Neonatal Cranial Ultrasounds
RADY 401 Case Presentation

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Male infant born at 26w 3d and 815g was admitted to the NICU for extreme prematurity, currently stable with mechanical ventilation.

This patient requires screening for neonatal intraventricular hemorrhage (IVH) with cranial ultrasound.
Routine screening cranial ultrasound examinations are recommended for all infants born at 32 weeks’ gestation or earlier.

- Germinal matrix is more durable after 32w

Timing of cranial ultrasound:

- Recommended at 7-10 days of life to screen for hemorrhage
  - First screen can be completed earlier if clinically indicated (generalized seizures, altered consciousness, deterioration, decreased spontaneous movements, etc.)

- Second scan recommended at 6 weeks of life to monitor for ventriculomegaly, cystic lesions, and periventricular leukomalacia.

- Afterwards, patient can be followed with cranial ultrasounds as needed per clinical course
Okay... so how do I read this and what does it mean?
Grade 1: Germinal matrix hemorrhage

Grade 2: Intraventricular hemorrhage without dilatation

Grade 3: Intraventricular hemorrhage with dilatation

Grade 4: Parenchymal hemorrhage
Classification

- Grade 1: Germinal matrix hemorrhage
- Grade 2: Intraventricular hemorrhage without dilatation
- Grade 3: Intraventricular hemorrhage with dilatation
- Grade 4: Parenchymal hemorrhage

Normal choroid plexus
Classification

- Grade 1: Germinal matrix hemorrhage
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Prognosis

- Grade 1: Germinal matrix hemorrhage
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Cranial Ultrasound DOL 7 → Our Case Interpretation?
Bilateral Grade 2 GM/IVH with ?mild dilation
1. Who requires screening for IVH with cranial ultrasound?

2. Where is the germinal matrix located?

3. At what grade do neonatal IVHs become clinically significant?
1. Who requires screening for IVH with cranial ultrasound?
   - Premature infants born prior to 32w gestation
2. Where is the germinal matrix located?
   - At the caudothalamic groove
3. At what grade do neonatal IVHs become clinically significant?
   - Grades 3-4
References