**Periventricular pseudocysts and the germinal matrix: appearances, associations and neurodevelopmental outcome**

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**Objective**
Periventricular pseudocysts have the potential to disrupt neurogenesis in the developing fetal brain within the ventricular zone (germinal matrix) and ganglionic eminences. The aim of this study is to correlate the presence of periventricular pseudocysts (PVPCs) with postnatal and neurodevelopmental outcome.

**Methods**
Institutional ethical approval was obtained to review prenatal sonographic and MRI records to identify fetuses with PVPCs (germinolysis). Prenatal ultrasound and MRI findings were correlated with postnatal imaging, clinical, and/or autopsy findings.

**Results**
A total of 38 fetuses in 37 pregnancies were identified with PVPCs. Multiple gestation was present in 6 (16%). Gestational age at diagnosis ranged from 17 to 36 gestational weeks. Normal postnatal developmental outcome was documented in 15/37 fetuses or 40% (one outcome unknown). Significant developmental delay was found in 9/37 (24%). The proportion of fetuses with chromosomal abnormalities was 6/37 or 16%. Neonatal death occurred in 3 fetuses or 8%. Metabolic disease was present in 2 fetuses (5%) and lysosomal storage disease in 1 fetus. Multiple congenital anomalies were present in 8 fetuses or 38% (1 lost to follow-up, one ToP: termination of pregnancy; 1 MMC, 1 neonatal death, 2 translocations and ToP, 1 heterotaxy, 1 abnormal microarray). Aneuploidy was present in 3/8. Pregnancy termination was elected in 7 cases (19%). Ventriculomegaly (unilateral or bilateral) was present in 46% and evidence of intracranial hemorrhage was noted in 30% of cases.

**Conclusion**
Fetuses with PVPCs had a normal outcome in 40% of cases and pregnancy termination was elected in 19%. The remaining fetuses have adverse outcome in terms of chromosomal abnormalities, neonatal death, developmental delay, metabolic disease, and lysosomal storage disease. In the developing fetal brain between 14 and 28 gestational weeks, neurogenesis takes place in the ventricular zone (germinal matrix) and within the ganglionic eminences. Germinolytic cysts may be considered of little significance in the preterm postnatal population. However, in the fetus, disruption of zones of neurogenesis may have profound effects on fetal brain development and neurodevelopmental outcome.