Premature newborn at 27 weeks gestational age. Evaluate for IVH.

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Follow up 2 months later
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Periventricular Leukomalacia
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White matter injury of prematurity occurring before 33 weeks gestation. Results in loss of periventricular white matter.

- **Early imaging:**
  - Typically subtle hyperechoic periventricular flare on US.
- **Subacute:**
  - Cavitary change
- **Late:**
  - Ipsilateral ventriculomegaly
  - “Periventricular cyst”
  - Angular ventricular morphology
  - Cortical ribbon extending down to ventricular margin
  - Focal thinning of body of corpus callosum
  - Minimal associated gliosis
Periventricular Leukomalacia

Differential:

- Normal periventricular halo – produced by normal WM tracts, peri trigonal location, less echogenic than choroid plexus
- Infection – CMV, citrobacter, neonatal herpes
- Shunted hydrocephalus
- Peroxisomal disorders

Etiology:

- Inflammatory changes in placenta and chorion produce a vasculitis, increasing risk of WM damage during perinatal hypoxia. Selectively damages immature oligodendrocytes.

Associations:

- IVH, cerebellar hemorrhage, and infarction.
Hyperechoic periventricular focus (early phase)
Follow up 2 months later (late phase)

Ipsilateral ventriculomegaly

Normal contralateral ventricle
Follow up 2 months later (late phase)

Ipsilateral ventriculomegaly

Periventricular cyst (encephalomalacia)
References