Prenatal evaluation of the fetal conus medullaris in the routine scan

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Objective

To asses the ability of the measurement of the conus-sacrum distance (CSD) in the routine scan, its relation to gestational age (GA) and body mass index (BMI) and its possible implication for assessment of prenatal skin-covered spinal dysraphism.

Methods

This is a prospective study. All scans were performed by two sonographers with more than 10 year-experience in prenatal diagnosis. In the period of February to April 2014, we included all singletons without structural abnormalities and with a femur length (FL) between 5th and 95th centile that underwent a routine scan between 20 and 32 gestational weeks. We analyzed the influence of the gestational age and maternal BMI on the assessment of the distance from the conus medullaris to the last spine ossification centre (conus-sacrum distance (CSD)). The correlation between the FL and the CS distance was evaluated with a linear regression model (r2).

Results

A total of 324 fetuses were analyzed, 152 fetuses (46, 9%) were at 24 gestational weeks by mean maternal BMI 23 (range 17-41). The CS distance could be analyzed in 220 cases (67, 9%). The ability of assessment of CS was statistically associated with the GA (74. 3% < 24 gestational weeks', 62. 2% >24 gestational weeks', p: , 02) and the BMI (69. 7% bmi< 28, 52. 8% > bmi 28, p: , 04). There was a significant correlation between FL and CS distance (r2: . 931) and the formula showing this correlation best was: CS distance=FL x 1, 052-9, 15.

Conclusion

CS distance could be assessed in 67% of routine scans. The assessment is easier in the second trimester and by lower BMI. In the routine scans CS distance could be introduced for assessment of prenatal skin-covered spinal dysraphism.