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The Significance of Fetal Brain Ventricular Asymmetry Without Dilation

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Objective

Fetal brain non-dilated ventricular asymmetry (NDVA) is a common finding on prenatal ultrasound exams. However, the optimal prenatal management in these cases remains unknown. We aimed to evaluate the benefit of prenatal genetic and magnetic resonance imaging (MRI) exams performed in cases of fetal NDVA detected on ultrasound.

Methods

A historical cohort study from a tertiary medical center. Singleton pregnancies with fetal brain NDVA diagnosed on ultrasound were included. We defined ventricular asymmetry as a difference of ≥2.0 mm between the lateral ventricles and ventricular dilation as ventricular width of >10.0 mm. Outcomes were evaluated with genetic exams (karyotype and chromosomal microarray analysis [CMA]) and fetal brain MRI.

Results

During the study period, there were 145 cases diagnosed with NDVA on ultrasound that comprised the cohort study. The rate of abnormal karyotype was 1.8% (1/56) and of abnormal CMA was 10% (3/30). The rate of minor additional CNS findings did not differ between ultrasound and MRI (3.4 versus 2.8%, respectively, p =.74). No major additional fetal brain findings were detected on MRI performed after ultrasound.

Conclusion

In cases diagnosed with NDVA on ultrasound, no significant additional anomalies were detected on fetal brain MRI. The rate of abnormal genetic tests was relatively high and warrants further studies.