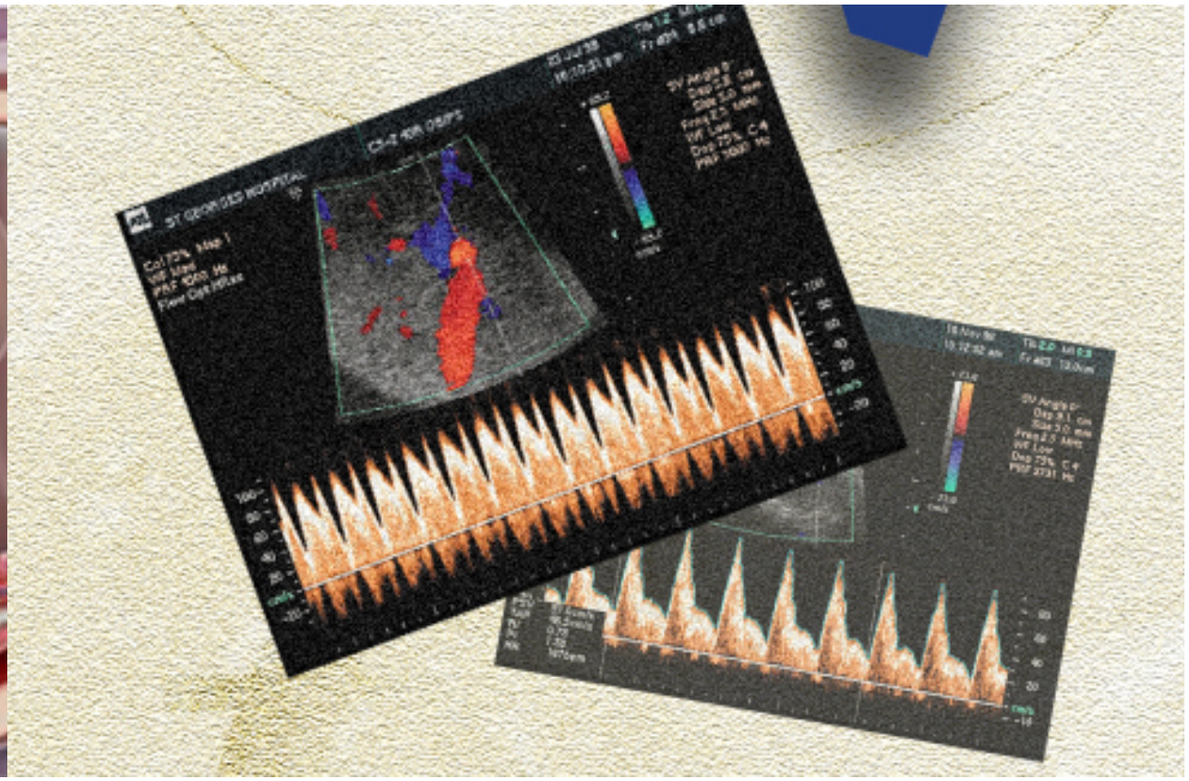
S I T U

Synnytysten ja naistentautien klinikka
OYS







Sektioarven avautuminen

UUTTA RASKAUTTA SUUNNITELTAESSA

Aydin Tekay - 20.4.2012 - Helsinki

Sidonnaisuudet
Ei ole

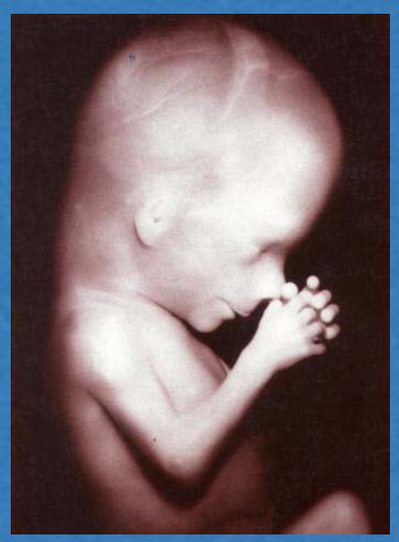
Osastonylilääkäri
Synnytysosasto & SITU
OYS



Tausta



Sektioarpi uä:ssä



Uusi raskaus



Yhteenveto

- Oireilu ilman raskautta
- Kohturepeämä uudessa raskaudessa tai synnytyksessä

Hypoteesi

defekti aiheuttaa kohturepeämän seuraavassa raskaudessa tai synnytyksessä

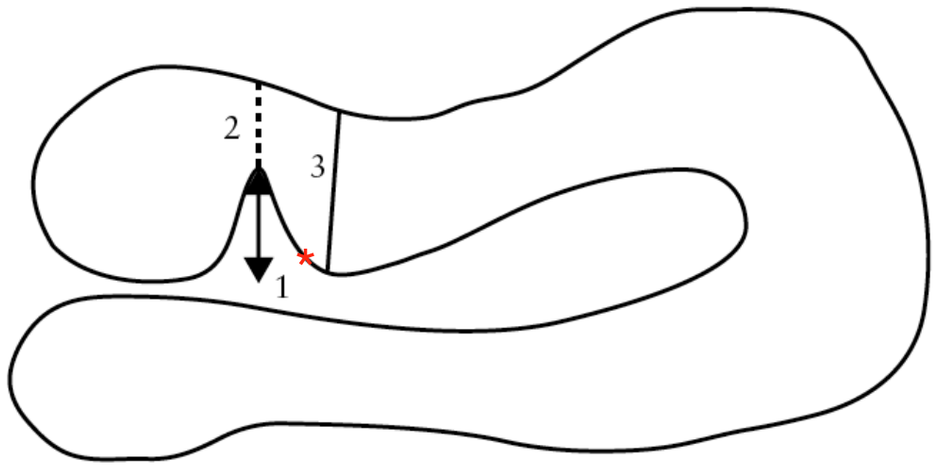
Kysymykset

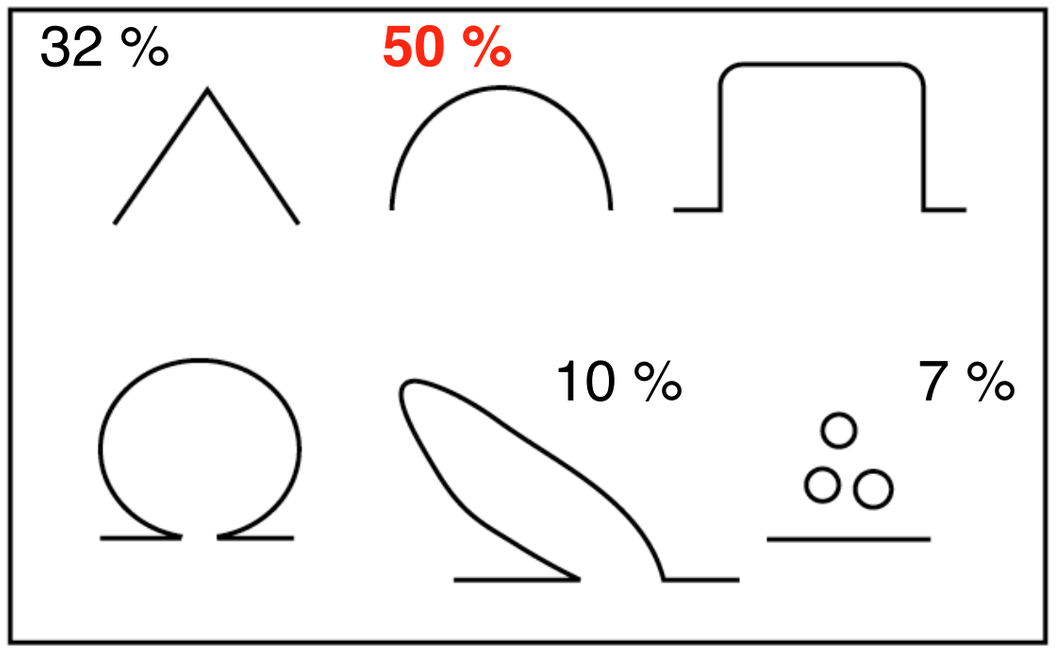
1. Kuinka usein kohtu repeää aiemmin sektoiduilla?
2. Kuinka varaallista on kohturepeämä äidille?
3. Kuinka varaallista on kohturepeämä sikiölle?



Sektioarpi uä:ssä

Alkuraskaus





Dehiscence

*1 = >1 mm

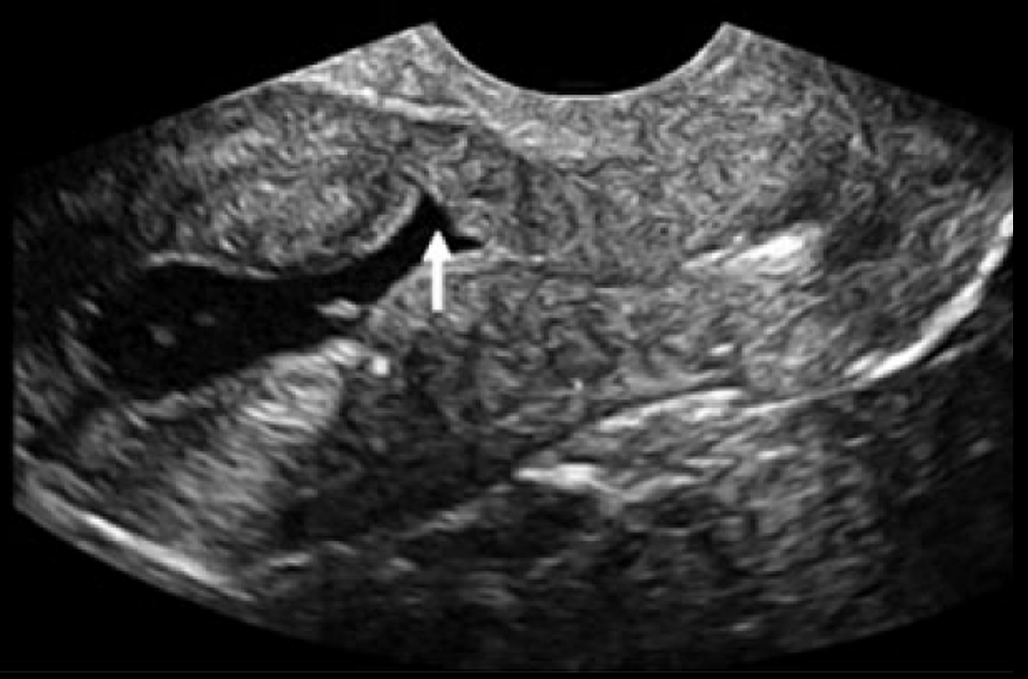
TVUÄ 19-24%
TSSG 54-100%
SEKTIO 0.7%

Niche

Scar defect

Bij de Vaate 2011







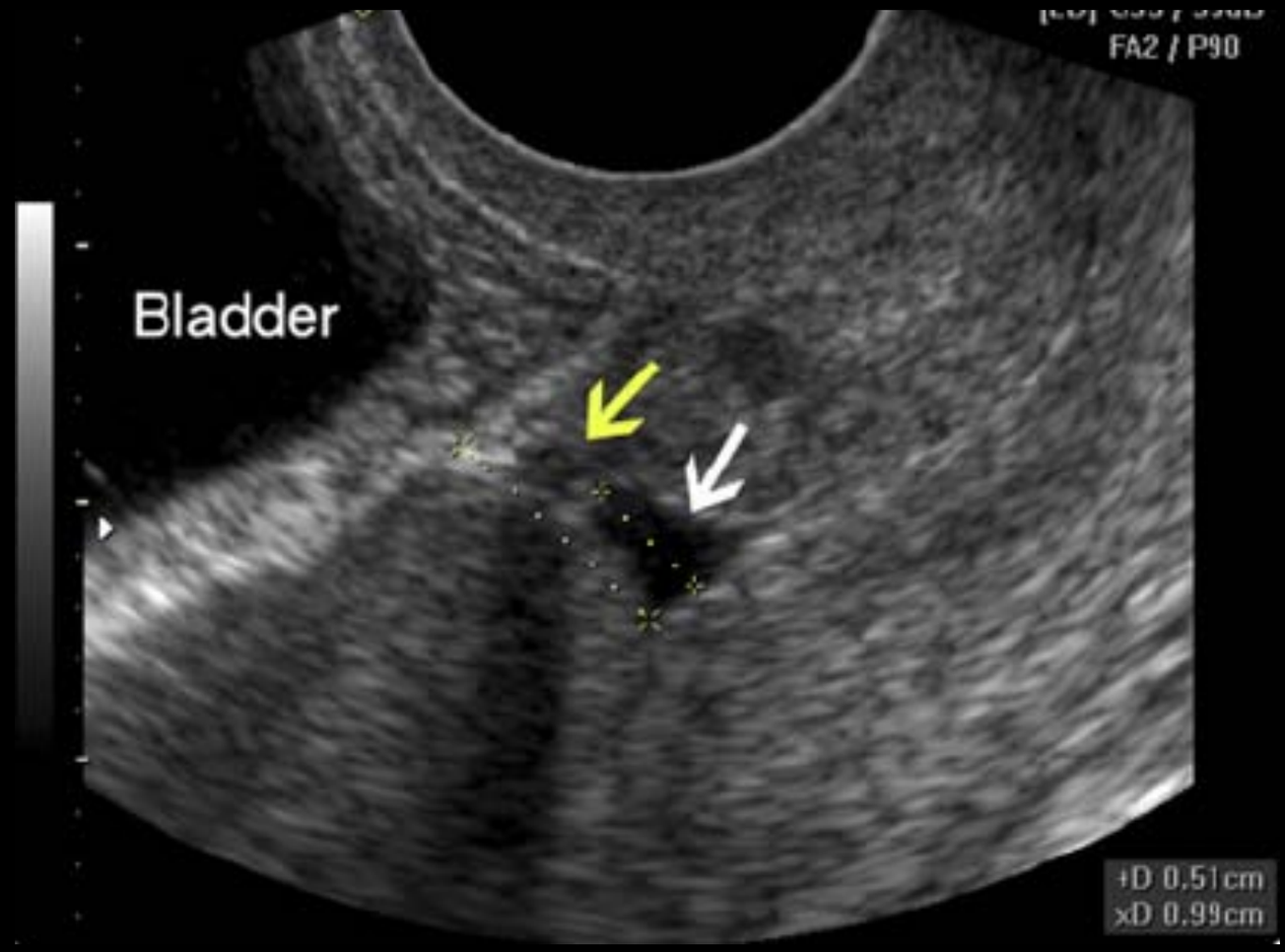
Bij de Vaate 2011





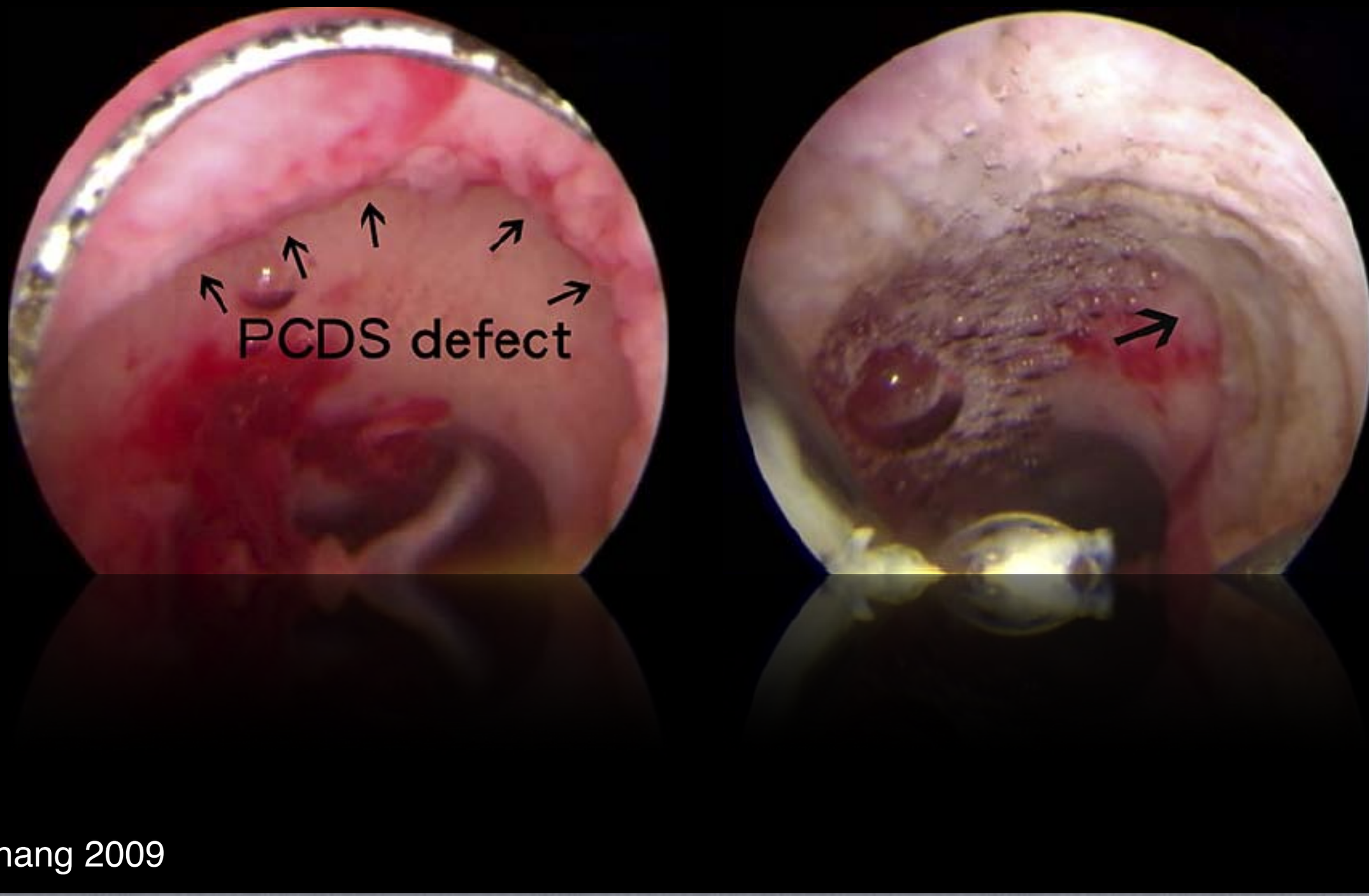
Osser 2009, Osser 2010

Hysteroskopia



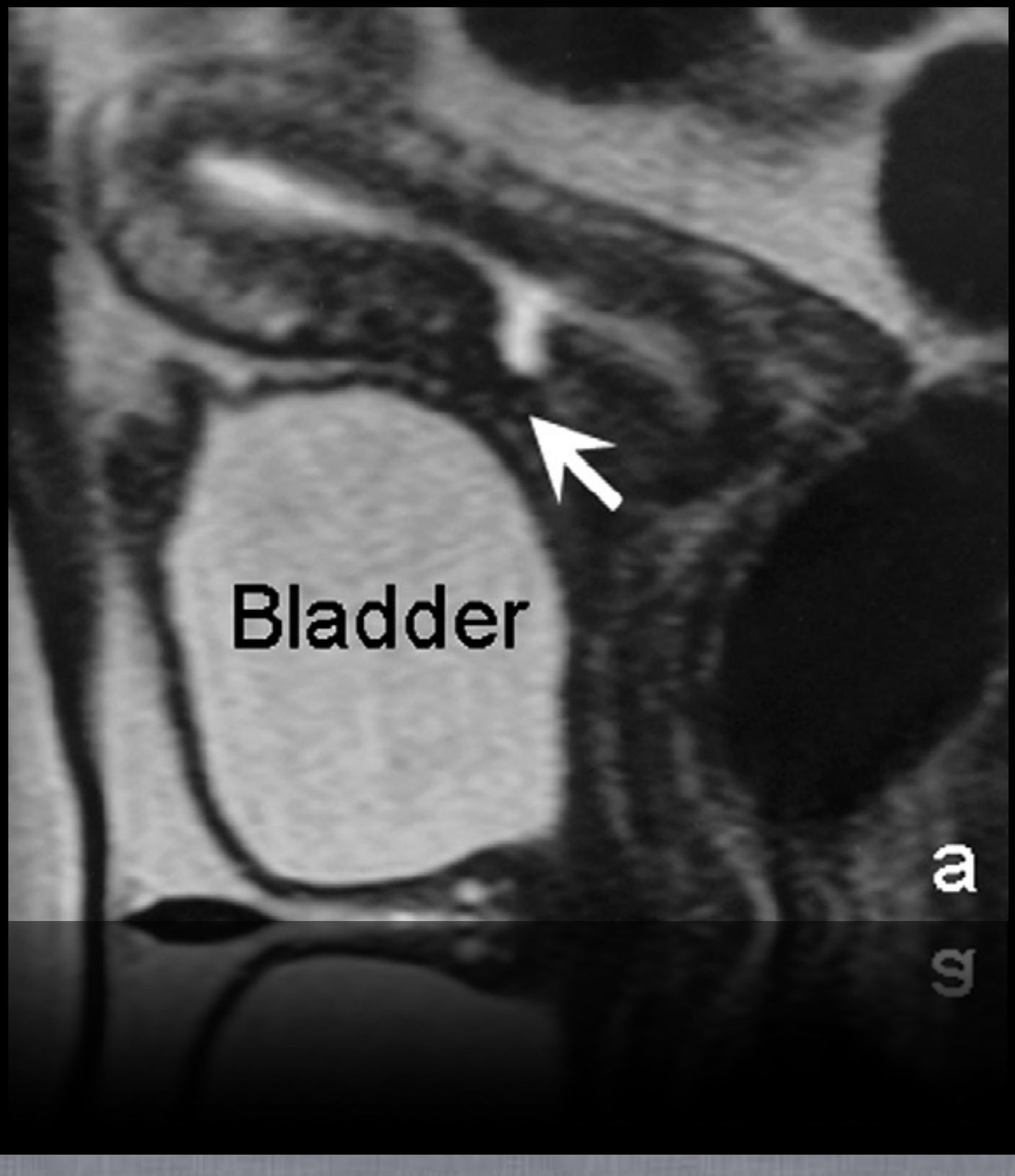
* Chang 2009

Hysteroskopia

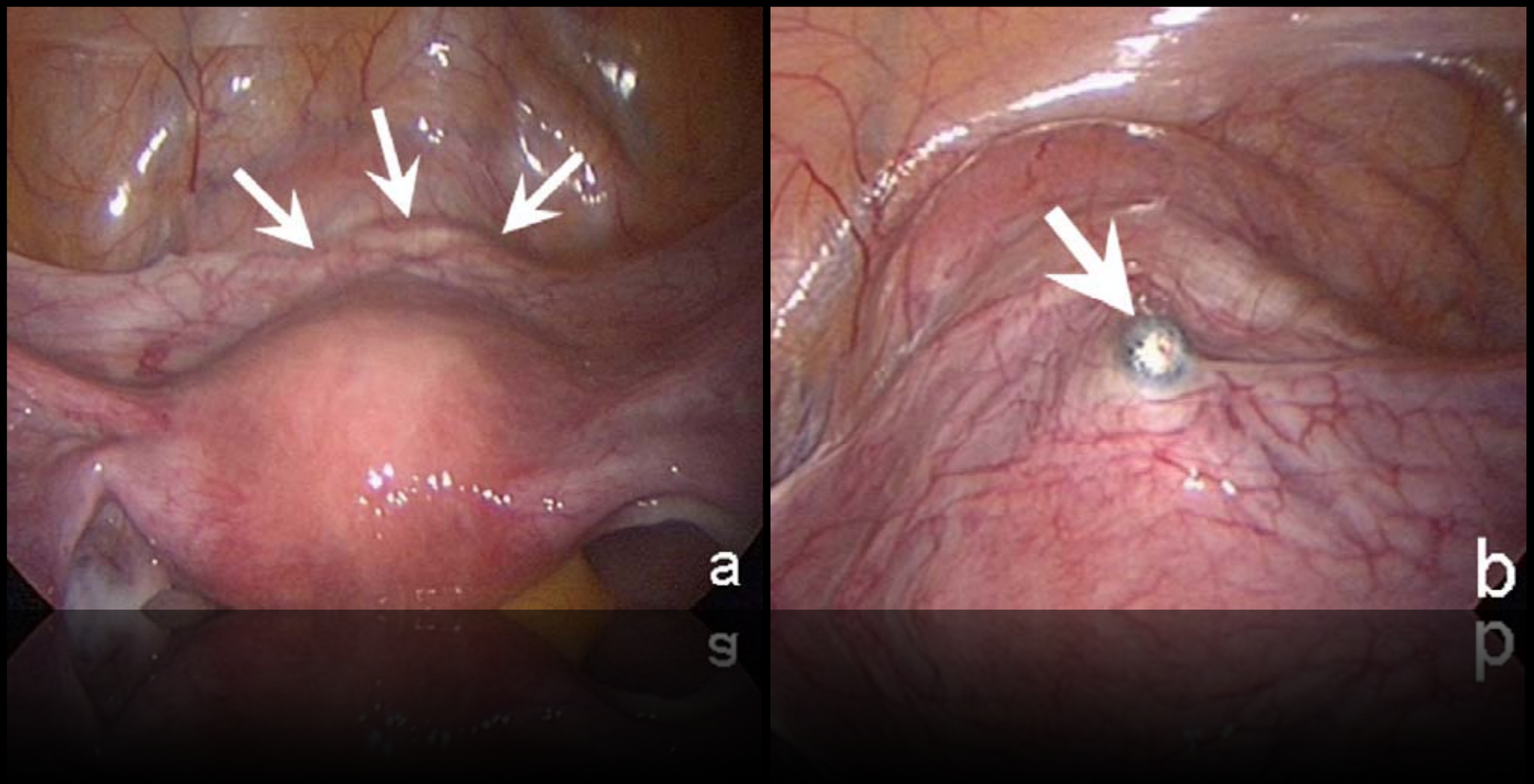


* Chang 2009

MRI

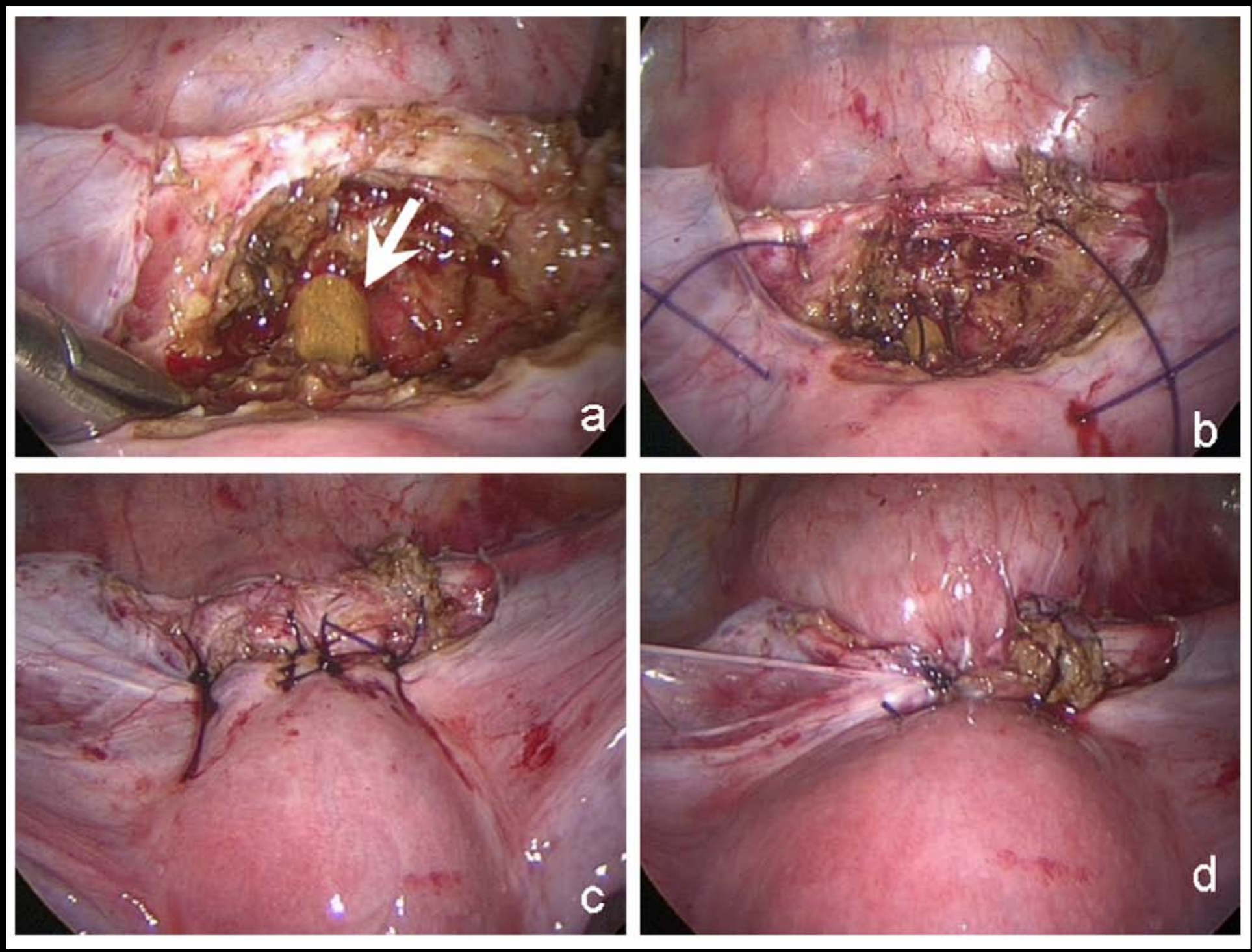


Laparoskopia

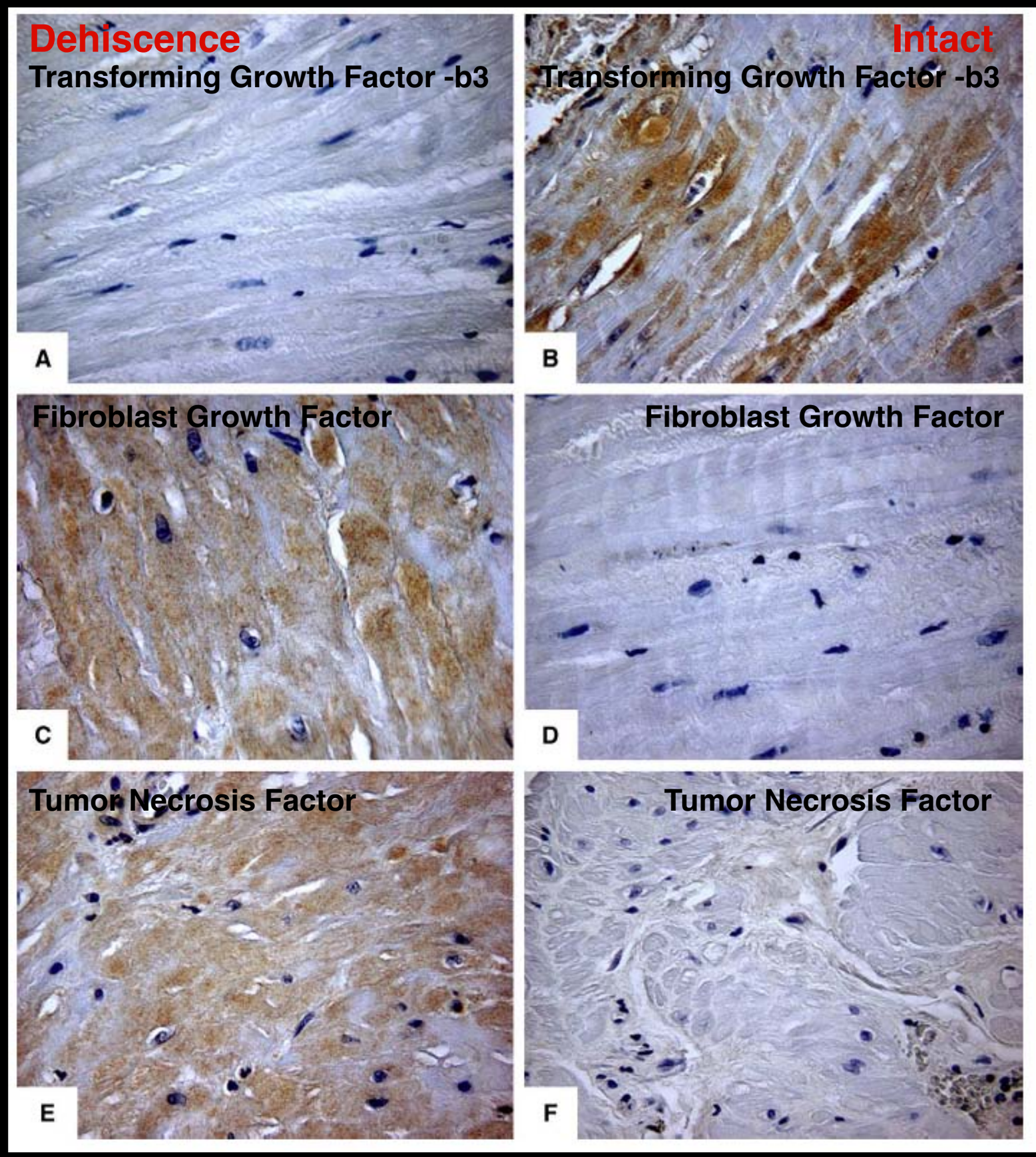


* Donnez 2008

Laparoskopia

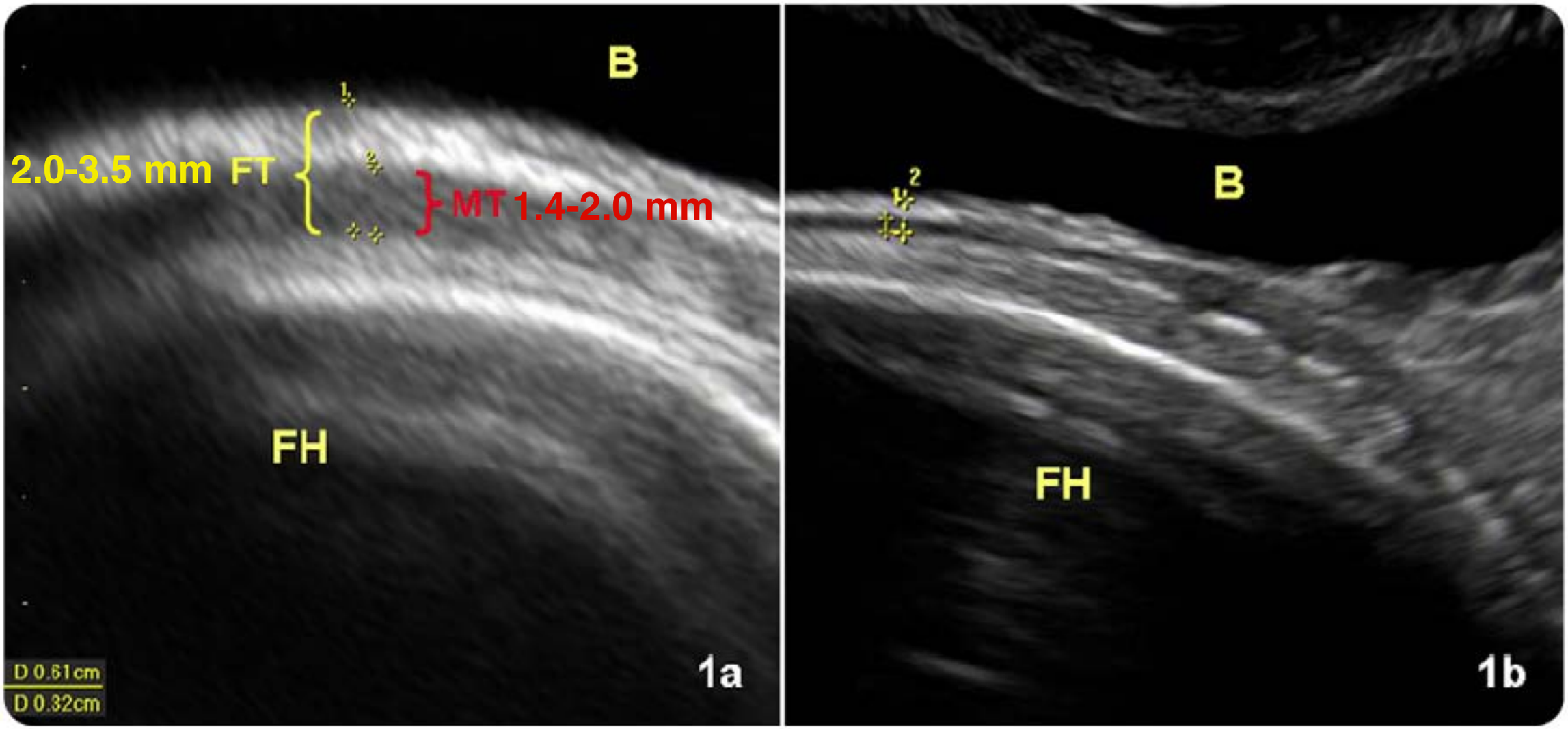


* Donnez 2008


Dehiscence
Transforming Growth Factor -b3
A
Intact
Transforming Growth Factor -b3
B
Fibroblast Growth Factor
C
Fibroblast Growth Factor
D
Tumor Necrosis Factor
E
Tumor Necrosis Factor
F

* Pollio 2005

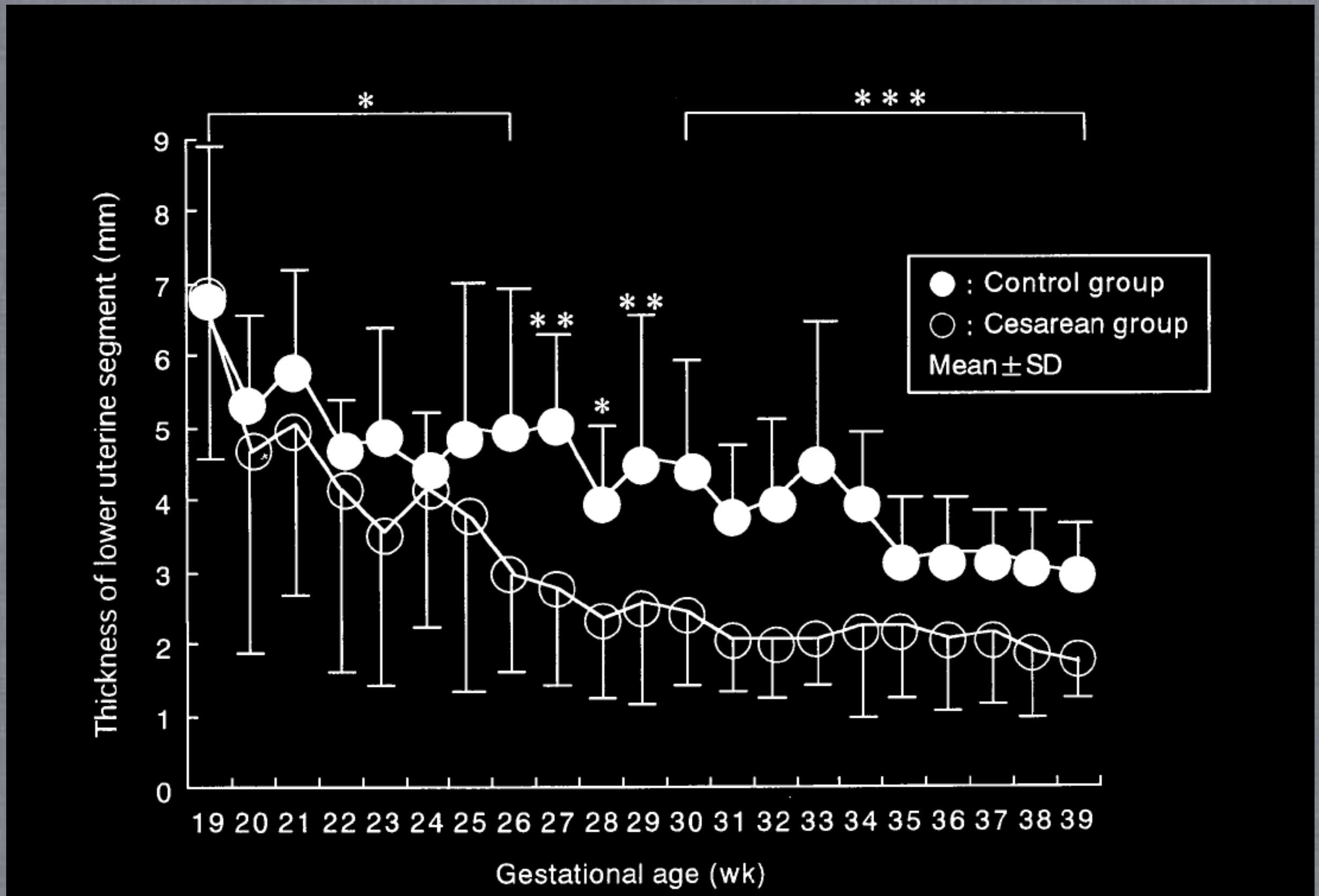
Loppuraskaus



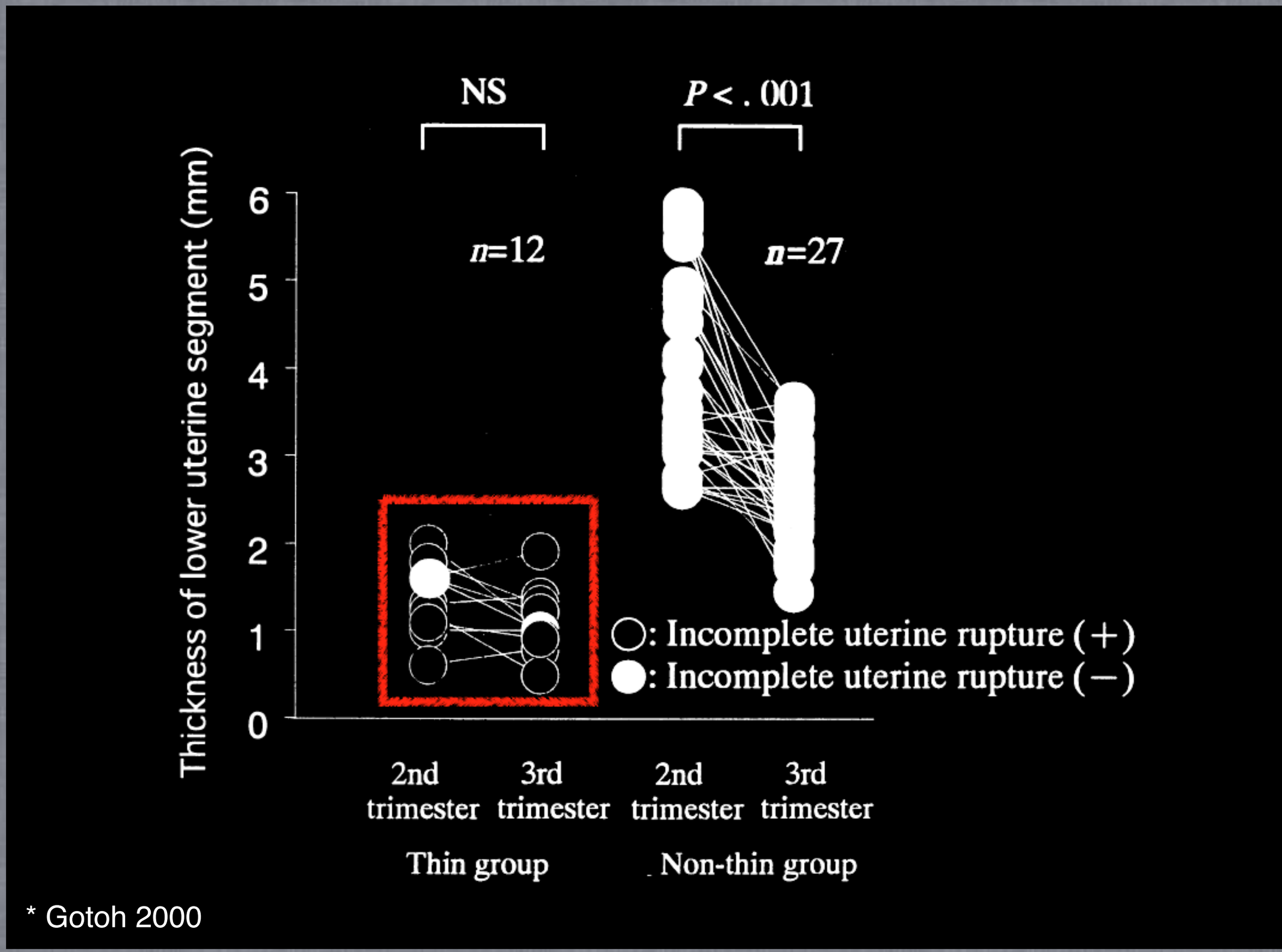
A, The first case had a full lower uterine segment thickness (*FT*) of 6.1 mm and a myometrial thickness (*MT*) of 3.2 mm. **B,** In the second case, the lower uterine segment was much thinner with a full thickness of 1.7 mm and a myometrial thickness of 0.5 mm.

B, bladder; *FH,* fetal head.

Bujold. Prediction of complete uterine rupture. Am J Obstet Gynecol 2009.


*
* * *
9
8
7
6
5
4
3
2
1
0
Thickness of lower uterine segment (mm)
* *
* *
*
● : Control group
○ : Cesarean group
Mean ± SD
19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
Gestational age (wk)

* Gotoh 2000


NS
P < . 001
n=12
n=27
Thickness of lower uterine segment (mm)
6
5
4
3
2
1
0
○: Incomplete uterine rupture (+)
●: Incomplete uterine rupture (−)
2nd trimester
3rd trimester
2nd trimester
3rd trimester
Thin group
Non-thin group

* Gotoh 2000

Potilas-Tapauksia



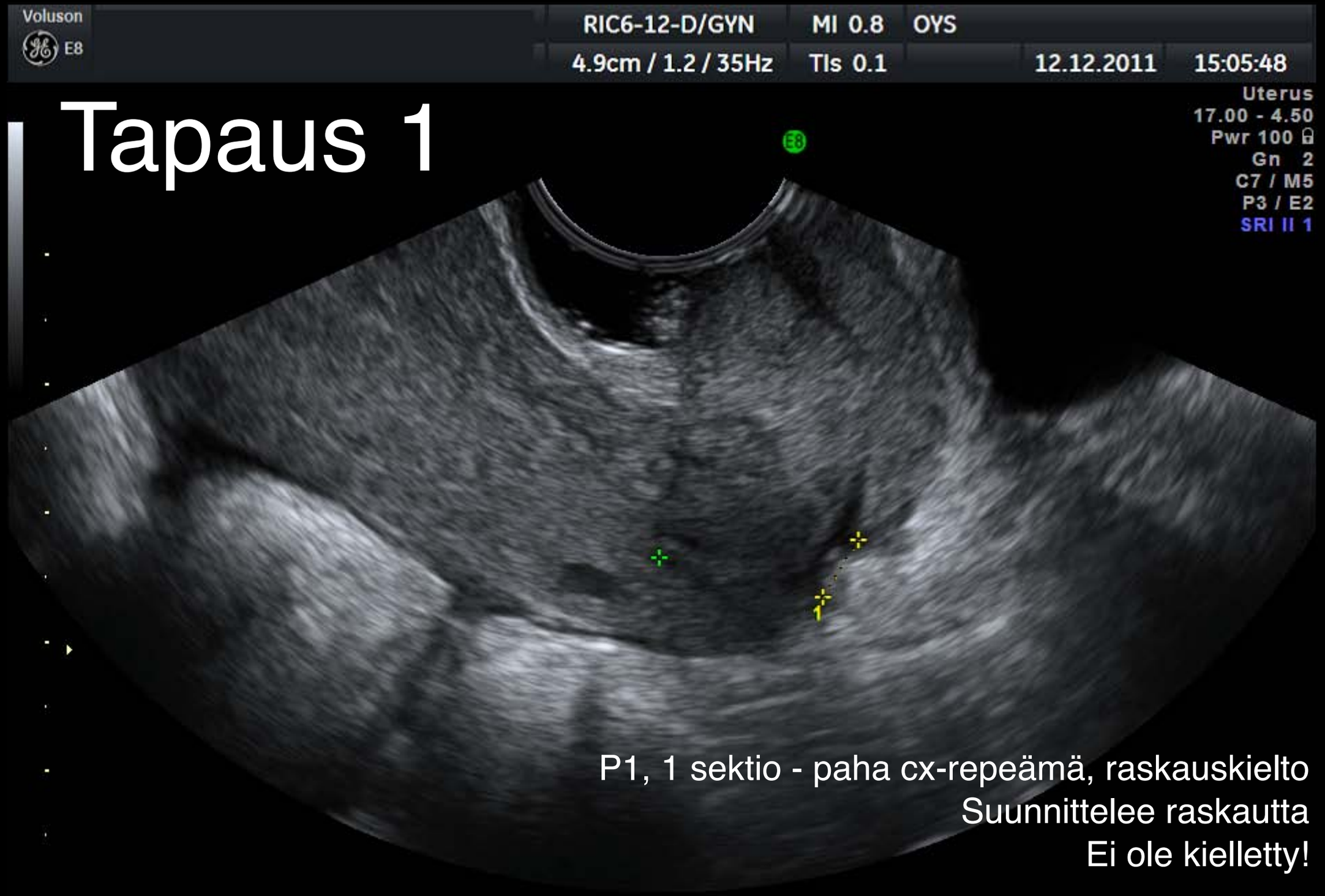
www.tekay.fi

Tapaus 1



P1, 1 sektio - paha cx-repeämä, raskauskielto
Suunnittelee raskautta
Ei ole kielletty!

Tapaus 1



P1, 1 sektio - paha cx-repeämä, raskauskielto
Suunnittelee raskautta
Ei ole kielletty!

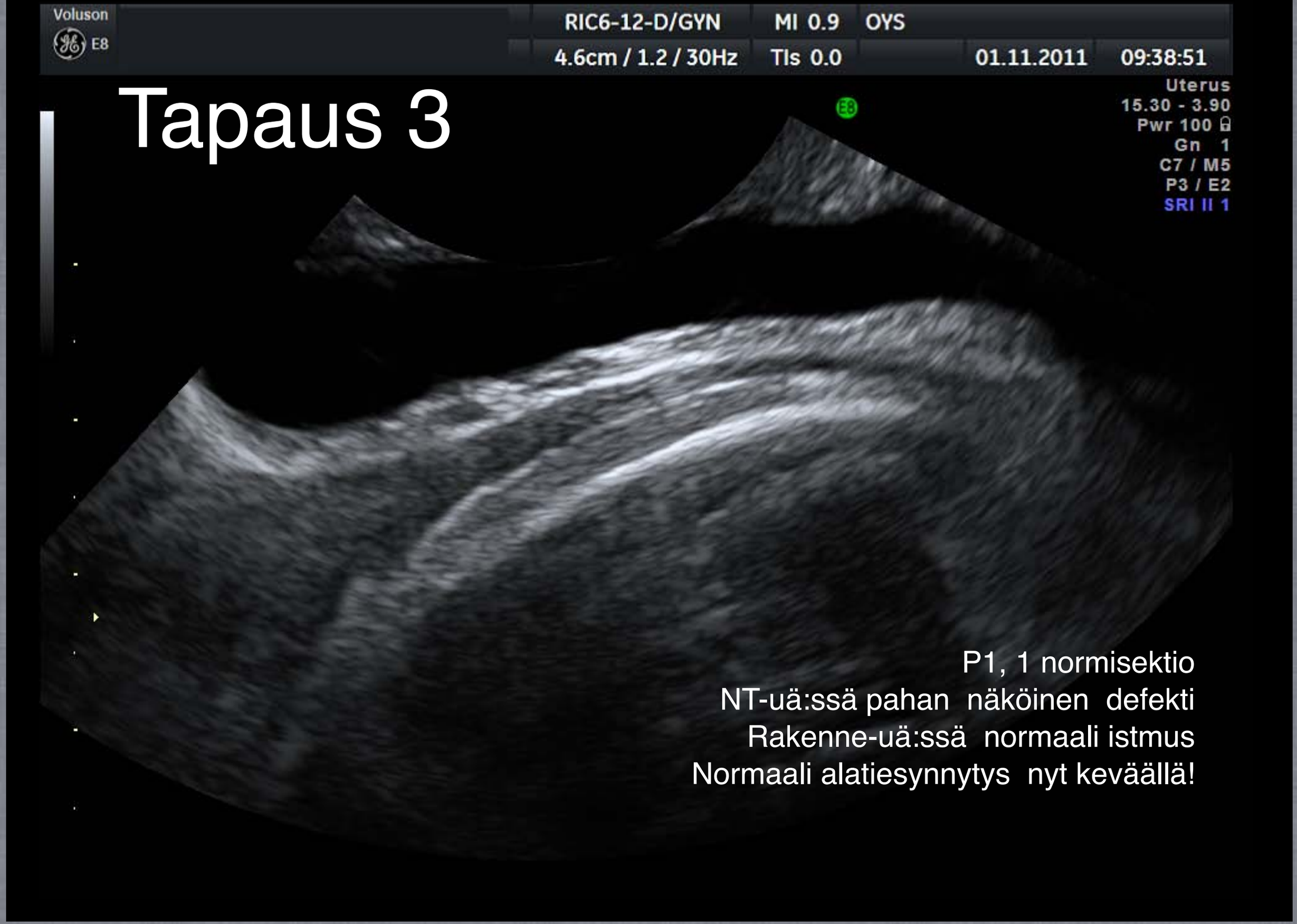
Tapaus 2



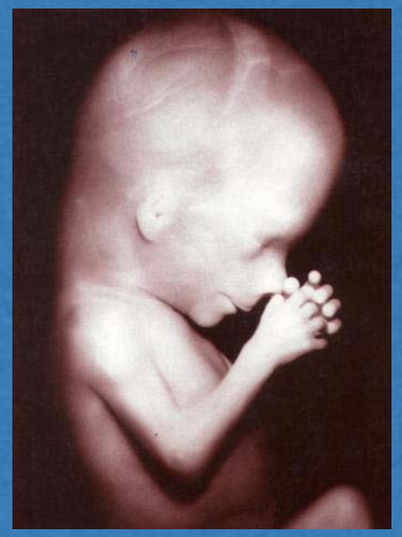
P5, 5 normisektiota
Viimeksi istmus ok, suositeltu 1 v tauko
Suunnittelee raskautta

Leo Mäkäräisen luvalla

Tapaus 3



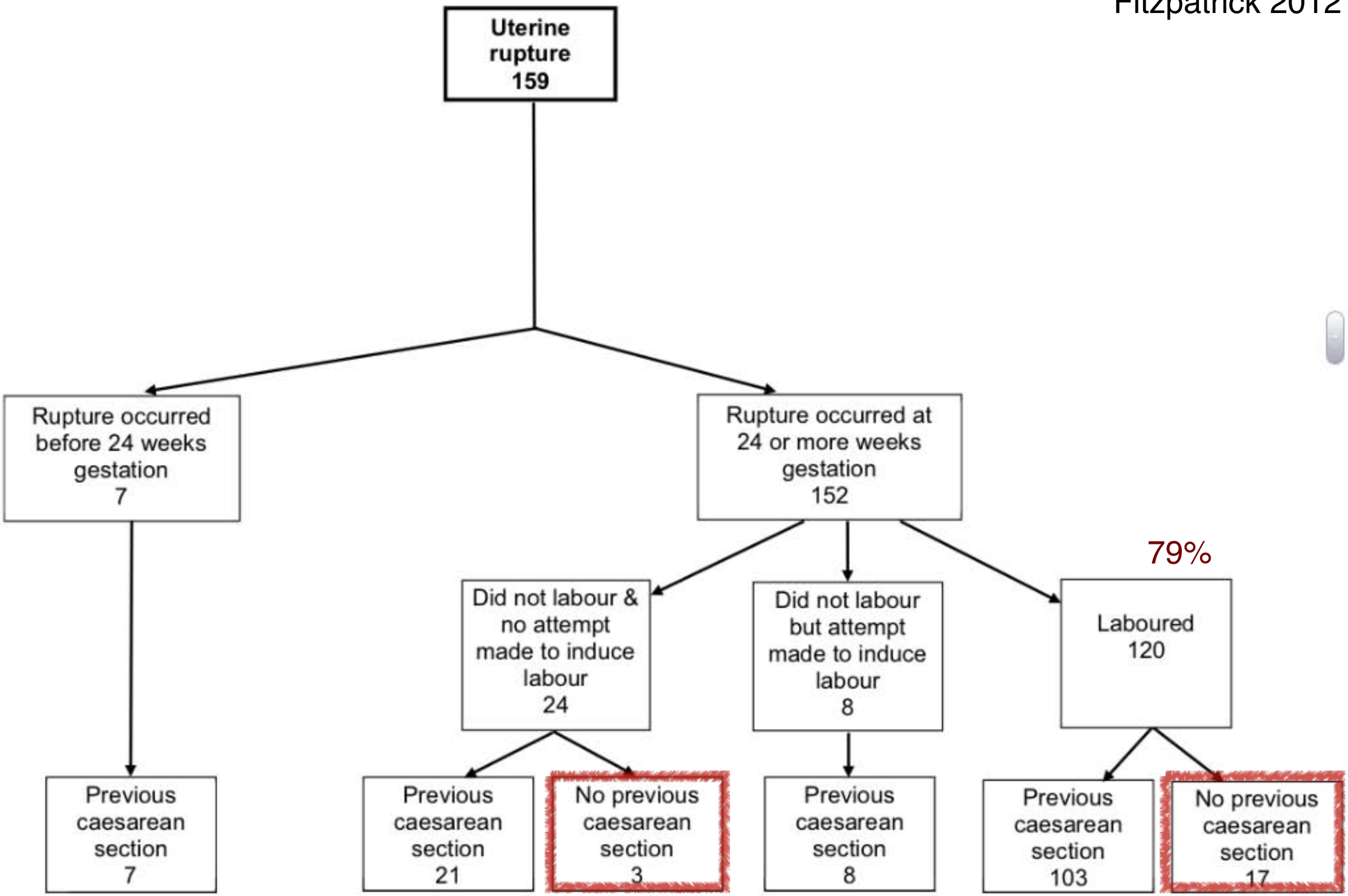
P1, 1 normisektio
NT-uä:ssä pahan näköinen defekti
Rakenne-uä:ssä normaali istmus
Normaali alatiesynnytys nyt keväällä!



Uusi raskaus

1. Kuinka usein kohtu repeää aiemmin sektoiduilla?

Fitzpatrick 2012

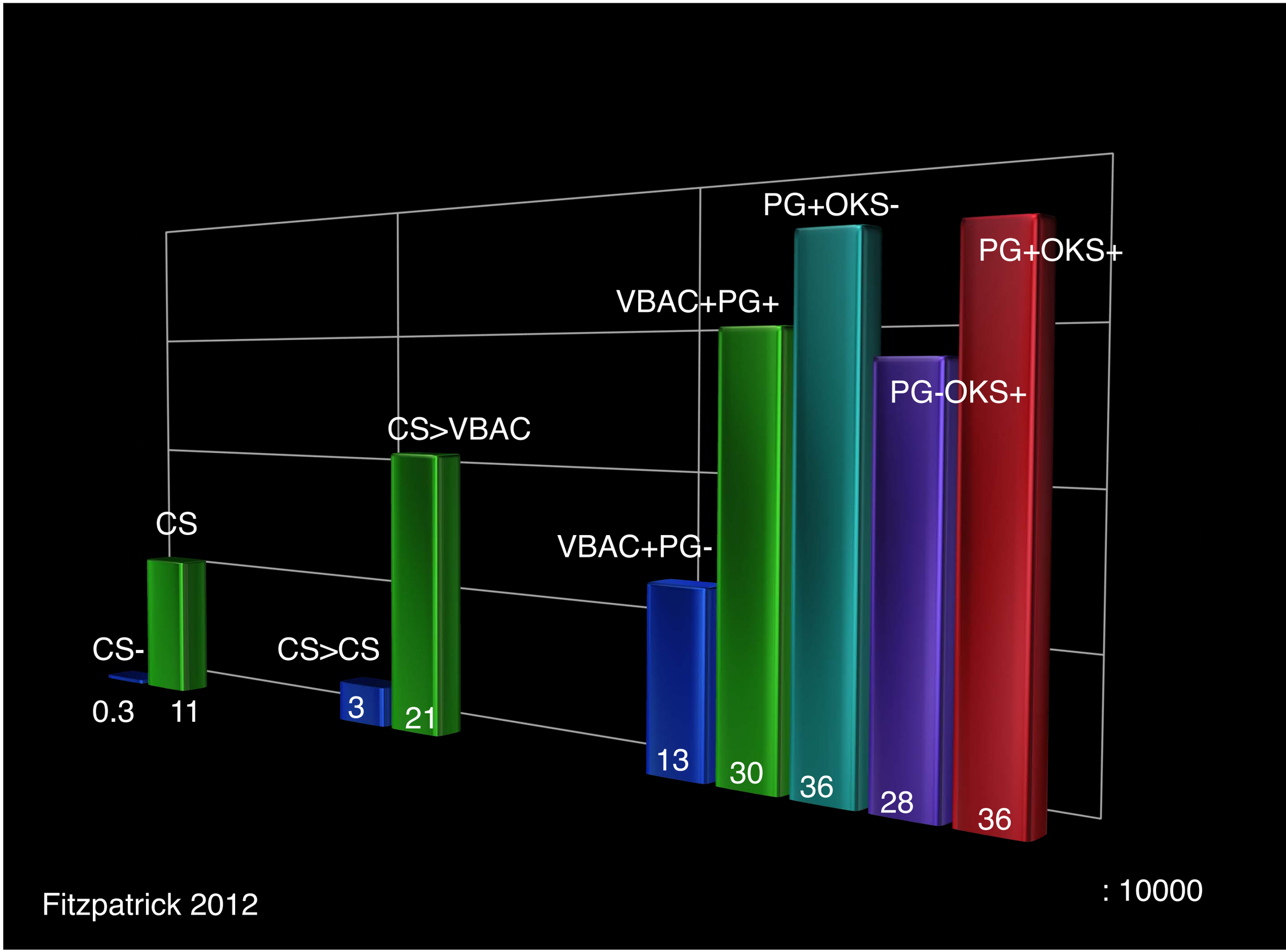


79%

5 AAP

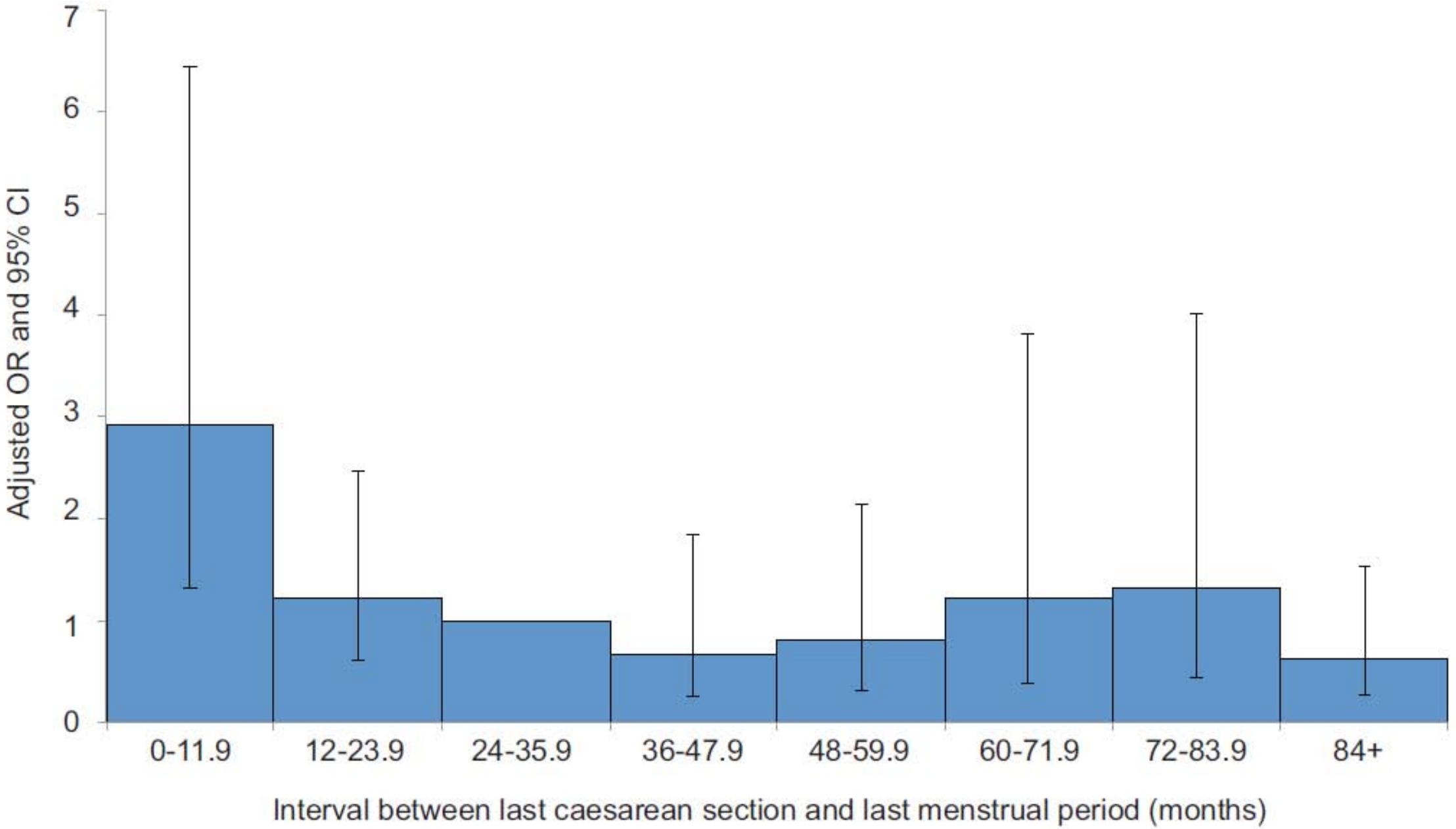
Previa 24x

13%


CS-
CS
CS>CS
CS>VBAC
VBAC+PG-
VBAC+PG+
PG-OKS+
PG+OKS-
PG+OKS+
0.3
11
3
21
13
30
36
28
36
Fitzpatrick 2012
: 10000

	Tapaus	Verrokki				
Previous caesarean uterine closure type(s)						
All double	75 (90)	241 (91)	1			
All single	5 (6)	17 (6)	0.95 (0.34–2.65)	0.9145		
Mixture of double and single or other closure type	3 (4)	7 (3)	1.38 (0.35–5.46)	0.6488		
Previous uterine surgery						
No	124 (90)	394 (88)	1		1	
Yes	14 (10)	52 (12)	0.86 (0.46–1.60)	0.6237	0.92 (0.43–1.96)	0.8325
Previous uterine perforation						
No	137 (100)	446 (100)				
Yes	0 (0)	1 (0)				
Current pregnancy						
Twin pregnancy						
No	139 (100)	444 (99)				
Yes	0 (0)	4 (1)				
Interval between last caesarean section and last menstrual period (mo)						
24 or more	71 (52)	294 (67)	1		1	
12–23	35 (26)	99 (22)	1.46 (0.92–2.33)	0.1078	1.38 (0.80–2.38)	0.2488
Less than 12	31 (23)	48 (11)	2.67 (1.59–4.50)	0.0002	3.12 (1.62–6.02)	0.0007
Placenta praevia						
No	136 (98)	445 (99)	1		1	
Yes	3 (2)	3 (1)	3.27 (0.65–16.40)	0.1494	28.19 (4.03–197.39)	0.0008
Macrosomia (birthweight 4,000 g or more)						
No	117 (89)	382 (86)	1		1	
Yes	14 (11)	62 (14)	0.74 (0.40–1.36)	0.332	0.85 (0.42–1.73)	0.6614

Fitzpatrick 2012



Fitzpatrick 2012

Table 2. Outcome of VBAC-2 for all included studies

Study reference	Numbers VBAC-2	VBAC success	Uterine Rupture	Transfusion	Hysterectomy	Asphyxial injury/PND**	NNU
Macones[25]	1082	807 (74.6)	20 (1.8)	10 (0.92)			
Landon[24]	975	648 (66)	9 (0.9)	31 (3.2)	6 (0.6)	1 (0.15)	75 (11.2)
Garg[18]	100	66 (66)	0 (0.0)	0	0		
Spaan[31]	59	49 (83)	1 (1.8)	4 (6.7)	1 (1.7)	0 (0.0)	15 (34.9)
Bretelle[11]	96	63 (65.6)	0 (0.0)	2 (2.1)	1 (1.04)	0 (0.0)	0 (0.0)
Caughey[12]	134	83 (62)	5 (3.7)		1 (0.75)		
Asakura[9]	302	194 (71)	3 (1)		1 (0.33)	1 (0.33)	
Chattopadhyay[13]	115	103 (89)	1 (0.7)		1 (0.89)		
Granovsky-Grisarau[20]	26	19 (73)	0 (0.0)	0	0 (0.0)	0 (0.0)	0 (0.0)
Miller[26]	1827	1376 (75)	32 (1.8)			1 (0.05)	
Flamm[16]	245	168 (69%)	NA				
Hansell[22]	35	27 (77)	0 (0.0)	1 (2.8)	0 (0.0)		
Phelan[28]	501	346 (69)	0		1 (0.2)		
Novas[27]	36	29 (80)	(0.0)		0		
Pruett[30]	55	25 (45)	3* (5.4)	1 (1.8)	2 (3.6)		
Farmakides[15]	57	44 (77)	0 (0.0)		0		
Porreco[29]	21	17 (81)	0 (0.0)		0		
Total	5666	4064 (71.7)	74/5421 (1.36)	49/2428 (2.01)	14/2512 (0.55)	3/3285 (0.09)	90/1156 (7.78)

Values in parenthesis are expressed in percentage.
*2/3 uterine ruptures diagnosed by palpation after successful vaginal delivery.
**Prelabour stillbirths and postnatal deaths unrelated to mode of delivery (e.g. prematurity related) were not included.

Tahseen 2009

Lukujen valossa

	VBAC	ERC	Induktio*
Läpi raskauden	0.3 %	0.03 %	1.5 %
Loppuraskaus	0.8 %	0.02 %	3 %
1 CS	0.6 %		
>1CS	1.6 %		
1 alatiesynnytys	0.6 %		

* Oksitosiini turvallinen

Lukujen valossa

Muut riskitekijät (näyttöaste heikko)

Klassinen tai matalapystyviilto
Epäkypsä kerviks
Obesiteetti
Synnytysten väli <12-24 kk
Sulku yhdessä kerroksessa
Sulku lukitulla ompeleella
Sp >4000g

Fitzpatrick 2012

2. Kuinka varaallista on kohturepeämä äidille?

Lukujen valossa

Kohdun poisto	9 %
Lisäksi joku muu elin	6 %
Repeämä seuraavassa synnytyksessä	6 %
Veren siirto	30 %
Muu	43 %

Fitzpatrick 2012

3. Kuinka varaallista on kohturepeämä sikiölle?

Lukujen valossa

PNM	124:1000 (vs. 7.5:1000) RR 16.5
Enkefalopatia	6.4 %
RDS	4 %
NICU	41 %
Aika NICU:ssa	3 vrk

Fitzpatrick 2012

RASKAUS

- Istukan paikka (accreta 30%!)
- Normaali raskauden seuranta
- Loppuraskauden käynti äitiyspkl:lla
- Arpi-uä harkinnan mukaan!

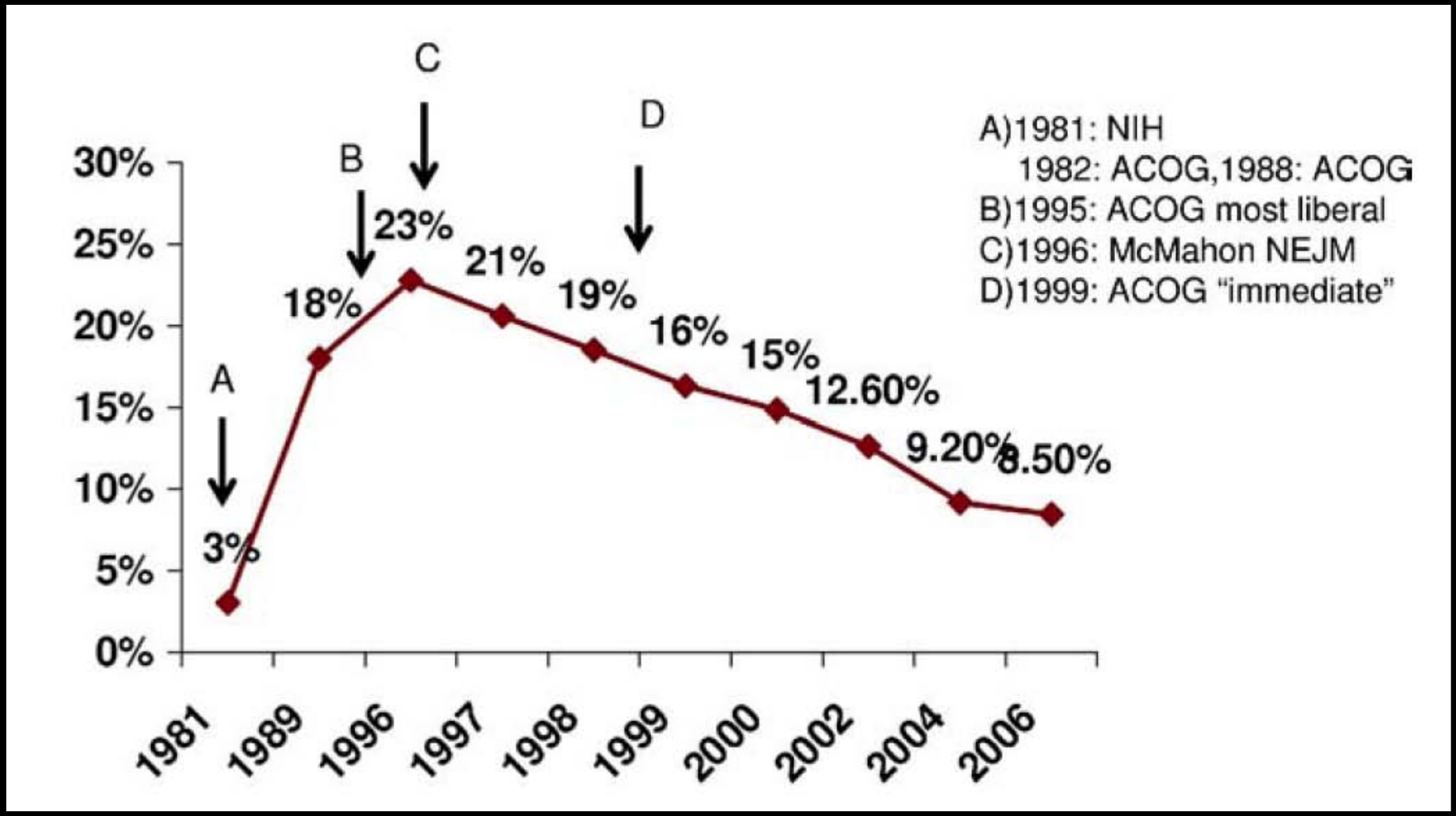
SYNNYTYS

Lukujen valossa

	Sektiofrekvenssi	1 aiempi sektio	VBAC
USA	37 %	?	8.5 %
UK	24 %	9 %	33 %
SUOMI 2010	16 %	9 %	52.9 %

Fitzpatrick 2012

VBAC tai ERC



NIH Concensus 2010

Table 2. Outcome of VBAC-2 for all included studies

Study reference	Numbers VBAC-2	VBAC success	Uterine Rupture	Transfusion	Hysterectomy	Asphyxial injury/PND**	NNU
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Garg[18]	100	66 (66)	0 (0.0)	0	0		
Spaan[31]	59	49 (83)	1 (1.8)	4 (6.7)	1 (1.7)	0 (0.0)	15 (34.9)
Bretelle[11]	96	63 (65.6)	0 (0.0)	2 (2.1)	1 (1.04)	0 (0.0)	0 (0.0)
Caughey[12]	134	83 (62)	5 (3.7)		1 (0.75)		
Asakura[9]	302	194 (71)	3 (1)		1 (0.33)	1 (0.33)	
Chattopadhyay[13]	115	103 (89)	1 (0.7)		1 (0.89)		
Granovsky-Grisarau[20]	26	19 (73)	0 (0.0)	0	0 (0.0)	0 (0.0)	0 (0.0)
Miller[26]	1827	1376 (75)	32 (1.8)			1 (0.05)	
Flamm[16]	245	168 (69%)	NA				
Hansell[22]	35	27 (77)	0 (0.0)	1 (2.8)	0 (0.0)		
Phelan[28]	501	346 (69)	0		1 (0.2)		
Novas[27]	36	29 (80)	(0.0)		0		
Pruett[30]	55	25 (45)	3* (5.4)	1 (1.8)	2 (3.6)		
Farmakides[15]	57	44 (77)	0 (0.0)		0		
Porreco[29]	21	17 (81)	0 (0.0)		0		
Total	5666	4064 (71.7)	74/5421 (1.36)	49/2428 (2.01)	14/2512 (0.55)	3/3285 (0.09)	90/1156 (7.78)

Values in parenthesis are expressed in percentage.
*2/3 uterine ruptures diagnosed by palpation after successful vaginal delivery.
**Prelabour stillbirths and postnatal deaths unrelated to mode of delivery (e.g. prematurity related) were not included.

Tahseen 2009

Table 4. Outcome of studies comparing VBAC-2 versus Repeat (third) Caesarean Section (RCS)

Study reference		No. cases	Uterine rupture	Transfusion	Hysterectomy	Fever	Peri-natal death	NNU admission
Macones[25]	VBAC-2	1082	19 (1.76)	10 (0.92)		96 (8.8)		
	CS	2888	1 (0.03)	34 (1.18)		366 (12.7)		
Landon[24]	VBAC-2	975	9 (0.9)	31 (3.2)	6 (0.6)	30 (3.1)	1 (0.1)	75 (11.2)
	CS	6035	0 (0%)	93 (1.5)	27 (0.4)	129 (2.1)	1 (0.02)	514 (9.1)
Spaan[31]	VBAC-2	59	1 (1.7)	4 (6.7)	1 (1.7)	5 (8.4)		15 (35)
	CS	187	2 (1.06)	19 (10)	0 (0)	17 (9)		39 (23)
Chattopadhyay[13]	VBAC-2	115	1 (0.8)	1 (0.8)	1 (0.8)			
	CS	1006	7 (0.7)	15 (1.4)	15 (1.4)			
Granovsky-Grisarau[20]	VBAC-2	26	0 (0)	0 (0)	0 (0)	2 (7.7)	0 (0)	0 (0)
	CS	26	0 (0)	0 (0)	0 (0)	5 (19)	0 (0)	0 (0)
Hansell[22]	VBAC-2	35	0 (0)	1 (2.8)	0 (0)	4 (11.4)		
	CS	135	1 (0.7)	11 (8)	0 (0)	39 (28)		
Phelan[28]	VBAC-2	501	0 (0)		1 (0.2)	55 (11)		
	CS	587	1 (0.17)		7 (1.2)	74 (12)		
Novas[27]	VBAC-2	36	1 (2.7)		0 (0)			
	CS	33	0 (0)		2 (6)			
Total	VBAC-2	2829	31 (1.09)	47 (1.68)	9 (0.40)	192 (6.03)	1 (0.09)	90 (8.49)
	CS	10 897	12 (0.11)	172 (1.67)	51 (0.63)	630 (6.39)	1 (0.01)	553 (8.85)

Tahseen 2009

Table 2. Primary outcomes.

Outcome	RCT				Patient Preference				Planned ERC Group ($n=1,108$)		Planned VBAC Group ($n=1,237$)		Adjusted RR (95% CI)[a]		p-Value
	Planned ERC ($n=10$)		Planned VBAC ($n=12$)		Planned ERC ($n=1,098$)		Planned VBAC ($n=1,225$)								
	n	Percent	n	Percent	n	Percent	n	Percent	n	Percent	n	Percent	CI	Range	
Death or serious infant outcome[b]	0	(0.0)	0	(0.0)	10	(0.9)	30	(2.4)	10	(0.9)	30	(2.4)	0.39	(0.19–0.80)	0.011
Perinatal death	0	(0.0)	0	(0.0)	0	(0.0)	2	(0.2)	0	(0.0)	2	(0.2)			0.50
Stillbirth	0	(0.0)	0	(0.0)	0	(0.0)	2	(0.2)	0	(0.0)	2	(0.2)			
Neonatal death	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)			
Serious neonatal morbidity	0	(0.0)	0	(0.0)	10	(0.9)	28	(2.3)	10	(0.9)	28	(2.3)	0.41	(0.20–0.83)	0.014
Birth trauma	0	(0.0)	0	(0.0)	0	(0.0)	3	(0.2)	0	(0.0)	3	(0.2)			0.25
Seizures	0	(0.0)	0	(0.0)	1	(0.1)	1	(0.1)	1	(0.1)	1	(0.1)	1.11	(0.07–17.8)	1.00
Apgar ≤4 at 5 min	0	(0.0)	0	(0.0)	0	(0.0)	1	(0.1)	0	(0.0)	1	(0.1)			1.00
Cord pH<7.0	0	(0.0)	0	(0.0)	1	(0.1)	6	(0.5)	1	(0.1)	6	(0.5)	0.19	(0.02–1.54)	0.13
Cord blood base deficit ≥12 mmol/l	0	(0.0)	0	(0.0)	1	(0.1)	9	(0.7)	1	(0.1)	9	(0.7)	0.13	(0.02–1.06)	0.06
Stage 3 encephalopathy	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)			
NICU admission >4 d	0	(0.0)	0	(0.0)	4	(0.4)	7	(0.6)	4	(0.4)	7	(0.6)	0.64	(0.18–2.25)	0.48
Severe lung disease	0	(0.0)	0	(0.0)	2	(0.2)	1	(0.1)	2	(0.2)	1	(0.1)	2.23	(0.20–24.6)	0.61
Necrotising enterocolitis	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)			
Proven systemic infection	0	(0.0)	0	(0.0)	1	(0.1)	4	(0.3)	1	(0.1)	4	(0.3)	0.28	(0.03–2.49)	0.38

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Table 4. Labour and birth outcomes.

Outcome	*n* (%), Mean ± SD, or Median and Interquartile Range						Adjusted RR (95% CI)[a]		*p*-Value
	RCT		Patient Preference		Planned ERC Group (*n* = 1,108)	Planned VBAC Group (*n* = 1,237)			
	Planned ERC (*n* = 10)	Planned VBAC (*n* = 12)	Planned ERC (*n* = 1,098)	Planned VBAC (*n* = 1,225)			CI	Range	
Gestational age at birth (wk)	39.2±0.7	40.0±1.0	38.8±0.7	40.0±1.1	38.8±0.7	40.0±1.1	−1.1	(−1.2 to 1.01)	<0.001
Induction of labour	0 (0.0)	2 (16.7)	4 (0.4)	151 (12.3)	4 (0.4)	153 (12.4)	0.03	(0.01–0.08)	<0.001
Mode of birth									
Vaginal birth	2 (20.0)	7 (58.3)	23 (2.1)	528 (43.1)	25 (2.3)	535 (43.2)	0.06	(0.04–0.09)	<0.001
Caesarean section	8 (80.0)	5 (41.7)	1,075 (97.9)	697 (56.9)	1,083 (97.7)	702 (56.8)	1.67	(1.59–1.75)	<0.001
Elective caesarean section	5 (50.0)	4 (33.3)	966 (88.0)	330 (26.9)	971 (87.6)	334 (27.0)	3.10	(2.82–3.42)	<0.001
Emergency caesarean section									
Preference arm			109 (9.9)	367 (30.0)	109 (9.9)	367 (30.0)	0.32	(0.27–0.40)	<0.001
Randomised arm	3 (30.0)	1 (8.3)			3 (30)	1 (8.3)	3.60	(0.44–29.5)	0.19
Analgesia/anaesthesia	9 (90.0)	12 (100)	1,080 (98.4)	1,148 (93.7)	1,089 (98.3)	1,160 (93.8)	1.04	(1.02–1.06)	<0.001
Epidural	3 (30.0)	4 (33.3)	183 (16.7)	425 (34.7)	186 (16.8)	429 (34.7)	0.47	(0.41–0.55)	<0.001
Postpartum haemorrhage >500 ml	2 (20.0)	2 (16.7)	184 (16.8)	214 (17.5)	186 (16.8)	216 (17.5)	0.91	(0.76–1.09)	0.30
Postpartum infection	0 (0.0)	0 (0.0)	4 (0.4)	3 (0.2)	4 (0.4)	3 (0.2)	1.49	(0.33–6.64)	0.71
Length of stay (d)	5 (3–5)	4 (3–5)	5 (4–6)	4 (3–5)	5 (4–6)	4 (3–5)			<0.001
Length of stay >7 d	0 (0.0)	0 (0.0)	60 (5.5)	62 (5.1)	60 (5.4)	62 (5.0)	1.08	(0.76–1.54)	0.67
Infant birthweight (g)	3,401±475	3,534±425	3,462±451	3,571±495	3,462±451	3,571±494	−56	(−252 to 139.4)	0.57
Apgar score <7 at 5 min	0 (0.0)	0 (0.0)	3 (0.3)	8 (0.7)	3 (0.3)	8 (0.6)	0.48	(0.12–1.86)	0.29

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VBAC tai ERC

- Klassinen viilto & T-viilto (repeämäriski 5 - 15 %) > SEKTIO (LA)
- Matala poikkiviilto
  1 CS > VBAC (NTT 63-488 kpl sektiota)
  2 CS > SEKTIO tai VBAC (repeämäriski x 5)
- Dehiscence loppuraskaudessa > SEKTIO (LA tai aiemmin)
- Aiempi kohturepeämä (repeämäriski 6 %) > SEKTIO (LA)
- Jos potilas haluaa UUSINTASEKTIOTA siitä huolimatta, että on sopiva ehdokas VBAC:lle > SEKTIO (LA)



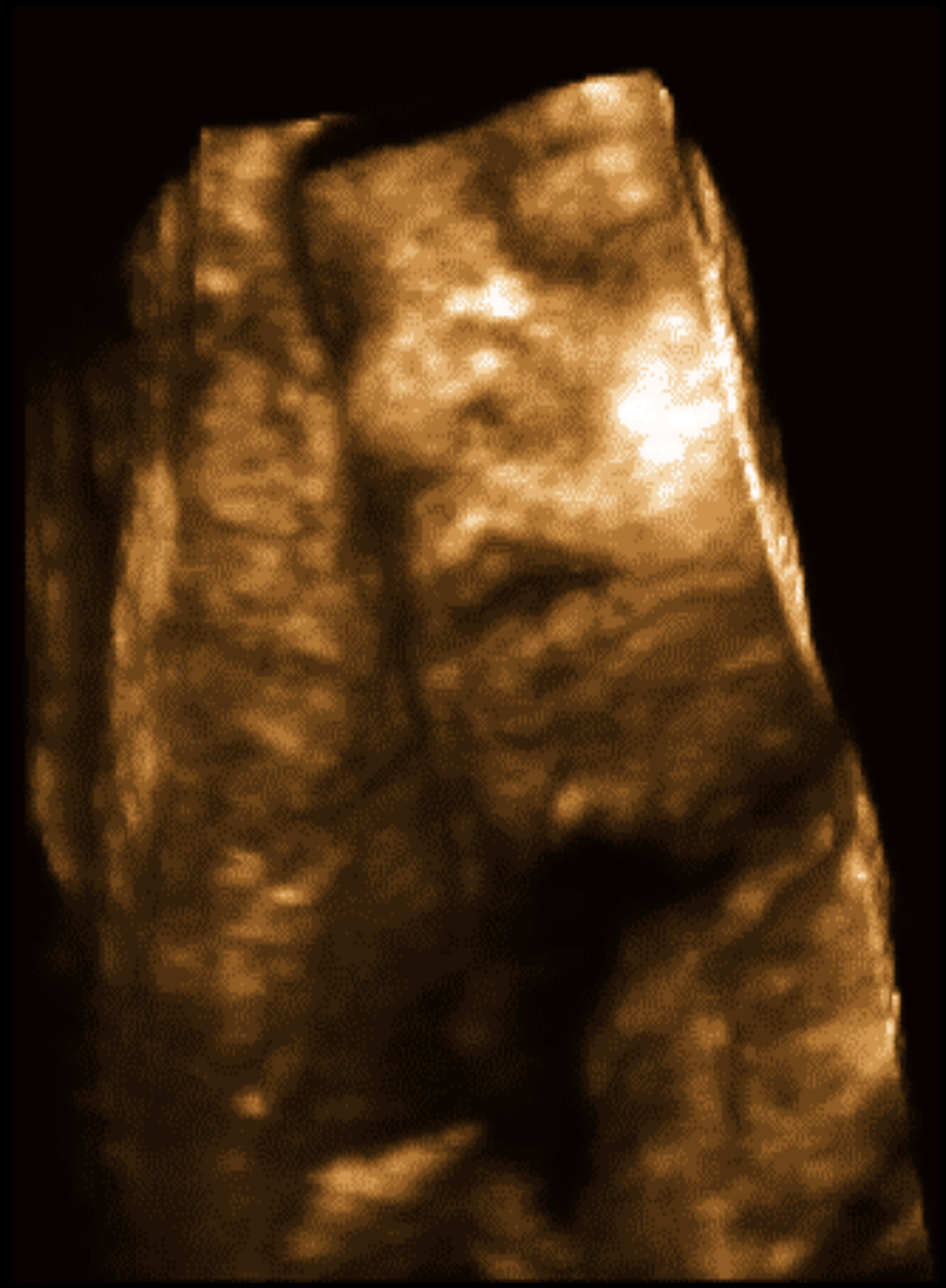
Yhteenveto

MITÄ TIEDETÄÄN

- Äitimortaliteetti (1%)
- Repeämäriski (<1%)
- Sikiömortaliteetti ja -sairastavuus +
- Ei vaadi kirurgista hoitoa - hyvä ennuste

MITÄ EI TIEDETÄ

- Turvallisin synnytystapa: VBAC tai ERC?
- Kliinisesti merkittävä uä-löydös tai raja-arvo?



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