Abnormal sonographic appearance of posterior brain at 11–14 weeks and fetal outcome
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Objective
The aim of this retrospective study was to evaluate the posterior fossa anatomy and its measurements in normal fetuses at 11 to 14 weeks of pregnancy, to assess the feasibility of this evaluation and to determine the fetal outcome when one of the posterior brain anatomical space is not recognized.

Methods
Two groups of patients were included in the study: a control group of consecutive 311 healthy fetuses with a normal sonogram and a study group of 21 fetuses with absence of one of the three posterior brain spaces. In each fetus, images of the mid-sagittal view of the fetal face and brain at 11 to 14 weeks of gestation were obtained.

Results
In all fetuses with absence of one of the three posterior brain spaces, a severe anomaly, including open spina bifida, cephalocele, Dandy–Walker complex, and chromosomal aberrations, including genomic imbalances, was associated.

Conclusion
Our study indicates that evaluation of posterior fossa anatomy and assessment of the three posterior brain spaces at 11 to 14 weeks in the same mid-sagittal plane employed for measurement of NT is feasible. Furthermore, the absence of the border between the fourth ventricle and cisterna magna and of one of three spaces is easy to detect. The visualization of only two of the three posterior brain spaces seems to facilitate not only the detection of open spina bifida, as previously reported, but also of other neural tube defects, such as cephalocele, and is an important risk factor for cystic posterior brain anomalies, and/or chromosomal abnormalities. Thus it seems a poor prognostic finding for major fetal abnormalities.