Corroboration of normal and abnormal fetal cerebral lamination on postmortem sonography with neuropathological examination
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Objective
The purpose of this study was to compare post-mortem sonographic imaging of fetal cerebral lamination with neuropathological examination. Validation by direct sonographic/histopathological correlation was undertaken in this study.

Methods
22 fetuses underwent postmortem sonography through the fetal fontanelles. Visibility of lamination and image quality were graded for both sonography and neuropathology.

Results
Full ultrasound/autopsy correlation was available in 18 fetuses. In 8 fetuses with normal brains, cerebral lamination patterns were considered to be normal in all 7 cases in which full autopsy was performed. High frequency of ultrasound is correlated with 5 distinct sonographically identified histological layers on higher magnification views. Among 14 fetuses with abnormal prenatal intracranial findings, three patients declined autopsy; malformations were confirmed in all 3 on post-mortem sonography. In 2/11 fetuses undergoing full autopsy, findings were inconclusive due to autolysis. However, the antenatal findings were confirmed by postmortem ultrasound.

Conclusion
Postmortem sonographic assessment of normal fetal cerebral lamination patterns is consistently correlated with neuropathological findings in this series. In the abnormal fetal brain, postmortem sonography can provide confirmation of antenatally suspected intracranial abnormalities, including abnormal lamination, particularly when autopsy is declined or inconclusive. Evaluation of cerebral layering provides a framework for assessing brain parenchyma. Understanding of normal patterns permits identification of abnormalities of parenchymal development.