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Use of ultrasound in the delivery room for the diagnosis of fetal head engagement

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Objective: The Assessment of fetal head engagement by digital examination is highly subjective even though this method remains the gold standard. Ultrasound could be a new way to specify the fetal head engagement with objective and reproducible measurements.

Methods: We conducted a prospective longitudinal study on a series of 100 patients and compared the clinical assessment of fetal engagement to the ultrasound measurements. Ultrasound examination was performed in the delivery room. The probe was placed on the ano-vulvar area. The measure used was: distance perineum - external table of fetal head bone.

Results: The ultrasound measures of the distance [perineum - external table of fetal head bone] went from 13 to 75 mm; and the measures of the distance [perineum- succedaneum bump] went from 22 to 68 mm. We tried to retain a value threshold of the distance [perineum - external table of fetal head bone] above which the diagnosis of engagement would be countered. The threshold so proposed is of 55 mm with a positive predictive value in 98.63%, a sensibility in 86.74% and specificity in 94.11%.

Conclusion: Transperineal ultrasound is a simple and easy method to define fetal head engagement by measuring the distance between perineum and fetal head. This new tool can be very useful in the delivery room when clinical examination is inconclusive hampered, for example, by a succedaneum bump.

Keywords: Ultrasound, engagement, labor.