Prenatal ultrasound combined with fast MRI in the diagnosis of fetal agenesis of corpus callosum.

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Objective

Agenesis of corpus callosum (ACC) is a relatively common type of CNS malformation with an estimated prevalence of 1 in 4000–5000. At least one third of fetal ACC displays long term neuro-developmental delay. To evaluate the diagnostic value of fetal neurosonography combined with fast intrauterine magnetic resonance imaging (MRI) in fetal agenesis of corpus callosum (ACC).

Methods

Between January 2014 and December 2019, 268 fetuses, mean gestational age of 28.3 weeks (range 22-40 weeks), with mild ventriculomegaly and diaphanous diaphragm reduction or disappearance diagnosed at prenatal sonography were included in this study.

Results

In 111 fetuses (41.42%) were confirmed with ACC. 72 cases were diagnosed by detailed fetal neurosonography, 98 cases by intrauterine MRI and 105 cases were diagnosed by ultrasound combined with intrauterine MRI. The sensitivity were 73.87%, 88.28% (p<0.05) and 94.59% respectively.

Conclusion

Detailed fetal sonography combined with fast MRI can accurately diagnose fetal ACC, especially improve the detection rate of partial corpus callosum agenesis, and provide a reliable basis for clinical diagnosis, especially in fetuses with mild ventriculomegaly and CSP reduction/disappearance in routine ultrasonic examination.