

LENGTH OF LABOUR, EMERGENCY CAESAREAN DAMAGE AND PRETERM BIRTH RISK

Glazewska-Hallin A (Presenting)¹, Rosen O'Sullivan H¹, Story L^{1,2}, Suff N¹, Carter J¹, Shennan A¹

¹ Department of Women's and Children's Health, St Thomas' Hospital, King's College London, London, UK

² Centre for the Developing Brain, King's College, London, London, UK



Objective

Emergency caesarean section (EMCS) especially at full dilatation (FDCS) causes cervical caesarean damage (CCD) (Figure 1) and is associated with an increased subsequent risk of spontaneous preterm birth (sPTB). The aetiology is unclear but may be related to obstructed labour and/or cervical trauma. Our prospective study analyses the relationship between length of labour prior to EMCS and future pregnancy sPTB risk.

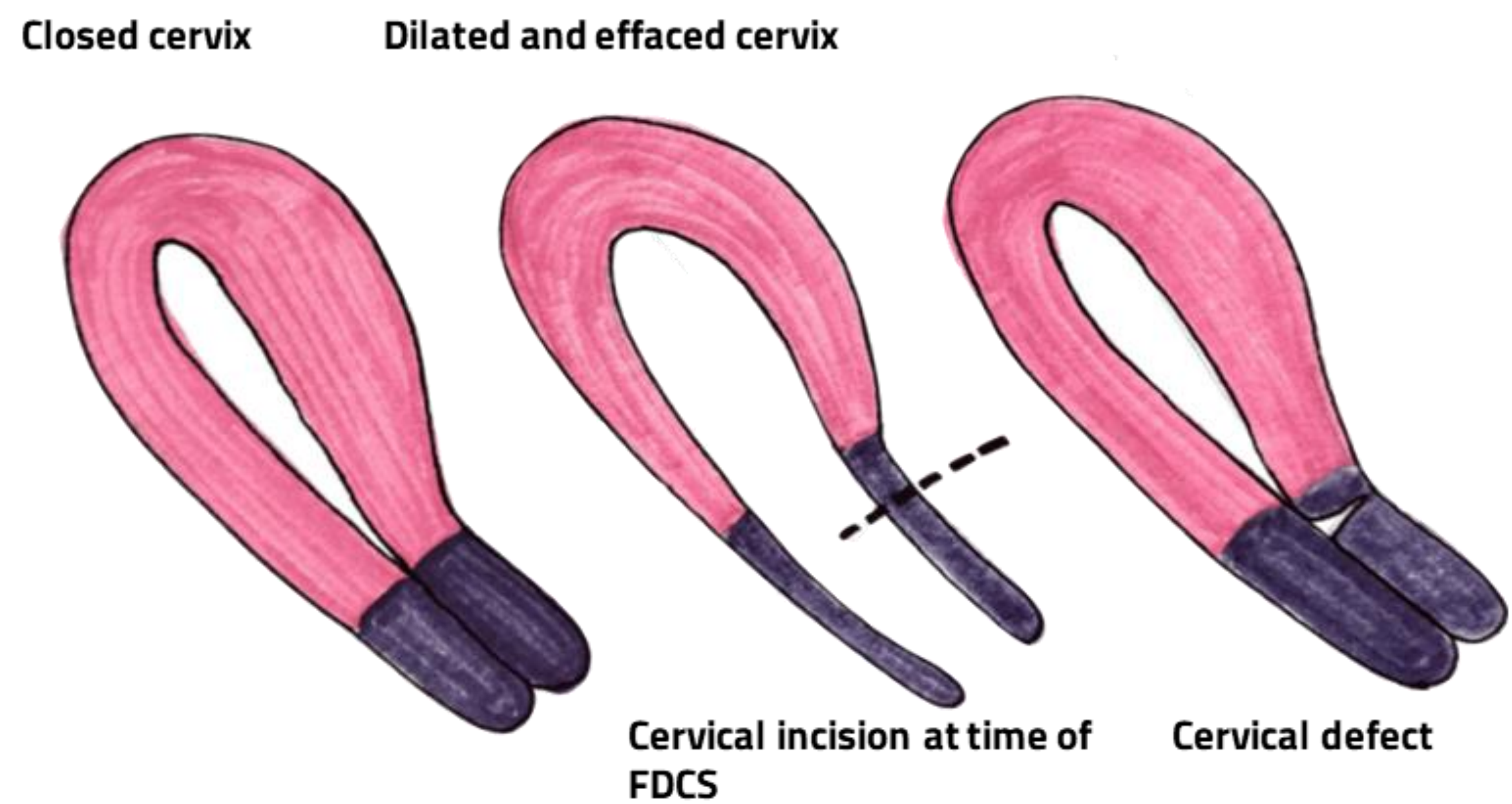
Design

CRAFT is to our knowledge the first prospective study of sPTB risk in singleton pregnancy following in labour term EMCS. It was conducted at 47 sites in United Kingdom between October 2019-2023.

Method

An analysis of 6497 patients with history of EMCS at 4-10cm dilated was analysed and compared to a control cohort of 69081 patients with term vaginal delivery history from 15 UK sites who delivered during the CRAFT study period. We compared labour length (defined as time from examination confirming cervical dilatation ≥ 4 cm to time of delivery) prior to EMCS in patients with a subsequent sPTB (24-36+6 weeks' gestation) and term (>37 weeks' gestation) delivery. We adjusted for sPTB risk factors through logistic regression (age, BMI, ethnicity, smoking, parity, previous sPTB gestation/late miscarriage, uterine anomaly and cervical surgery).

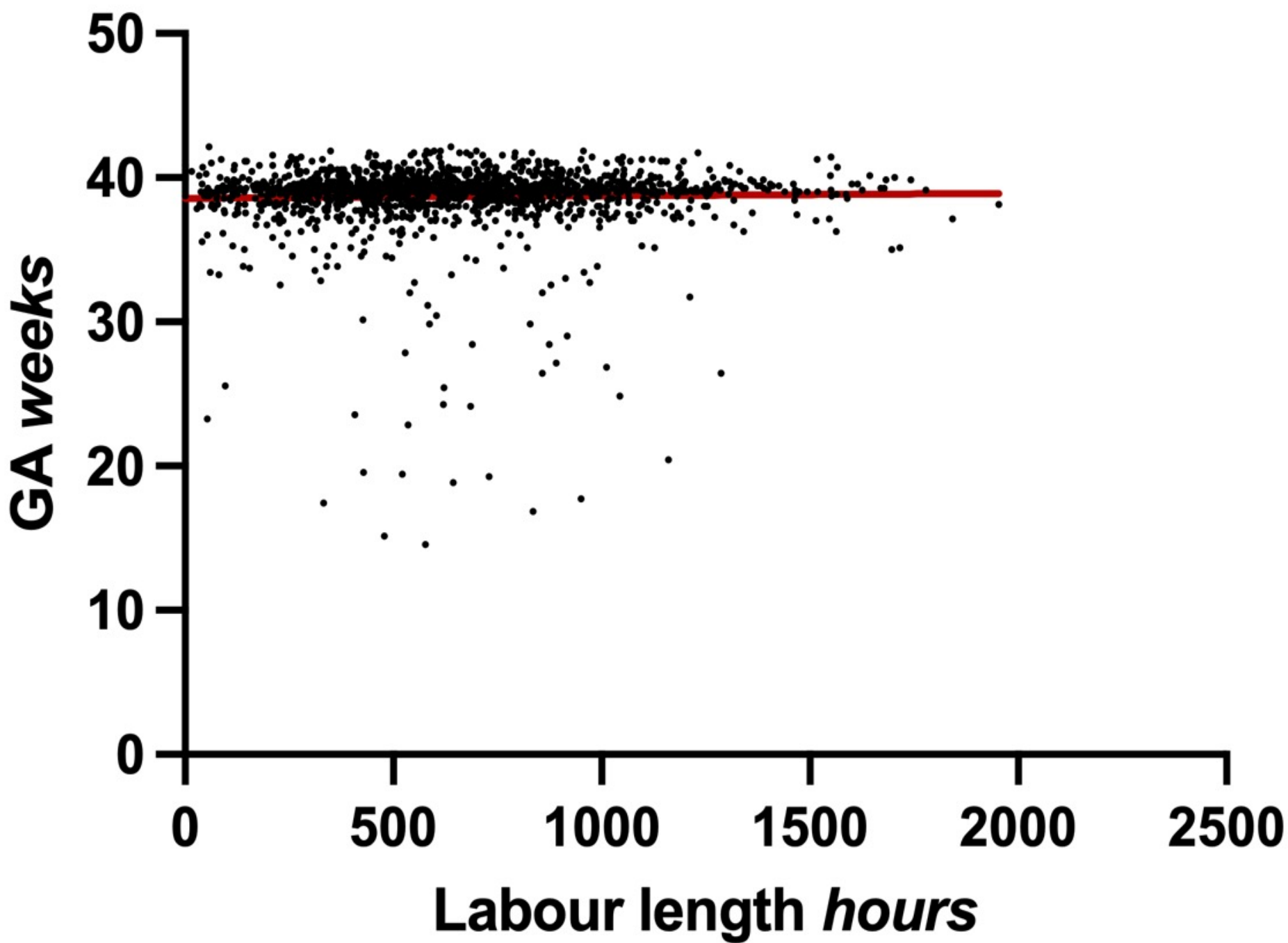
Figure 1 Suggested mechanism of cervical caesarean damage courtesy of Dr Rosen O'Sullivan



Results

sPTB was similar in 185/4149 (4%) of women with a previous term EMCS (4-9cm dilated) and 115/2348 (5%) of women with a previous term FDCS (aOR 1.1035 (95% CI 0.8694 - 1.4007), $p=0.4182$). There was no difference in length of labour between those with term and preterm outcomes (652.5mins vs 551.5mins, $p=0.3015$) see Figure 2. In our control group the rate of sPTB was 2662/69081 (3.9%) compared to EMCS 409/6035 (6.7%) at any dilatation (aOR 1.81 [CI 1.81 1.6288 to 2.0199] $P < 0.0001$).

Figure 2 Scatter plot with line of best fit showing relationship between length of labour prior to CS and gestational age (GA) of subsequent pregnancy.



Conclusion

This data shows that length of labour is not an independent risk factor for CCD. This suggests a mechanism of cervical trauma from the incision itself or resulting cervical extensions and warrants further analysis in our CRAFT cohort. Interestingly, an EMCS has a similar increased sPTB risk to FDCS when compared to women with no caesarean history.