to prevent 192 cases up to 50 years ie 41 CS per 1 case of incontinence

# does CS prevent incontinence?



....depends how you look at it



# Prolapse & vaginal delivery

- More common in parous women, increasing parity significant
- lifetime risk of surgery for prolapse or incontinence 11%. Olsen et al. Obstet Gynecol 1997;89(4):501
- 10% of women in SA community survey report surgery for prolapse McLennan
- Oxford FPA - prolapse surgery 2.04 per 1000 women years of risk. Mant et al. BJOG 1997;104:579

# Prolapse & vaginal delivery 2

- Mild asymptomatic prolapse in 50-60% of parous women. Hendrix et al. Am J Obstet Gynecol 2002;187(1):99
- Prolapse occurs in nulliparous women - WHI study 20% of postmenopausal women; routine gynaecological pts 12.9% had Stage II prolapse. Nygaard et al. Obstet Gynecol 2004;104(3):489. Swift Am J Obstet Gynecol 2000;183(2):277
- prolapse also occurs after CS - 22% with Stage II prolapse. Swift

# Prolapse & vaginal delivery 3.

- Weakening of pelvic organ support begins in pregnancy. O'Boyle et al. Am J Obstet Gynecol 2002;186(6):1160
- incidence of prolapse in general population increases with age, BMI and increasing waist circumference

# Prolapse & elective CS

- Data less robust than for incontinence, mainly on parity
- ?attributable risk 50%
- Westmead situation - using lifetime risk 440-449 operations performed by 80 years of age
- approx 220-224 preventable by CS
- requires 7888 CS; 39 CS to prevent one operation for prolapse

# faecal incontinence

- confusing area, very emotive
- wide variation - incontinence of flatus 2-25%, faecal incontinence 0-9.6%
- anal sphincter trauma in 0.5-8% of vaginal deliveries; forceps delivery ↑risk
- ?40% faecal incontinence with anal sphincter injury
- ?more occult anal sphincter defects

# faecal incontinence 2

- No sphincter defects after elective CS but faecal incontinence in 3-7% Lal et al.Obstet Gynecol 2003;101(2):303
- antenatal incontinence of faeces, flatus and faecal urgency similar to postnatal incidence . Also no relationship between symptoms & sphincter defects on endo anal US. Chaliha et al.Am J Obstet Gynecol 2001;185(2):427
- long term F/U - poor correlation between sphincter defects & symptoms Bollard et al.Dis Colon Rectum 2003;46(8):1083

# faecal incontinence 3

- Longer term follow up does not show a protective effect for CS delivery. MacArthur et al. BJOG 2005;112:1075. McKinnie. McLennan.
- No protective effect with 3x CS compared with 3x vaginal delivery. Chaliha et al. BJOG 2004;111(7):754
- 10 years after first delivery – 200 NVD, 195 elective CS. CS no major reduction in faecal or urinary incontinence. Altman et al. Am J Obstet Gynecol 2007;197:512e1-512e7)

# faecal incontinence 4

- 2006 literature review – association vaginal delivery & anal sphincter injury but elective CS has not reduced risk of postnatal faecal incontinence. (Fenner D.Semin Perinatol 2006;30:261-266)
- 3000 elective CS; 11,440 vaginal deliveries – faecal incontinence associated with pregnancy, CS not preventative. (Nelson et al. Dis Colon Rectum 2006;49:1587-1595)

# faecal incontinence 5

- general gynaecology clinic - significant risk factors IBS, constipation, age and BMI but not parity. Boreham et al. Am J Obstet Gynecol 2005;192:1637
- increases with age; population studies show similar incidence for elderly men. Chiarelli et al. Aust J Aging 2005;24(1):19. Ho et al. Aust J Rural Health 2005;13:28

# Westmead situation

- following 3° or 4° anal sphincter injury, persistent defect on endoanal ultrasound in <2%; ie < 1:2500 vaginal deliveries
- questionable benefit of elective CS

# Sexual function

- MacLennan's study - 5% of younger parous women complained of vaginal laxity
- overall no difference in sexual problems, sexual satisfaction (male or female), resumption of intercourse, dyspareunia between vaginal delivery and CS

(Botros et al 2006. *Obstet Gynecol*;107(4):765-770. Gungor et al 2008. *J Sex Med*;5(1):155-63. Woranitat & Taneepanichskul 2007. *J Med Assoc Thai*;90(9):1744-1748

**Does elective caesarean section prevent incontinence and prolapse?**

- for some women
- to some extent
- for a while
- and at a price