Oligodendrogliomas:

- 4-15% of brain gliomas (third most common after GBM and astrocytomas). Most commonly supratentorial, more in the frontal lobe. M: F 2:1. **2 peaks 6-12 and 30-50 years.** rarely in the spinal cord, brain stem and intraventricular
- Epilepsy is the most common presentation (slow growing tumours), focal symptoms and increased ICP less common.
- CT scan- large hypodense supratentorial lesion that extends to the surface, **60% with calcification** in clumps with minimal or no enhancement. Hyperintense on T2 and FLAIR, hypointense on T1 with minimal or no enhancement. Higher grade tumours tend to enhance.
- Histology: small uniform cells with round or oval nuclei and **perinuclear halo** (**autolysis from delayed fixation not seen on frozen sections**) arranged in lobules circumscribed by delicate branching vessels (**chicken wire** appearance). Nuclear pleomorphism, mitosis, necrosis indicate anaplasia. No specific immunohistochemical marker. High percentage of oligodendrogliomas are immunoreactive to the cell surface antigen Leu 7
- Histological grading: no internationally accepted grading system , WHO and Burger's two tier system (OD and AOD)
- Management: **Controversial**

1. **Surgery**: The role of surgical resection of low grade gliomas is controversial. Several series have emphasized the importance of total resection (12 years median survival with total resection compared to 5 years with partial resection Mayo clinic 1992). On the other hand limited number of series failed to show a statistical significance of the extent of resection on survival. This can be explained by the lack of universal grading system and selection bias where young patients with tumours in non eloquent brain undergoing total resection. The review of literature suggests that total resection of oligodendroglioma improves survival, particularly in patients with high grade tumours.
2. **Radiotherapy**: the role of radiotherapy in the management of low grade oligo is controversial. Retrospective studies showed improved survival in partially resected tumours treated with radiotherapy (Chin 1980). Radiotherapy has many side effects particularly in children
3. **Chemotherapy**: oligodendrogliomas is one of the most chemosensitive solid brain tumours. Tumours with p1 or p1 q19 deletions are more chemoresponsive. The most common used chemotherapy regime is PCV(procarbazine, CCNU and vincristine) and the less toxic oral temozolamide (80% response rate with 50% tumour reduction)

- **In summary for patients with non enhancing low grade tumours the options are either observation with serial MRI scans or total surgical excision if possible. If the tumour is low grade and there is residual tumour follow up by serial scans. If the tumour is anaplastic use postoperative chemotherapy PCV or temozolamide. Radiotherapy is an option in adults and old children. For recurrent tumour redo surgical excision and chemotherapy plus/minus radiotherapy.**