11 year old girl presenting with headache, nausea and vomiting

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Pilocytic Astrocytoma
(Juvenile Pilocytic Astrocytoma)
Obstructive hydrocephalus with transependymal CSF
Obstructive hydrocephalus is caused by an extensive infratentorial mass.
Large mass with cystic and solid enhancing components
Pilocytic Astrocytoma
(Juvenile Pilocytic Astrocytoma)

• Pilocytic Astrocytoma ("Juvenile" is no longer added in the 2016 WHO classification) is the most common primary pediatric posterior fossa tumor
• Peak age from 5 to 13 years of age.
• Arises from the cerebellum, most commonly midline or just off midline.
• JPA is most commonly a benign and slow growing tumor (>80% WHO grade 1) with a very good prognosis.
Pilocytic Astrocytoma
(Juvenile Pilocytic Astrocytoma)

• Imaging characteristics
  – Overall appearance
    • 50% predominantly cystic with an enhancing mural nodule
    • 40% solid appearing with central cystic areas
    • 10% solid homogeneous enhancement
  – T1: solid component hypo or isointense to grey matter
  – T2: solid component hyperintense to grey matter with hyperintense cystic/necrotic components.
  – Enhancement is variable, though most commonly the solid component enhances homogeneously & prominently
  – Often associated with 4th ventricle compression & obstructive hydrocephalus
Juvenile Pilocytic Astrocytoma

- **Differential Diagnosis**
  - Medulloblastoma
    - Younger age group (bimodal age peak at 3-4 and 8-9 years)
    - Midline, dorsal to 4\textsuperscript{th} ventricle
    - Highly cellular, demonstrates diffusion restriction
  - Ependymoma
    - Younger age group (peak age 3-5 years)
    - Arises within ependymal lining of 4\textsuperscript{th} ventricle, filling the ventricle and extending out of ventricular foramina, rather than displacing it
References


• Ollenschleger M. Pilocytic Astrocytoma. Radiology Online (2020)