

# Risk of spontaneous preterm birth following preterm full dilatation caesarean section

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## Background:

Term full dilatation caesarean section (FDCCS) is associated with an increased risk of subsequent spontaneous preterm birth (sPTB), likely due to trauma close to or within the cervix. Preterm FDCCS may also increase the risk of sPTB but this has not been evaluated yet.

## Objective:

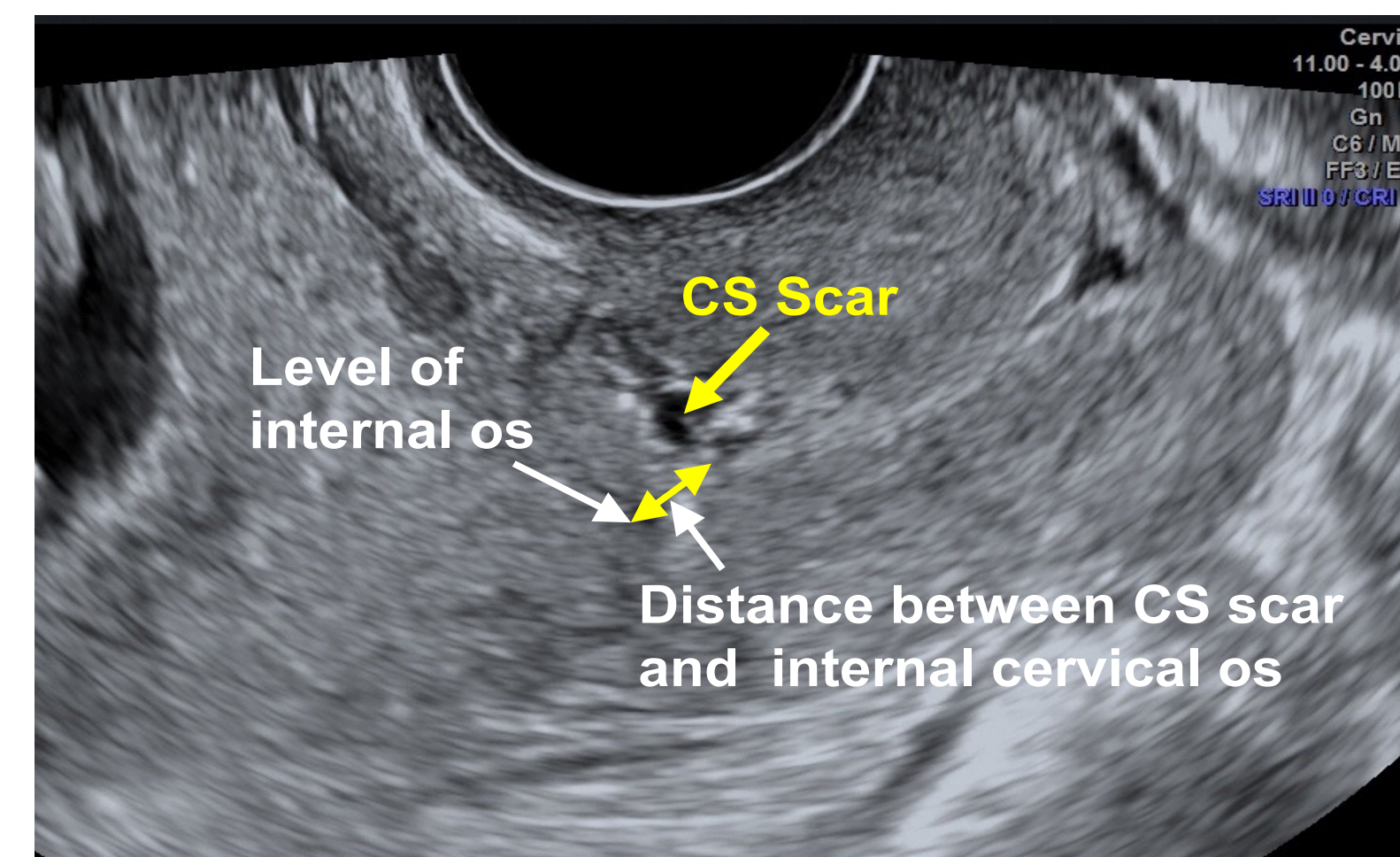
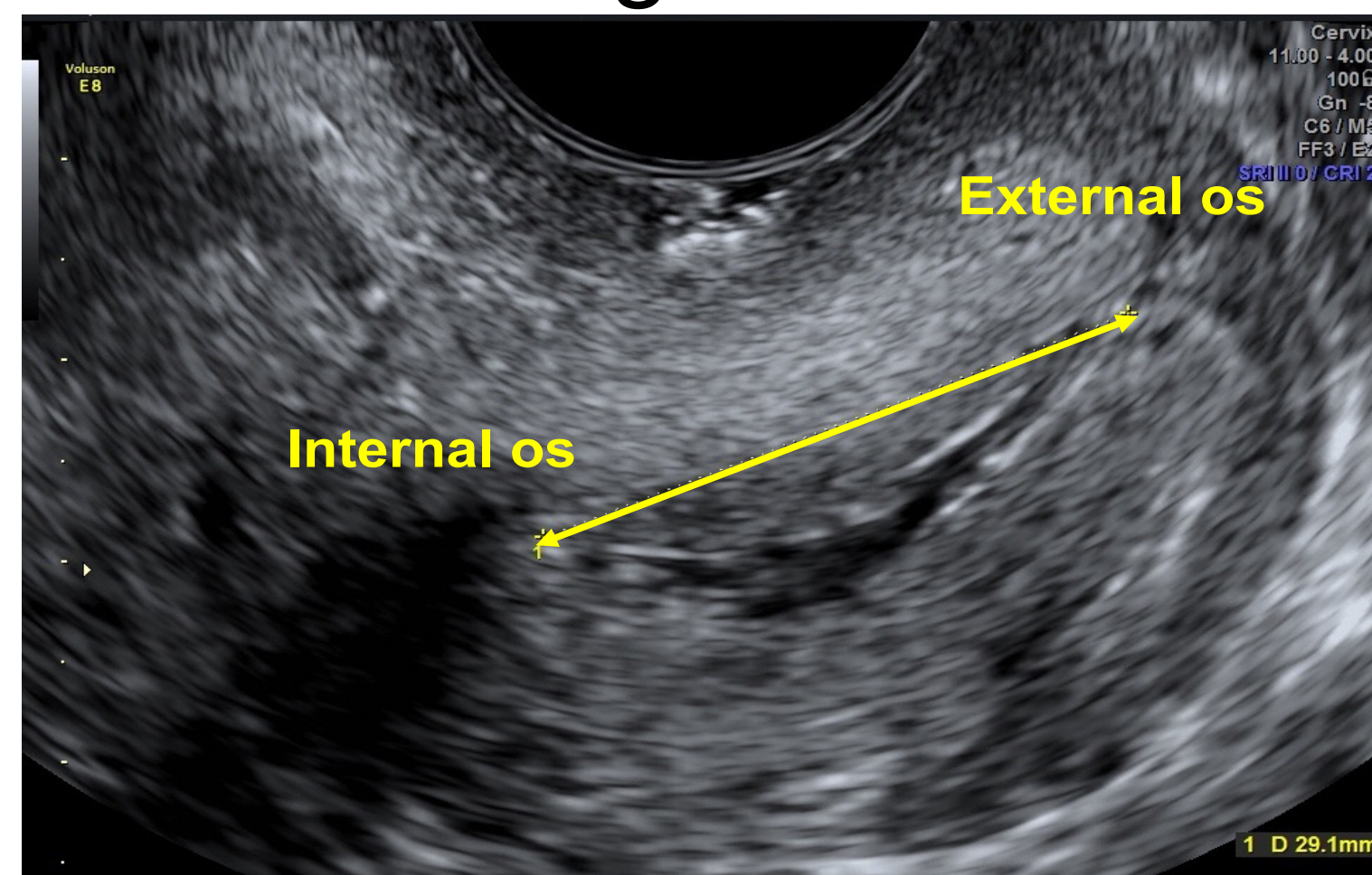
We investigated the relationship between recurrent sPTB and previous preterm FDCCS.

## Methods:

- Retrospective cohort study- University College London Hospital and St Thomas' Hospital, London, UK.
- Inclusion criteria: singleton pregnant women who had one previous sPTB (24-36+6 weeks gestation).
- Outcomes were compared between previous preterm FDCCS (p-FDCCS) and previous preterm vaginal delivery (p-VD).
- Transvaginal ultrasound measurements:

Cervical length

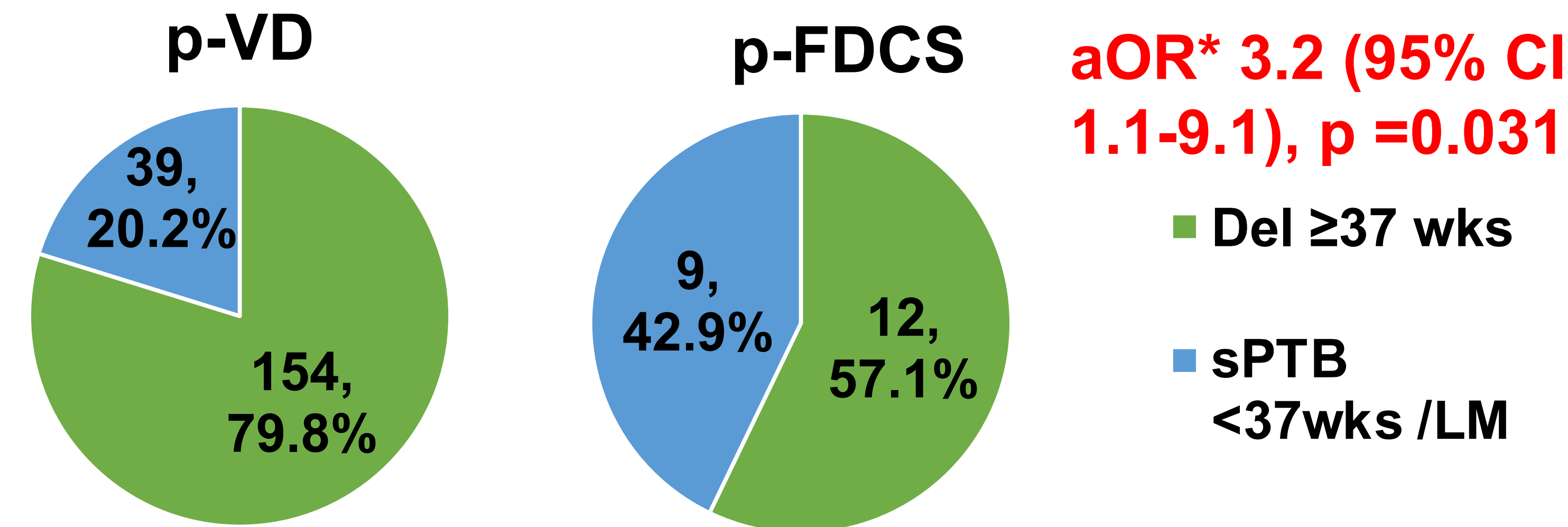
CS scar distance to internal os



- Primary outcome: prediction of sPTB and/or late miscarriage (14-23+6 weeks gestation)
- Secondary outcomes: shortening of cervical length (CL) and need for prophylactic intervention (vaginal progesterone and/or vaginal cervical cerclage).

**Results:** All women had one prior sPTB

- sPTB <37 weeks or late miscarriage (LM)



- sPTB <37 weeks

Prior birth type	N	Term Del	sPTB <37 weeks	sPTB (%)	aOR* (95%CI)
p-VD	185	154	31	16.8%	3.9 (1.3-11.6), p=0.013
p-FDCCS	21	12	9	42.9%	

- sPTB <32 weeks

Prior birth type	N	Del ≥32 weeks	sPTB <32 weeks	sPTB (%)	aOR* (95%CI)
p-VD	185	178	7	3.8%	11.0 (1.7-72.0) p=0.012
p-FDCCS	21	18	3	14.3%	

\*Adjusted for age, BMI, ethnicity, smoking, parity, previous sPTB gestation, previous late miscarriage, previous Preterm Prelabour Rupture of the Membranes (PPROM), uterine anomaly and cervical surgery.

- Cervical length (CL)

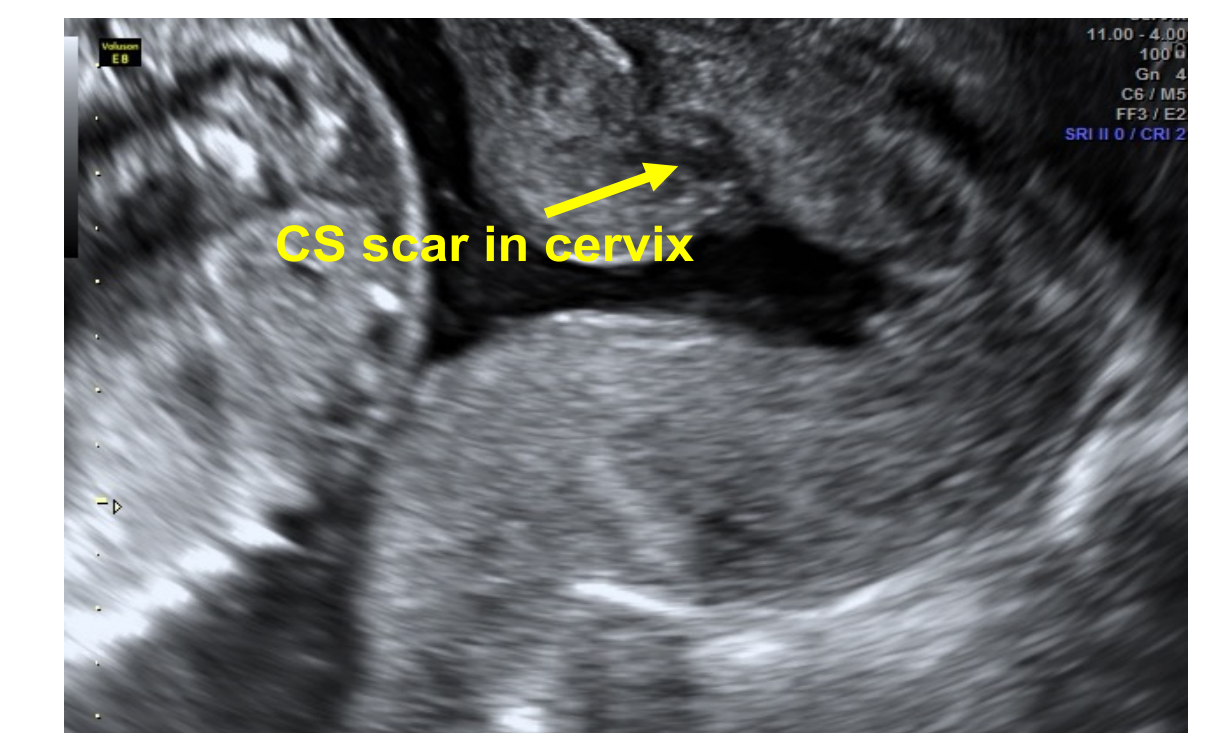
Cervical length	p-VD	p-FDCCS	p-value
CL ≤25mm	33/182 (18.1%)	5/21 (23.8%)	p=0.556
CL ≤25mm and sPTB/LM	11/33 (33.3%)	3/5 (60%)	p=0.337
CL >25mm and sPTB/LM	27/149 (18.1%)	6/16 (37.5%)	p=0.094

- Prophylactic preterm birth intervention (PBI)

Intervention	p-VD	p-FDCCS	p-value
PBI	79/193 (40.9%)	8/21 (38.1%)	p=0.802
Vaginal Cerclage	55/193 (28.5%)	4/21 (19.0%)	p=0.357
Progesterone only	24/193 (12.4%)	4/21 (19.0%)	p=0.728
sPTB/LM despite PBI	23/79 (29.1%)	6/8 (75%)	p=0.015

- CS Scar Characteristics

- Assessed in 14/21, p-FDCCS women
- CS Scar visualisation 86%
- Median scar distance to internal os 1.7mm (IQR 0 –7.2mm)



## Conclusion:

- Women undergoing an FDCCS in spontaneous preterm labour have a significantly higher risk of recurrent sPTB at <37 and <32 weeks' gestation compared to women with a previous vaginal sPTB.
- A preterm FDCCS likely compromises cervical function.
- Transvaginal ultrasound assessment of CS scar location and characteristics should be evaluated to determine if this can predict women at high risk of subsequent sPTB/LM.