

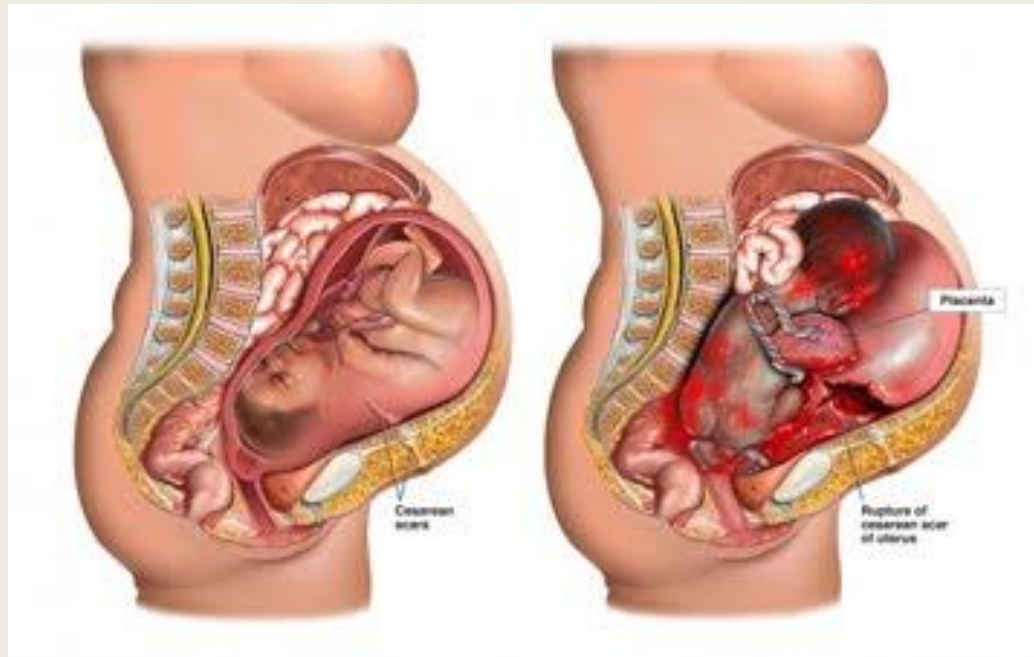
Nov 4th 2021



**Fødende som har haft en komplet
uterusruptur - hvordan går det i
efterfølgende graviditeter ?**



Uterusruptur



- Komplet vs. Partiel Ruptur
- Incidens: 1/200 ved TOLAC
(Trial of Labor After Cesarean)

DMBR (1997-2008): 39 472 singleton gravide til terminen
planlagde TOLAC

174 cases

DMBR (1997-2008): 2 efterflg fødsler (singleton gravide til terminen
planlagde TOLAC) ingen rupturer

269 kontroller



Rigshospitalet, Hvidovre, Frederiksberg, Gentofte, Glostrup, Herlev, Nordsjællands Hospital, Hillerød, Frederikssund, Øresund, Helsingør, Roskilde, Holbæk, Slagelse, Kalundborg, Næstved, Nykøbing Sjælland, Bornholm, Svendborg, Odense, Fyn, Sønderborg, Haderslev, Tønder, Esbjerg/Sydvestjysk, Grindsted, Fredericia, Horsens, Kolding, Vejle, Holstebro, Herning, Ringkøbing, Lemvig, Silkeborg, Randers, Odder, Grenå, Skejby/Århus, Viborg, Thisted, Aalborg, Brønderslev, Hjørring/Vendsyssel, Skagen, Frederikshavn



Excluded due to:

- Multiple pregnancy (n=35)
- Planned repeat cesarean (n=27)
- Preterm delivery (n=23)
- Unavailable medical record (n=10)*
- CS performed outside DK (n=9)
- No previous cesarean section. (n=6)
- Partial uterine rupture (n=4)
- Control for two cases (n=3)
- Two previous cesareans (n=3)
- Complete uterine rupture (n=1)

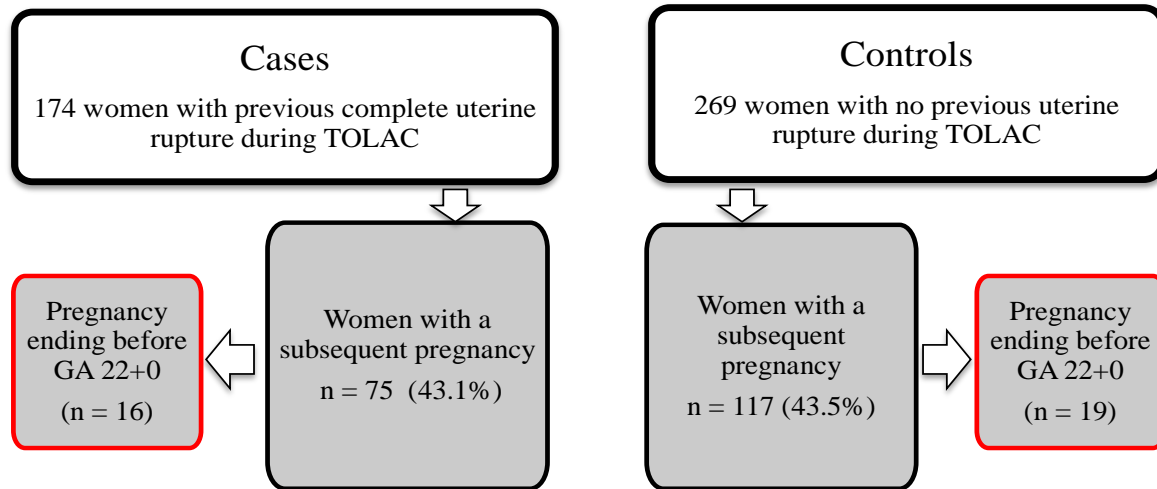
* Vandskade, kønsskifte, vidnebeskyttelse mv

Neo Outcomes

16% har mistet barnet

Neonatal Characteristics at Index	Cases N = 174	Controls N = 269	OR (95%CI)	P-value
Gestational age (GA) (days)	282.8 (255 – 299)	281.9 (261 - 299)		0.284
Stillbirth	9 (5.2)	1 (0.4)	14.6 (1.98–642.94)	0.001
Characteristics of neonates alive at birth	165 (94.8)	268 (99.6)		
Death within 28 days	19 (11.5) ‡	1 (0.4) §	34.7 (5.38–1448)	< 0.001
Age at perinatal death (days)	3.43 (0 - 20)	0		
Alive at 1 year	145 (83.3) ‡	267 (99.3) §	0.04 (0.001–0.28)	< 0.001
Apgar score < 7 at 5 min	68 (41.2) ‡	2 (0.7) §	93.2 (23.8–792.5)	< 0.001
Missing data (Apgar score)	7 (4.2) ‡	2 (0.7) §		
Admitted to NICU	89 (53.9) ‡	18 (6.7) §	16.26 (8.9–30.3)	< 0.001
NICU (days) if admitted	7.4 (1–48)	6.1 (1–15)		0.578

Næste graviditet



Outcome 1&2 trimester

Pregnancies after Index Delivery	Cases (n=174) Pregnancies (n=109)	Controls (n=269) Pregnancies (n=183)	OR (95%CI)	P-value
Women who conceived after index delivery	75 (43.1)	117 (43.5)	0.98 (0.66–1.47)	1.00
Pregnancies among women who conceived after index delivery	1.39 (1–4)	1.70 (1–9)		0.02
Interval from index delivery to 1 st subsequent pregnancy (months)	32.9 (0.7–110.8)	38.5 (3–134.4)		0.07
Induced abortions/miscarriages after index delivery				
- 1 st trimester (GA < 12 weeks)	35 (32.1)	40 (21.9)	1.69 (0.95–2.98)	0.07
Ectopic pregnancy	0	2 (1.1)		0.53
Miscarriage	13 (11.9)	6 (3.3)	3.99 (1.36–13.17)	< 0.01
Pregnancy terminated	22 (20.2)	32 (17.5)	1.19 (0.62–2.27)	0.64
- 2 nd trimester (GA 12 to < 22 weeks)	4 (3.7)	12 (6.6)	0.54 (0.12–1.86)	0.43
Miscarriage	4 (3.7)	10 (5.5)	0.66 (0.15–2.36)	0.58
Pregnancy terminated	0	2 (1.1)		0.53
- Missing gestational age (1 st & 2 nd trimester)	0	5 (2.7)		
Total (induced abortions/miscarriages)	39 (35.8)	57 (31.1)	1.23 (0.72–2.09)	0.44

Cases

174 women with previous complete uterine rupture during TOLAC

Women with a subsequent pregnancy continuing after GA 22+0

N = 59*



Women with a second or more pregnancy following the index-delivery continuing after GA 22+0

n = 11

109 graviditeter/
70 fødsler

Controls

269 women with no previous uterine rupture during TOLAC

Women with a subsequent pregnancy continuing after GA 22+0

N = 98*



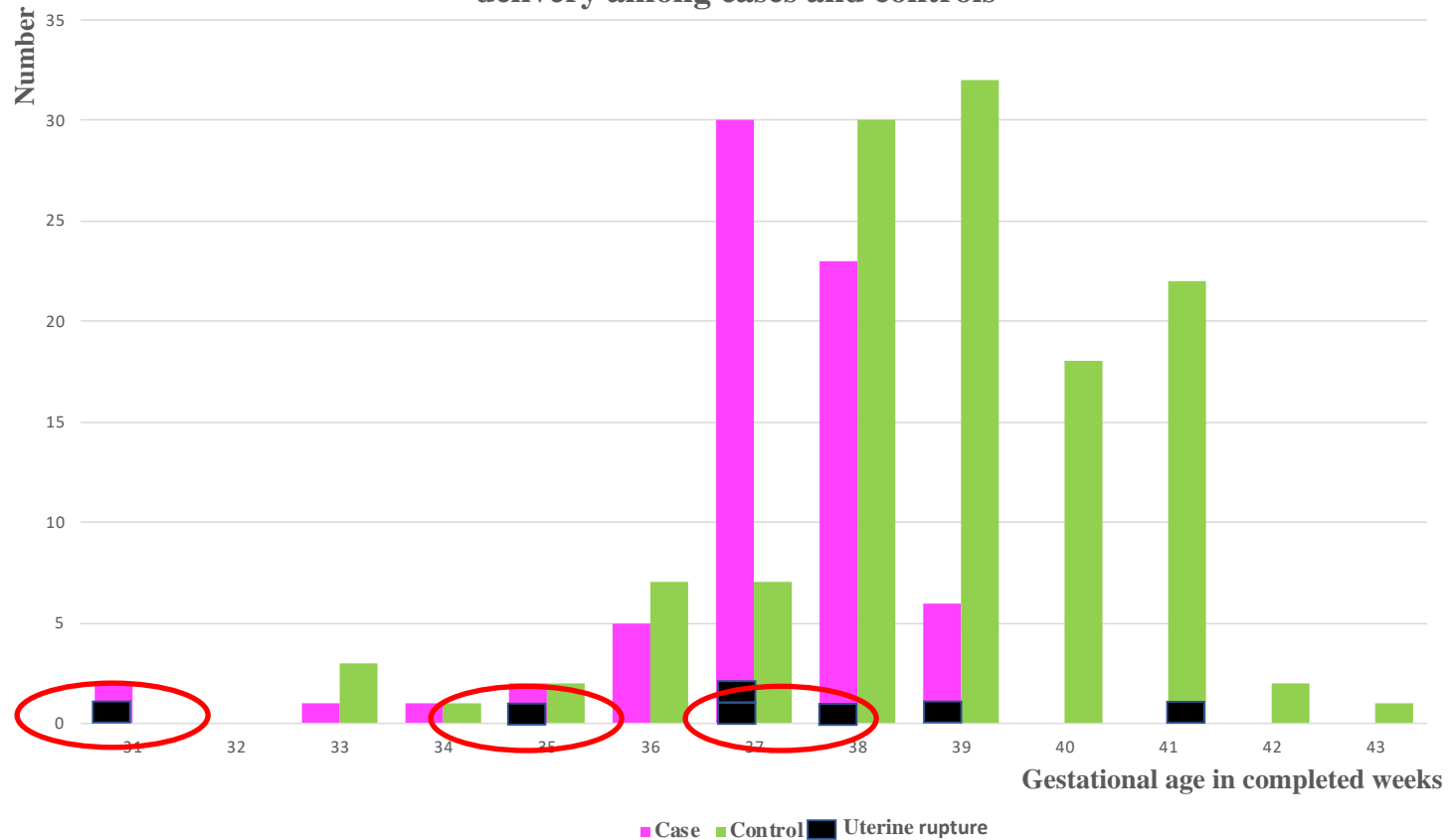
Women with a second or more pregnancy following the index-delivery continuing after GA 22+0

n = 28

183 graviditeter/
126 fødsler

Obstetric outcome/Procedures	Cases (n=174)	Controls (n=269)	OR (95% CI)	P-value
	Deliveries (n=70)	Deliveries (n=126)		
Uterine rupture	6 (8.5)	1 (0.8)	11.7 (1.36–543.1)	< 0.01
Placenta previa	1 (1.4)	1 (0.8)	1.81 (0.22–143.3)	1.00
Adherent placenta/Manuel exploration of the uterus	0	5 (4.0)		0.16
Peripartum hysterectomy/B-Lynch suture/Reoperation	0	2 (1.6)		0.54
Planned TOLAC	0	74 (58.7)		< 0.01
Cesarean delivery (CD)	70 (100)	52 (41.3)		< 0.01
- Planned CD before onset of labor	48 (68.6)	35 (27.8)	5.67 (2.86–11.32)	< 0.01
- Emergency CD	15 (21.4)	15 (11.9)	2.02 (0.85–4.77)	0.10
- before onset of labor	6 (8.6)	5 (4.0)	2.27 (0.55–9.74)	0.20
- during labor	9 (12.8)	10 (7.9)	1.71 (0.58–4.85)	0.32
- Unknown type of CD	7 (10)	2 (1.6)		

Figure 2: Total number of deliveries and uterine ruptures after index-delivery among cases and controls



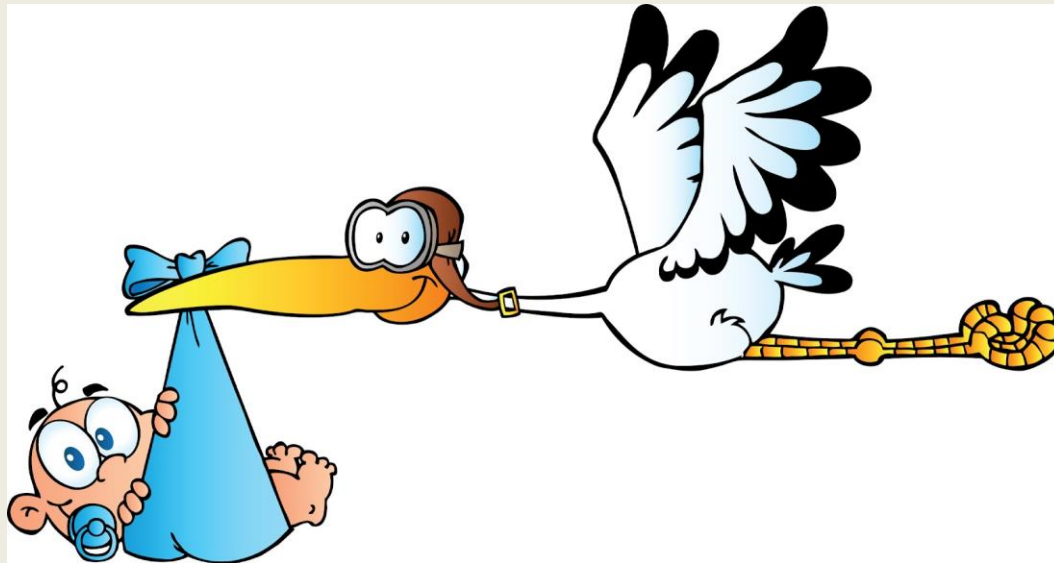
Blandt cases: 4 rupturer før fødsel, 2 rupturer under fødsel. 1 død
 Blandt kontroller. 1 ruptur under fødsel. 1 dødfødt – ikke ruptur.

Outcome Neonatal	Cases (n=174) Deliveries (n=70)	Controls (n=269) Deliveries (n=126)	OR (95% CI)	P-value
Live Birth	70 (98.6)	131 (99.2)	0.53 (0.01–42.54)	1.00
Stillbirth	1 (1.4)	1 (0.8)	1.87 (0.02–148)	1.00
Apgar < 7 at 5 min	1 (1.4)	3 (2.3)	0.59 (0.01–7.47)	1.00
Umbilical cord pH < 7.00	0	2 (1.6)		0.54
- Missing data pH	25 (35.2)	50 (37.9)		
CPAP	14 (19.7)	7 (5.3)	4.39 (1.55–13.46)	< 0.01
NICU	16 (22.5)	19 (14.4)	1.73 (0.77–3.85)	0.17
NICU (days) if admitted	7.8 (1 - 32)	7.7 (1 - 31)		0.51
Birthweight (grams)	3247 (1935–4320)	3420 (1572–4900)		0.03
GA at birth (days)	262 (217–277)	275 (233–301)		< 0.01
- GA: ≥37+0 (weeks)	59 (84.1)	112 (84.5)	0.88 (0.38–2.12)	0.84
- GA: 34+0–36+6 (weeks)	8 (11.3)	10 (7.6)	1.55 (0.50–4.60)	0.44
- GA: 28+0–33+6 (weeks)	3 (4.2)	3 (2.3)	1.90 (0.25–14.50)	0.42
- GA: 22+0–27+6 (weeks)	0	0		
- GA: missing		1 (0.8)		

Gynækologisk Morbiditet

	Cases (n=174)	Controls (n=269)	OR (95% CI)	P-value
Diagnosis				
Meno/Metrorrhagia	19 (10.9)	32 (11.8)	0.91 (0.47–1.72)	0.87
Dysmenorrhea	2 (1.1)	5 (1.9)	0.61 (0.06–3.81)	0.71
Fibroma uteri	2 (1.1)	4 (1.5)	0.77 (0.06–5.44)	1.00
Infertility	6 (3.4)	2 (0.7)	4.77 (0.84–48.7)	0.06
Genital prolapse	0	8 (3.0)		0.02
Ileus/Adhesions	7 (4.0)	0		< 0.01
Procedure				
Hysterectomy	6 (3.4)	10 (3.7)	0.93 (0.27–2.87)	1.00
Hysteroscopy	12 (7.0)	11 (4.0)	1.73 (0.68–4.45)	0.20
Sterilization	14 (8.0)	12 (4.5)	1.87 (0.78–4.55)	0.15

- Risikoen for uterusruptur hos kvinder med tidligere komplet uterusruptur er ca. 8%
- 1 perinatalt dødsfald blandt 70 fødsler efter GA 22
- Der er måske en øget risiko for spontan abort i 1. trimester.



Der er ikke indikation for at fraråde en ny graviditet