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SONOGRAPHIC PELVIC ANGLES AT RUPTURE OF MEMBRANES AS PREDICTORS OF LABOR PROGRESSION AND DELIVERY OUTCOME

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Introduction & Objectives

To evaluate the association between sonographic pelvic angles—Angle of Progression (AOP) and Pubic Arch Angle (PAA)—measured at the time of rupture of membranes, and subsequent labor progression and mode of delivery, with the aim of assessing their potential role as objective parameters for early labor assessment.

Methods

Cohort: Prospective study of 65 women with singleton term pregnancies (37–42 weeks) presenting with pre-labor rupture of membranes (38 nulliparous, 27 multiparous).

US Measurement: Transperineal US shortly after rupture of membranes and prior to active labor to measure AOP & PAA.

Outcomes: Time to full cervical dilation, 2nd stage duration, and mode of delivery.

Results

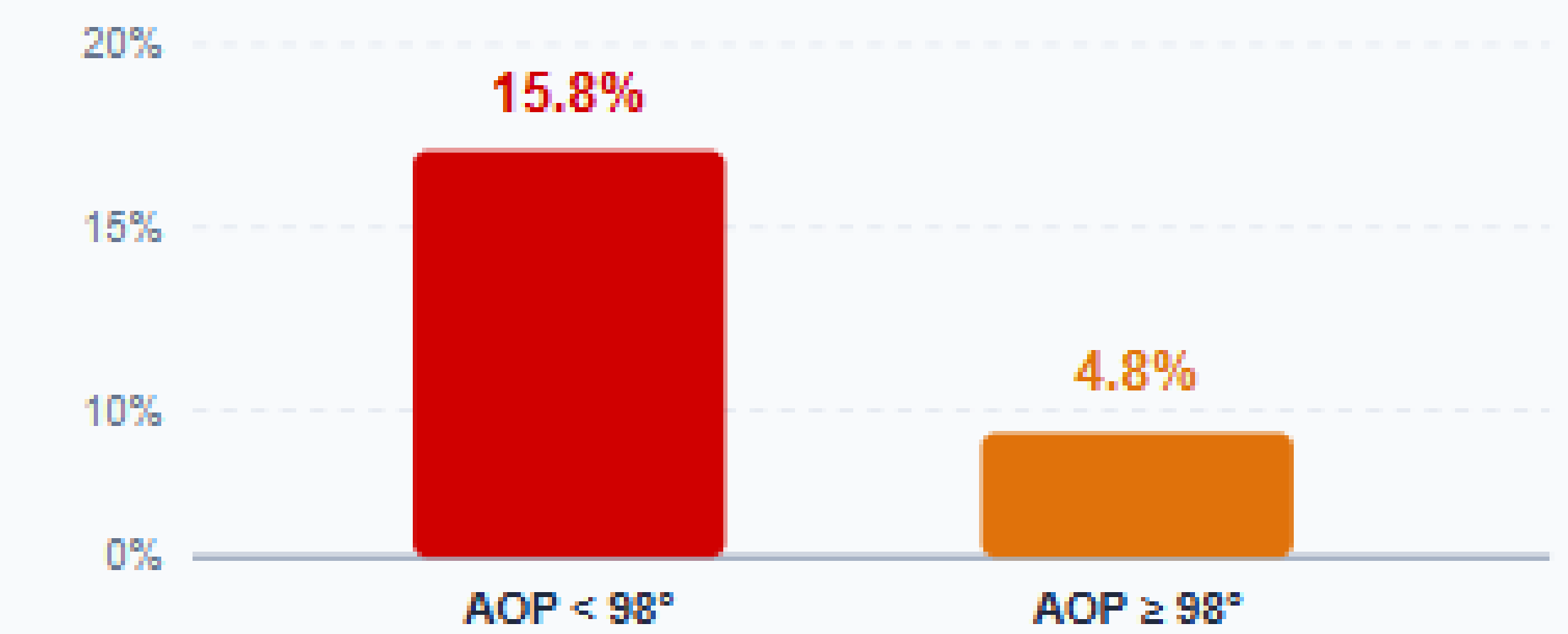
- AOP was associated with second-stage duration across the cohort ($p=0.044$). Among nulliparous women, an AOP $<98^\circ$ was associated with operative delivery (15.8%, $p=0.052$).
- Maternal age was associated with PAA measurements, with narrower angles observed at higher maternal age ($p=0.021$). In multiparous women, wider PAA values were associated with shorter time to full dilation ($p=0.011$).

Conclusion

Sonographic assessment of pelvic angles at rupture of membranes provides measurable parameters associated with labor progression and delivery outcomes, supporting their role in early labor evaluation.

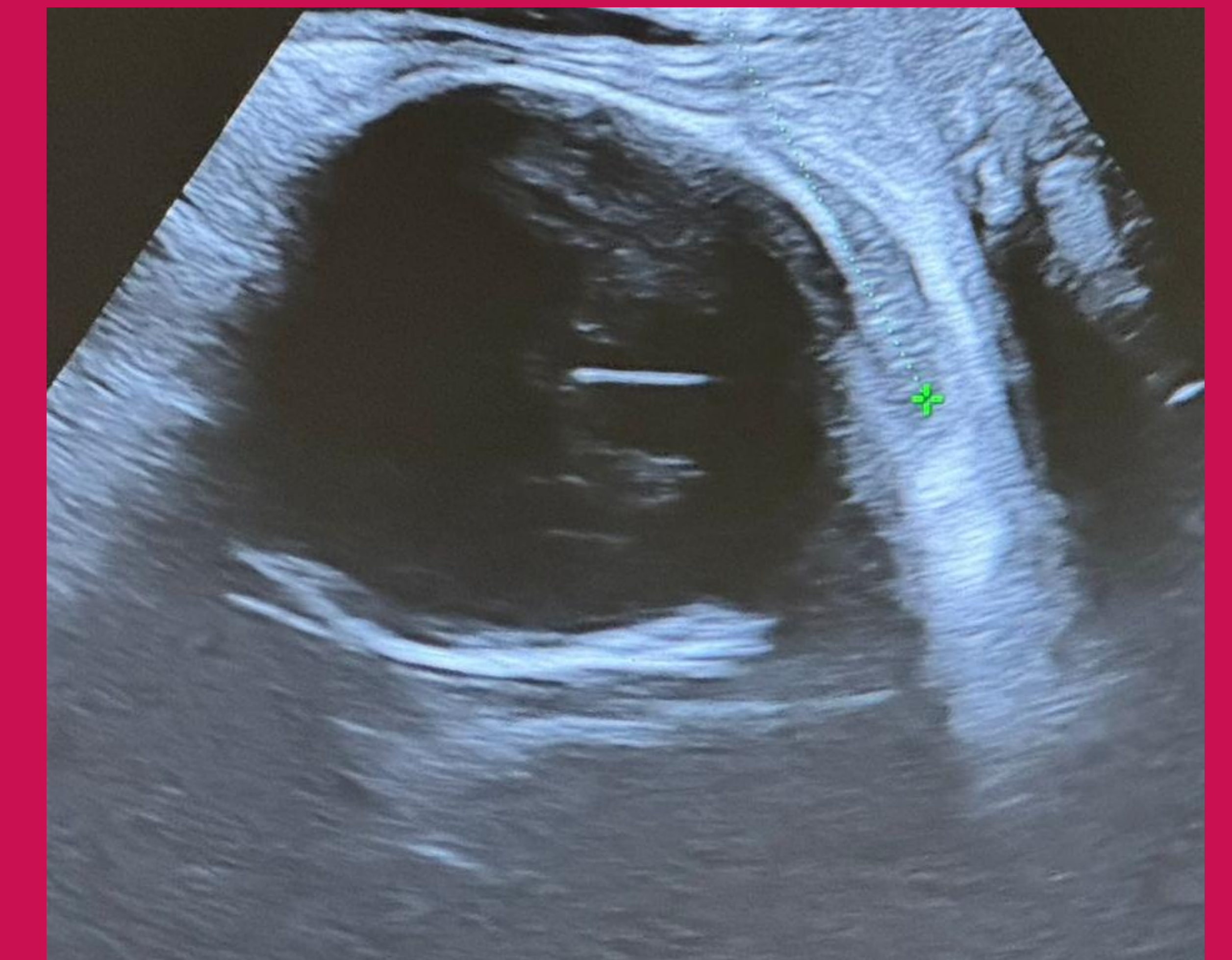
1. Operative Delivery Risk (Nulliparous)

Comparison of vacuum/cesarean rates in nulliparous women (N=38) stratified by AOP threshold.



Increased operative delivery risk when AOP $< 98^\circ$

$p = 0.052$



Transperineal ultrasound visualization of Angle of Progression (AoP) and fetal head descent.