Uncommon gliomas:

1. **Pleomorphic xanthoastrocytoma**:
superficial supratentorial tumour adjacent to meninges in children and young adults. Radiologically PA is hypointense on T1, enhancing, hyperintense on T2 with cystic formation in 50%. Histology shows cellular pleomorphism with **spindle shaped cells**, **polygonal cells with eosinophilic cytoplasm and lipid laden cells**. Cells stain +ve for GFAP and S-100(including spindle cells). Treatment is surgical resection. The prognosis is good in the majority of cases with 5 year survival of 90%. Some tumours have aggressive behaviour.

2. **Subependymal giant cell astrocytoma ((**WHO I)

- Subependymal enhancing nodules most commonly in the region of foramen of Munro occur mostly in the setting of tuberous sclerosis (pathognomonic for TS).
- Three types of cells (**small spindle shaped**, **large ganglion-like cells** and **intermediate gemistocytic like cells**). The majority of cells stain positive for GFAP, S-100. The presence of mitosis, necrosis and nuclear pleomorphism does not indicate malignancy.
- Molecular genetics (loss of heterozygosity of TSC2 gene (16p) in some cases (different from diffuse astrocytomas)

3. **Subependymoma (WHO I)**

- Well circumscribed generally asymptomatic nodules located in the wall of fourth or lateral ventricles. Variable enhancement
- Ependymal and astrocytic differentiation. **Pseudorosettes** and **clusters of cells** with **fibrillar processes**.

4. **Desmoplastic infantile Ganglioglioma (DIG): WHO I**
- Large superficial tumour of infants which has large cystic part and enhancing solid component usually adjacent to leptomeninges
- Histologically there are three types of cells, small astrocytic, large ganglion like cells and spindle cells in fibrous desmoplastic stroma. It is believed that the presence of mitosis and necrosis does not correlate with prognosis.

5. **Dysembryoplastic neuroepithelial tumour (DENT):**
- Multinuclear intracortical non-enhancing tumours of children and young adults. Most commonly located in temporal lobe and present with partial complex seizures. Good prognosis with resection. No place for adjuvant chemo and radiotherapy
- Histologically composed of oligodendrocyte like cells and astrocytes and neurons. The neurons of the cortex appear to float in mucoid matrix within the proliferating oligodendrocytes. MIB< 1%.