

270 ULTRASONIC ALTERATION OF THE ESTIMATED DATE OF DELIVERY INCREASES CAESAREAN DELIVERY RATES AMONG INDUCED LABORERS FOR POST TERM PREGNANCY. RHONA MAHONY¹, ERINA SASAKI², TILOTTAMA NANDY³, FIONNUALA MCAULIFFE⁴, COLM O'HERLIHY⁵, MICHAEL FOLEY⁴. ¹Department of Obstetrics, Dublin, Ireland, ²National Maternity Hospital, University College Dublin, Dublin, Ireland, ³Society for Maternal-Fetal Medicine, Dublin, Ireland, ⁴UCD School of Medicine and Medical Science, Dublin, Ireland, ⁵UCD School of Medicine and Medical Science, Dublin 2, Ireland

OBJECTIVE: To record the frequency of sonographic reassignment of the EDD and to assess the effect of this on obstetric outcome in women delivering beyond 41 weeks' gestation.

STUDY DESIGN: A consecutive observational cohort study over 12 months to June 2008, of singleton cephalic nulliparas after 41 weeks' gestation (term plus 7 days). Dates were assigned following a scan performed around 20 weeks' gestation. Induction of labor was offered at 42 weeks' gestation.

RESULTS: Among 4233 primiparas (> 37 weeks), 1000, 23.6% delivered after 41 weeks' gestation. Overall the EDD was reassigned in 406 cases (40.6%); put back in 297 cases (29.7%) and brought forward in 109 cases (10.9%). A potential indication for alteration of the EDD pertained in 497 cases (49.7%) resulting in a reassignment in 352 cases (72%) compared with 8.5% (43 of 505) among those with certain dates. Labor was spontaneous in 594 cases (59.4%), at a rate of 10% per day after 41 weeks' gestation and the caesarean rate (13.6%; 81 of 594) was constant. Among those whose labor was induced for post-term pregnancy, the overall caesarean delivery rate was 33.7% (126/373) and was greater among those with altered dates (36% 52/144 vs. 32.3%: 74/229) $P=0.5$ and highest 51% (21/41) when the EDD was brought forward, compared with those put back (29% 30/103; $P<0.01$). The onset of labor was not influenced by maternal age, BMI or birth weight.

CONCLUSION: The EDD was reassigned sonographically in a relatively high proportion of all cases (40.6%) but did not affect the caesarean rate among women who labored spontaneously (13.6%). The caesarean delivery rate for induced labor (33.7%) was higher and particularly when the EDD had been altered. Caution should be exercised when planning induction of labor for uncomplicated post term pregnancy when dates have been reassigned by mid-trimester ultrasound.

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271 PATIENTS UNDERGOING PHYSICAL EXAM-INDICATED CERCLAGE: WHAT ARE THE PREDICTORS OF MICROBIAL INVASION OF THE AMNIOTIC CAVITY? NORIDELLE GILO¹, JOHN PEZZULLO¹, ALESSANDRO GHIDINI², SARAH POGGI². ¹Georgetown University, Washington, District of Columbia, ²INOVA Alexandria Hospital, Perinatal Diagnostic Center, Alexandria, Virginia

OBJECTIVE: Some have advocated amniocentesis prior to physical exam (PE)-indicated cerclage due to high rates of microbial infection of the amniotic cavity (MIAC). The objective of this study was to ascertain the rate of MIAC in a cohort of patients presenting with cervical insufficiency (CI) and identify its predictors.

STUDY DESIGN: All patients presenting from 2003-2008 for PE-indicated cerclage at 16-25 weeks underwent amniocentesis to exclude MIAC (N=48). Exclusion criteria were bleeding, contractions, premature rupture of membranes (PROM), fever or uterine tenderness. Logistic regression analysis was performed to identify clinical and laboratory predictors of positive amniotic fluid (AF) culture results.

RESULTS: 6/48 (12.5%, 95% CI 5-25%) patients had MIAC. Patients with MIAC were similar to those without it in terms of maternal age, race, previous D&C, cervical surgery, gestational age, serum or AF WBC, AF segmented neutrophils, glucose and gram stain. Logistic regression analysis identified only AF lymphocyte count as predictor for positive AF culture results ($P=0.03$). ROC curve analysis indicated AF lymphocyte count of 4 as optimal predictor of MIAC (sensitivity=67%, specificity=88%). In addition, there was a trend towards prediction of positive AF culture for positive genital culture ($P=0.058$).

CONCLUSION: Patients presenting with CI have lower rates of MIAC than reported in earlier non-cohort series. Unlike in the settings of premature labor or PROM, AF WBC, glucose and gram stain are not predictive of MIAC, whereas AF lymphocyte count and, to a lesser extent, genital cultures, are predictors of MIAC.

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272 FETAL RIGHT VENTRICULAR FILLING CHARACTERISTICS: ROLE OF FETAL HEART RATE AND AFTERLOAD JASON HASHIMA¹, ANTONIO FRIAS¹, LEAH BERNARD¹, ELIOT SPINDEL¹, JUHA RASANEN¹. ¹Oregon Health & Science University, Portland, Oregon

OBJECTIVE: We hypothesized that heart rate and afterload significantly affect the fetal tricuspid valve (TV) blood velocity waveform pattern at term gestation.

STUDY DESIGN: 18 rhesus macaque monkeys underwent Doppler ultrasonography at 150-157 gestational days (term 165 days). Tricuspid valve (TV), right pulmonary artery (RPA) and ductus arteriosus (DA) blood velocity waveforms were obtained at baseline and during maternal hyperoxygenation (100% oxygen). Using the TV blood velocity waveform, peak velocities during early ventricular filling (E) and filling during atrial contraction (A) were measured and their ratio (E/A) was calculated. Pulsatility index (PI) values were obtained from RPA and DA blood velocity waveforms. Fetal heart rate (FHR) was measured from TV blood velocity waveforms. Paired t-test comparisons were used in statistical analysis.

RESULTS: Hyperoxygenation resulted in a significant increase in the TV E/A ratio and DA PI, while it was also associated with a significant decrease in RPA PI and FHR. The change in TV E/A ratio was negatively correlated with the change in FHR ($r = -0.687$, $p = 0.003$). No significant correlation ($r = 0.262$, $p = 0.328$) was found in the change between TV E/A ratio and RPA PI.

CONCLUSION: During maternal hyperoxygenation, the fetal TV E/A ratio increased and FHR and RPA PI decreased. A decrease in RPA PI reflects diminished pulmonary vascular impedance and right ventricular afterload. While fetal heart rate can modify right ventricular filling characteristics, a drop in right ventricular afterload is not related to changes in TV blood velocity waveform patterns.

Cardiac Indices by Oxygenation - mean (SD)

	TV E/A Ratio	FHR	RPA PI	DA PI
Base	0.57 (0.42)	176 (24.35)	29.44 (19.62)	2.44 (0.27)
Oxygen	0.90 (0.30)	152 (14.74)	6.13 (3.90)	2.89 (0.71)
p-value	0.006	0.000	0.000	0.013

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273 JUGULAR VEIN AND CAROTID ARTERY BLOOD FLOW IN FIRST-TRIMESTER FETUSES WITH NORMAL AND INCREASED NUCHAL TRANSLUCENCY YOLANDA DE MOOIJ¹, MIREILLE BEKKER¹, MARIEKE SPREELUWENBERG², JOHN VAN VUGT³. ¹VU University Medical Center, Dept. of OBS/GYN, Amsterdam, Netherlands, ²VU University Medical Center, Epidemiology and Biostatistics, Amsterdam, Netherlands, ³VU University Medical Center, Amsterdam, Netherlands

OBJECTIVE: To investigate the jugular vein and carotid artery pulsatility index (PI) in fetuses with normal and increased nuchal translucency (NT).

STUDY DESIGN: In a longitudinal study, fetuses with a normal and increased NT (> 95th percentile) were weekly examined between 11 and 17 weeks of gestation. After measuring the NT and jugular lymphatic sacs (JLS), the carotid artery and jugular vein PI were evaluated using Doppler. The jugular vein and carotid artery PI of fetuses with a normal and increased NT were compared using multilevel analysis. A possible relationship between the jugular vein and carotid artery PI and JLS volume was investigated using Pearson's correlation coefficient.

RESULTS: Seventy-two fetuses with a normal NT and seventy-one fetuses with increased NT were assessed. The mean difference of the jugular vein PI in fetuses with increased NT was 0.51 higher compared to fetuses with a normal NT ($p<0.01$). Also, the jugular vein PI increased with JLS volume ($r = 0.34$, $p<0.01$). No differences in carotid artery PI were found between fetuses with normal and increased NT. No relationship between the carotid artery PI and JLS volume were found.

CONCLUSION: The jugular vein PI in fetuses with increased NT is significantly higher compared to fetuses with a normal NT. Also, fetuses with a larger JLS volume show a higher jugular vein PI. This indicates a possible relationship between over-perfusion of the head and a disturbance in lymphatic development in fetuses with increased NT.

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