

DIAGNOSIS OF A BRAIN TUMOUR: POSSIBLE SYMPTOMS

- A new seizure in an adult
- Gradual loss of movement or sensation in an arm or leg
- Unsteadiness or imbalance, especially if it is associated with headache
- Loss of vision in one or both eyes, especially if the vision loss is more peripheral
- Double vision, especially if it is associated with headache
- Hearing loss with or without dizziness
- Speech difficulty of gradual onset
- Nausea or vomiting that is most severe in the morning, confusion and disorientation, and memory loss.
- The following symptoms are usually not caused by a brain tumour, but may sometimes be as a headache, abnormal change in behavior, infertility or amenorrhea.

Based on the above mentioned symptomatology which is always backed up with a sound history taking, the next eminent step is the diagnostic imaging techniques that have evolved immensely over the past years and have become a valuable adjunct to the sphere of Neuro-oncology.

DIAGNOSTIC IMAGING: Contemporary imaging modalities

Imaging	Remarks	Pros	Cons
CT scan	First line imaging modality	Good anatomic visualization Cheaper & Faster More widely available Can be used with metal objects	Limited reconstruction ability Exposure to ionizing radiation Poor resolution Contrast reaction
MRI	Gold standard imaging modality	Unparalleled resolution True multiplanar imaging No exposure to ionizing radiation	Susceptible to motion artifacts Cannot be used with metal objects Claustrophobic, noisy, long times Expensive
MR Spectroscopy	Assesses tumour metabolites	Useful for discriminating radiation necrosis from tumour	Limited utility near bone, vessels or air spaces Wide variability in interpretation
MR Perfusion	Assesses blood flow & volume	Generally correlates with grade Useful to distinguish radiation necrosis from tumour progression	Limited utility near bone, vessels

Fig 1: Non-infiltrative Low Grade Glioma (LGG)/ Glioneuronal Tumours

(Juvenile Pilocytic Astrocytoma / Dysembryoblastic Neuro Ectodermal Tumours / Ganglioglioma / Subependymal Giant cell Astrocytoma/ Neurocytoma)

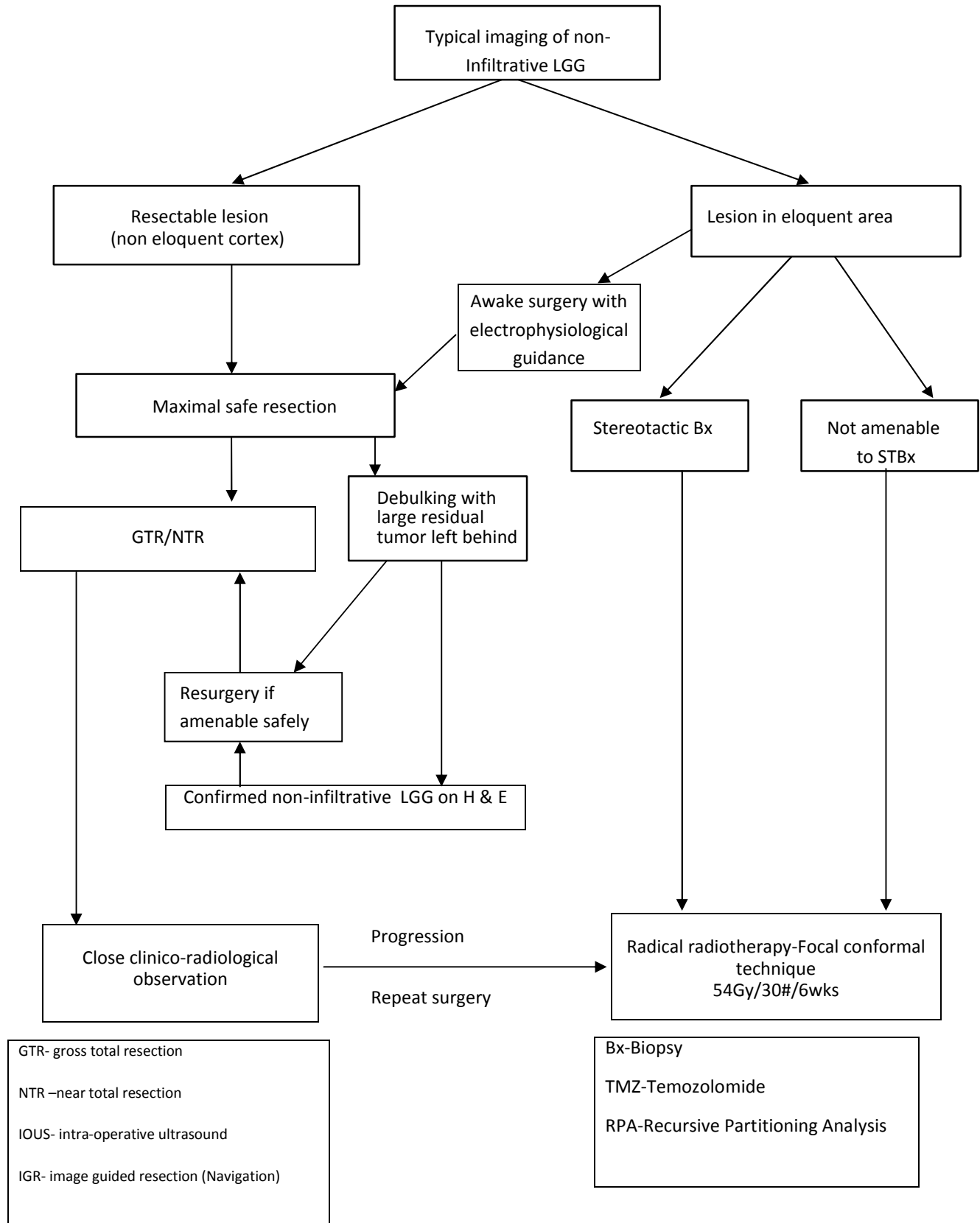


Fig 2: Infiltrating Low grade gliomas including Oligodendrogliomas (ODG)

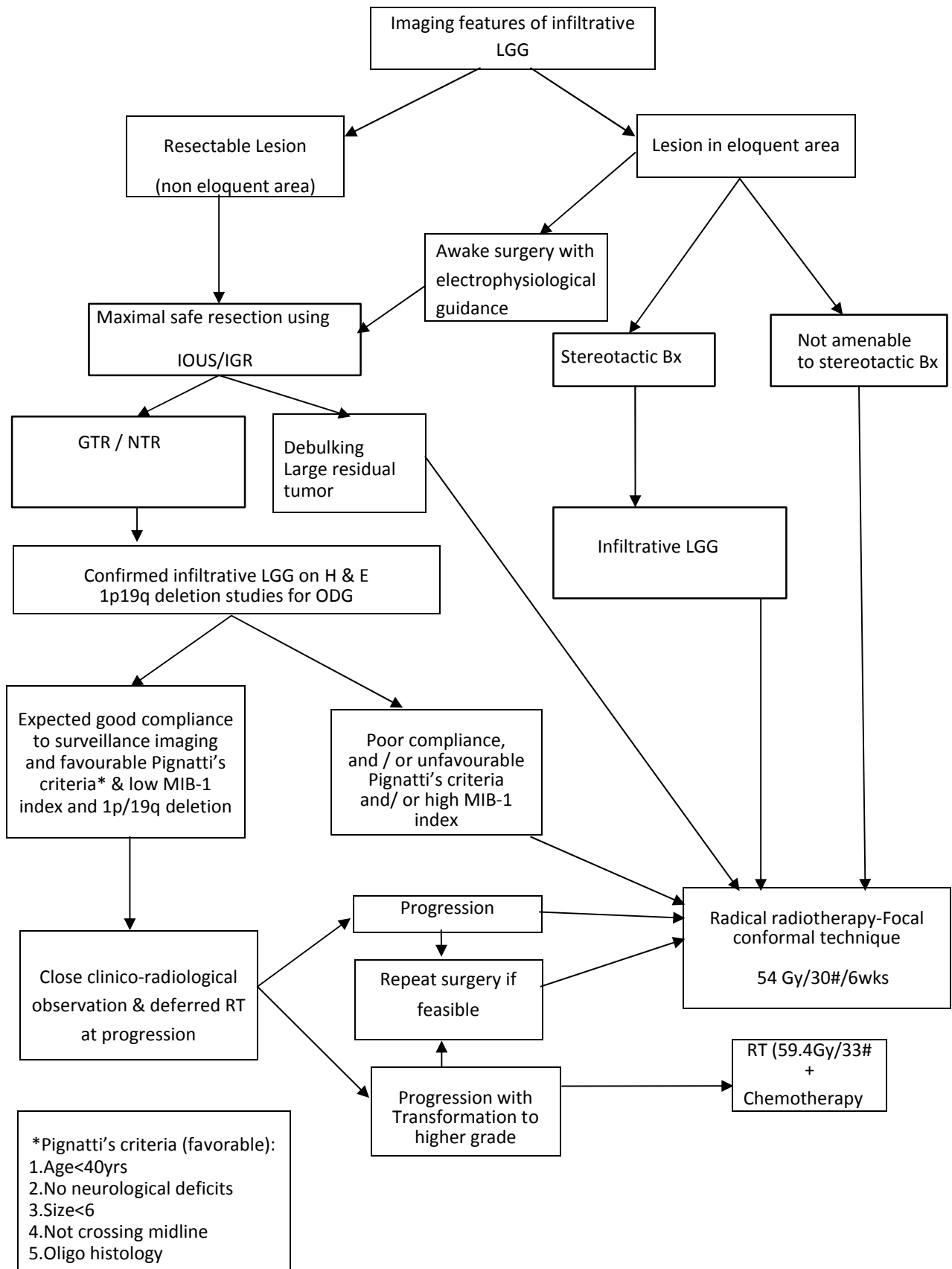


Fig 3: Anaplastic Astro/ Anaplastic ODG/ Anaplastic mixed AOA

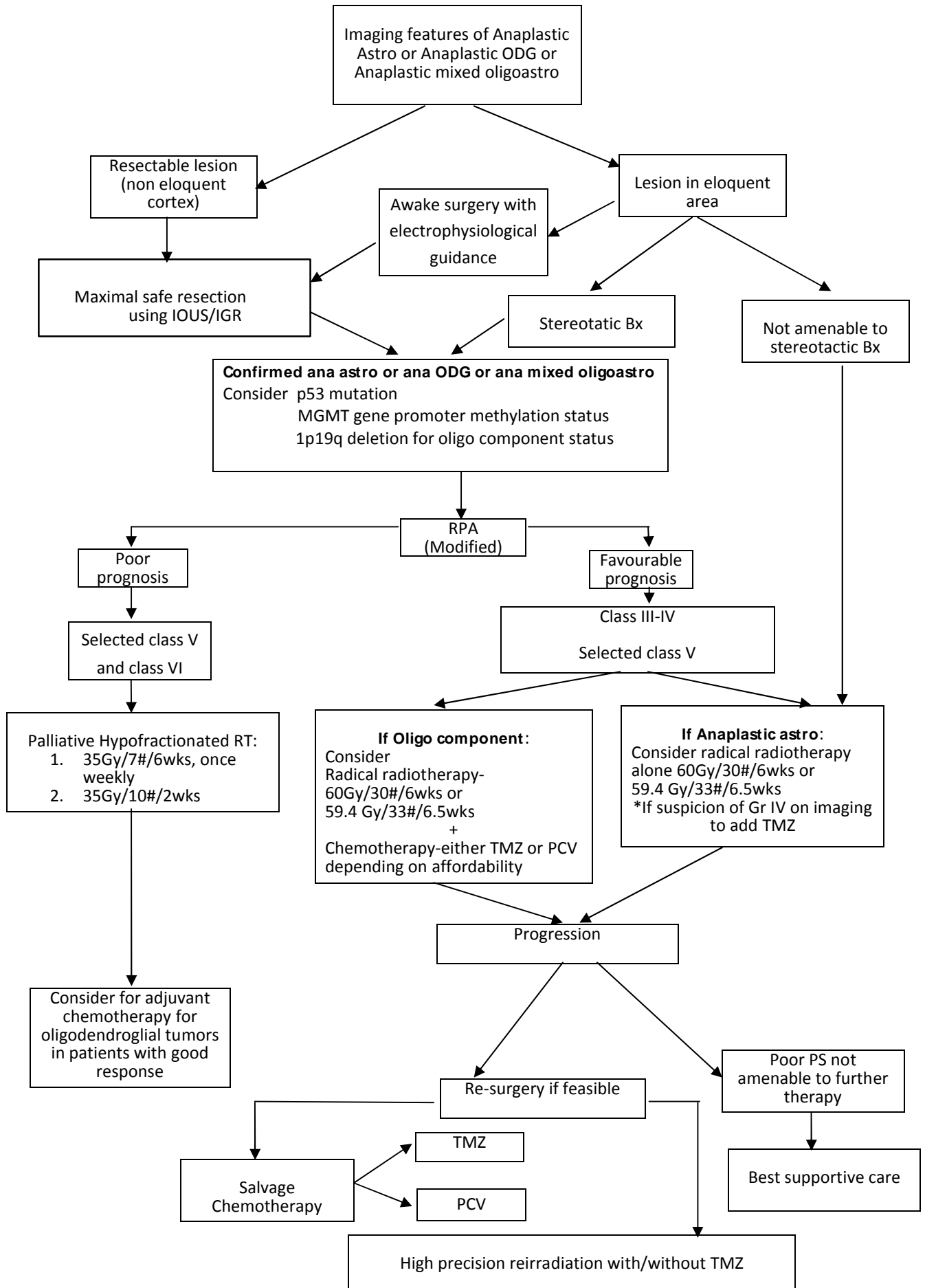


Fig 4: Glioblastoma (GBM)

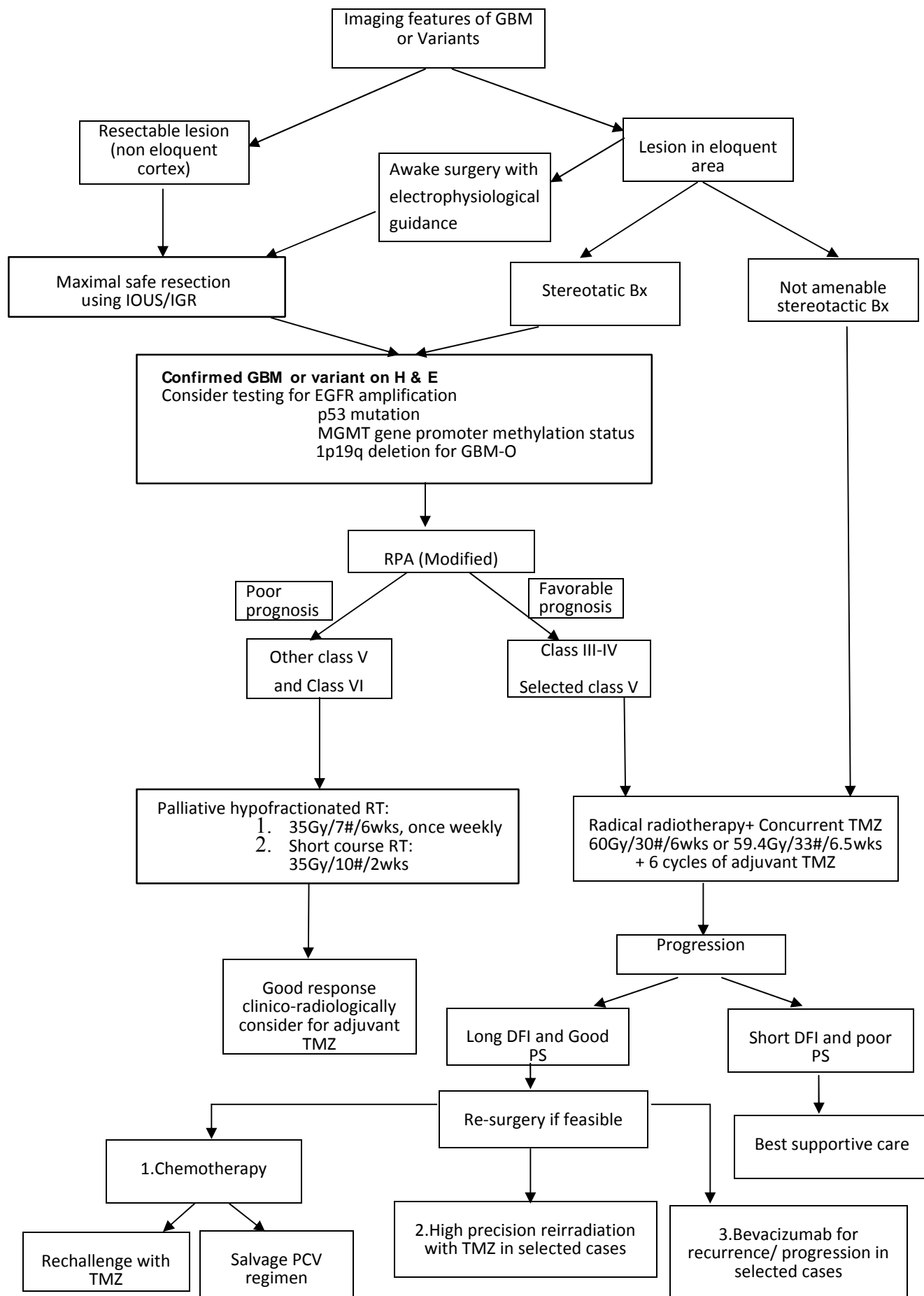


Fig 5: Ependymoma

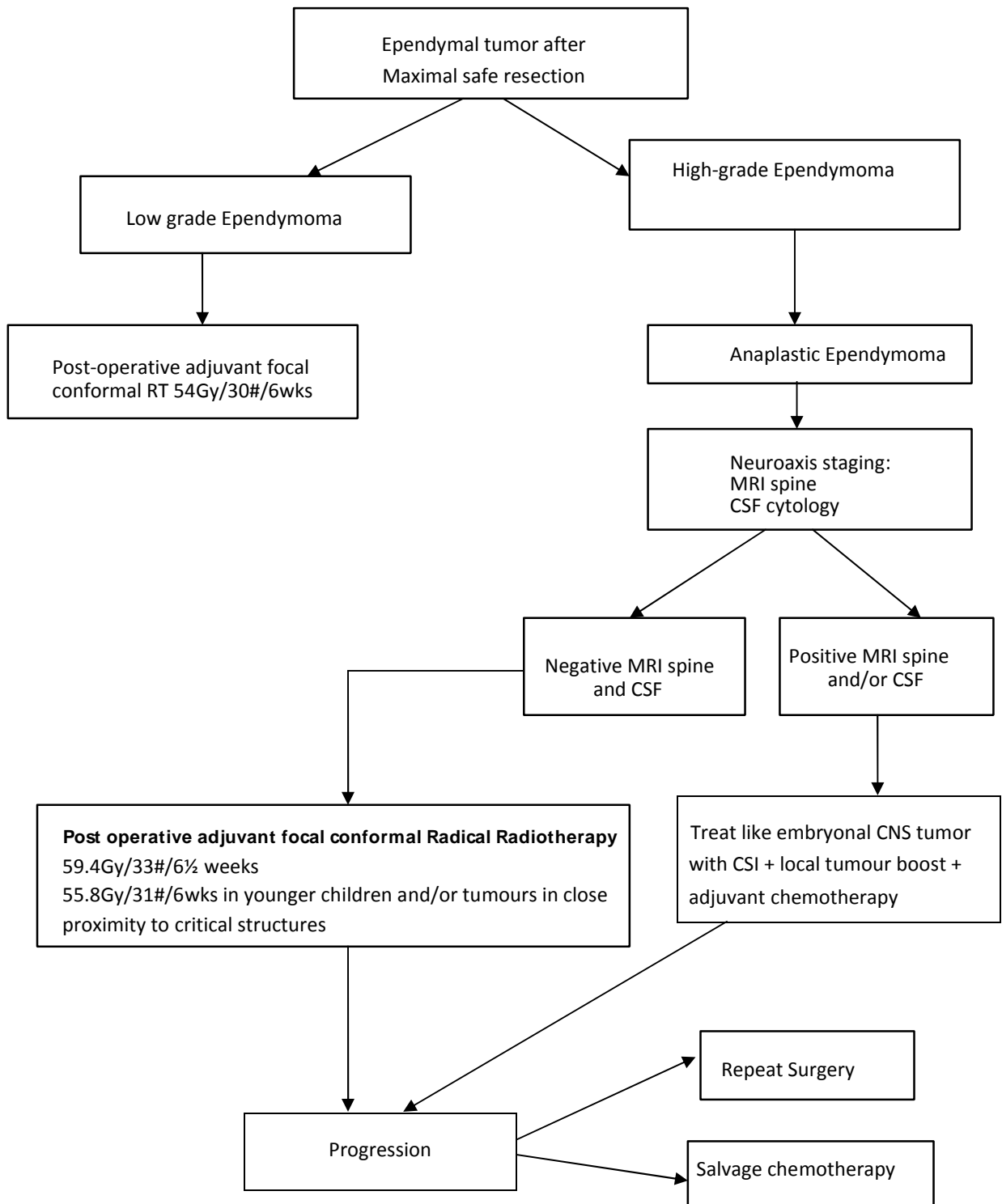


Fig 6: (DIPG / focal exophytic / cervicomedullary / tectal plate gliomas)

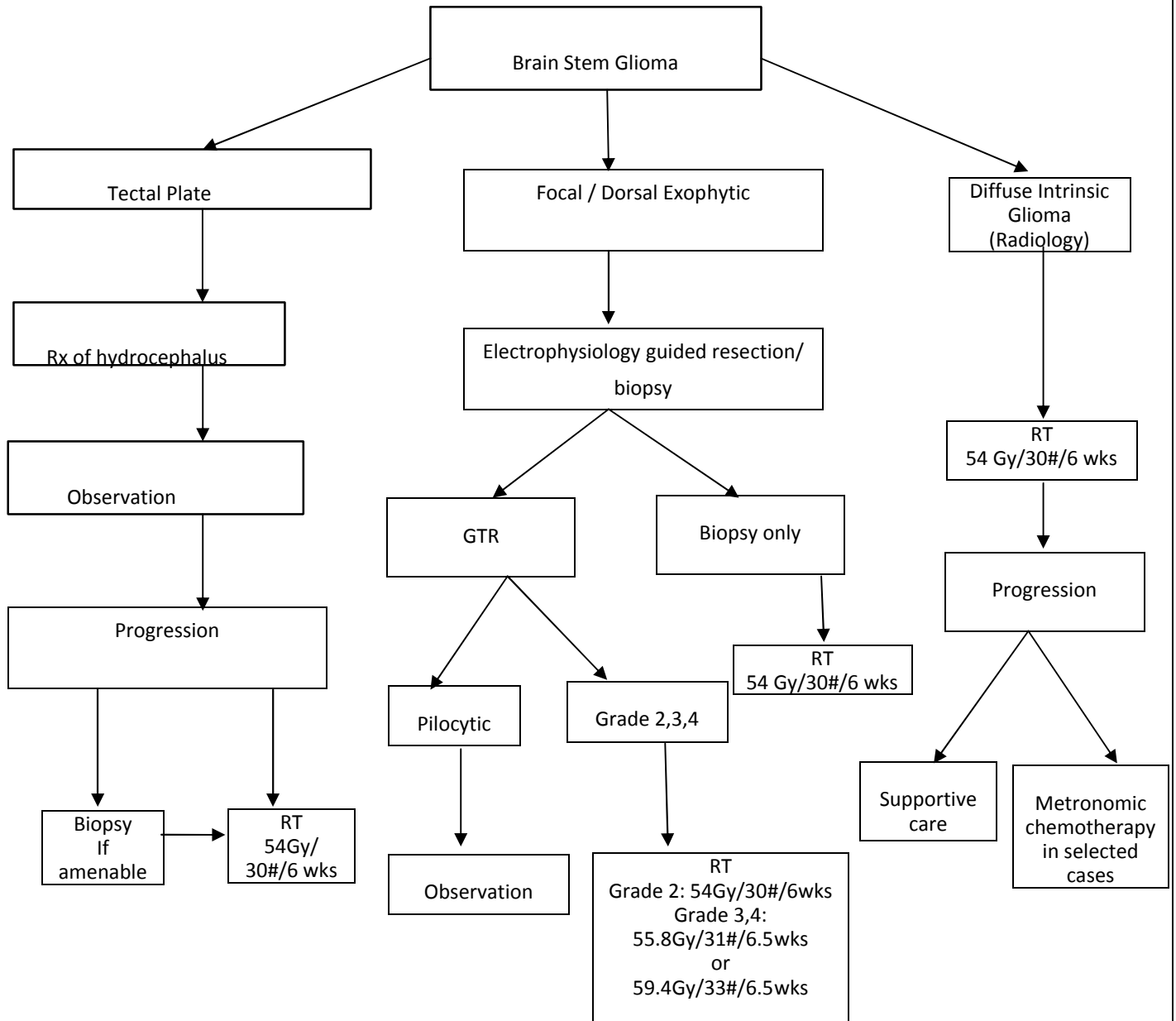


Fig 7: Primitive / Embryonal CNS tumours

(Medulloblastoma / PNET / ATRT / Ependyoblastoma / Pineoblastoma)

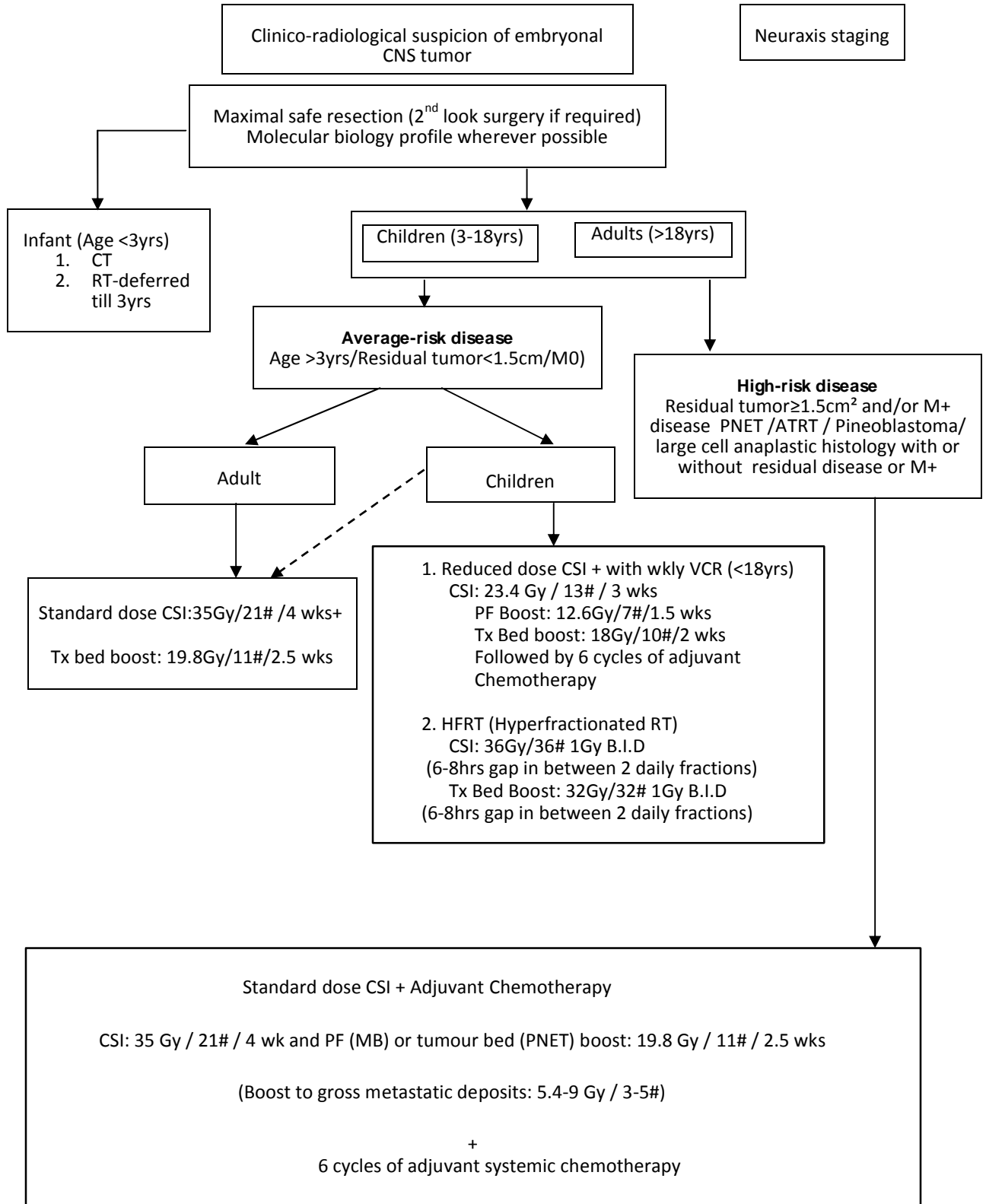


Fig 8: Craniopharyngioma

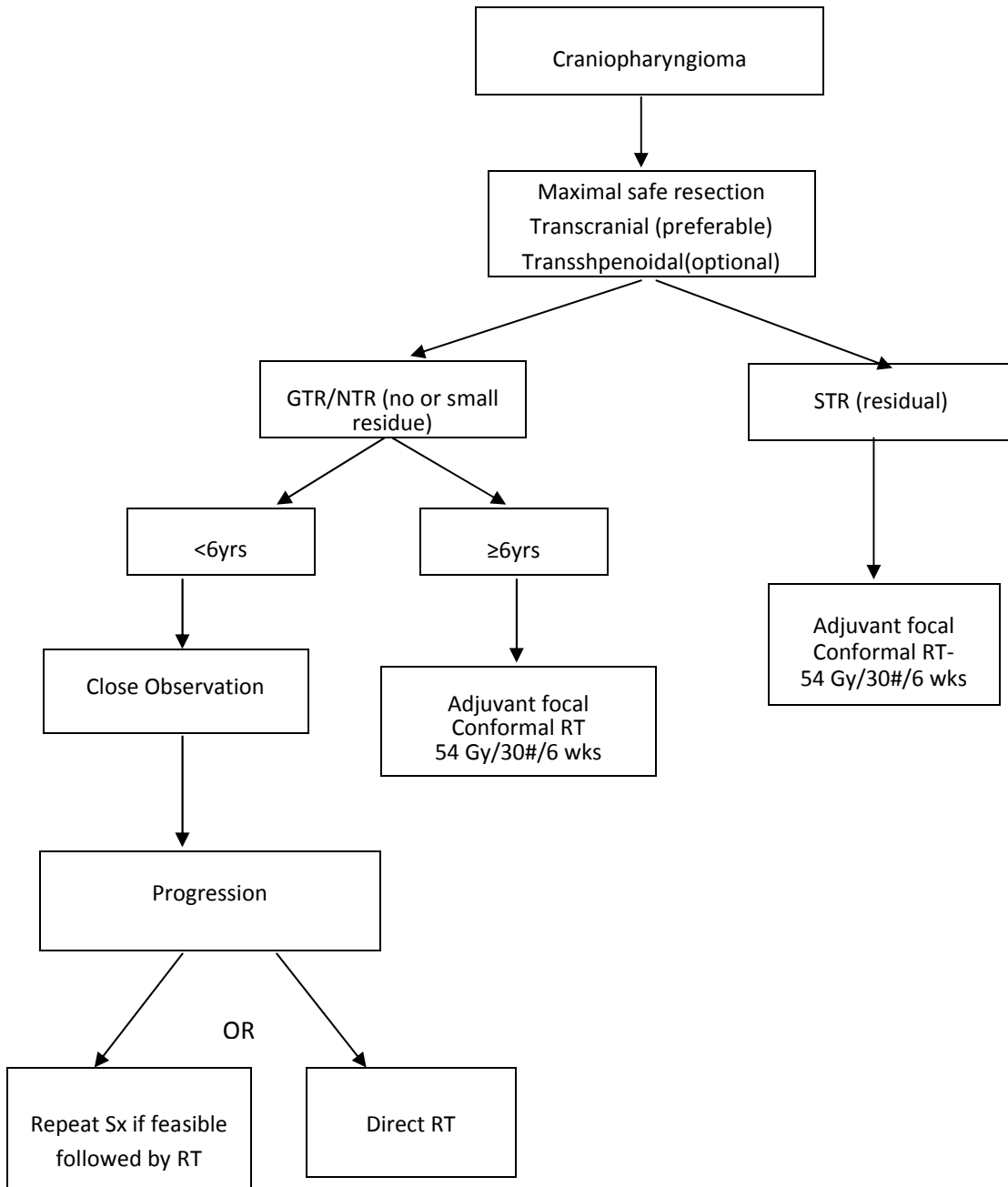


Fig 9: Pituitary Adenoma

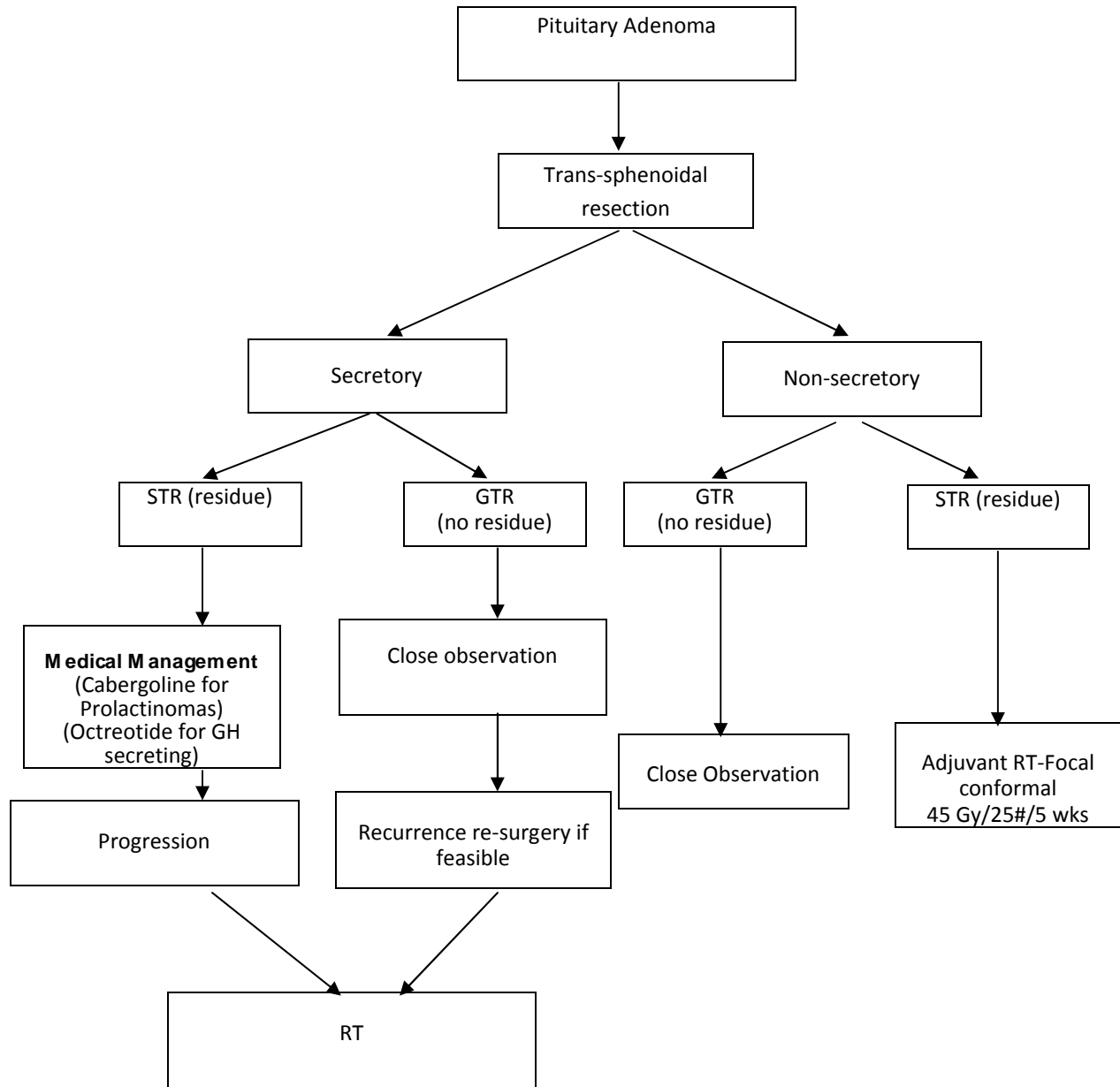
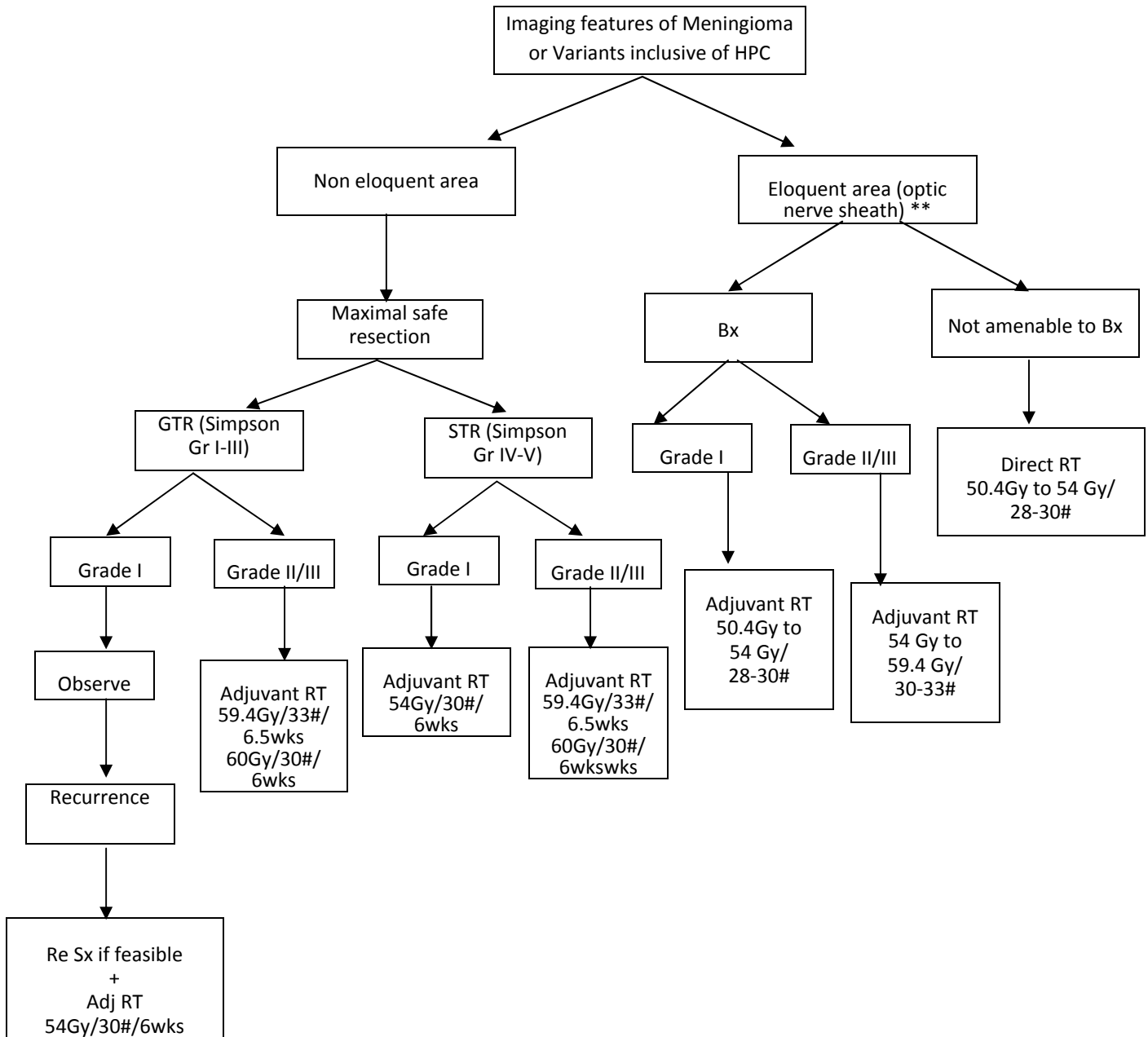
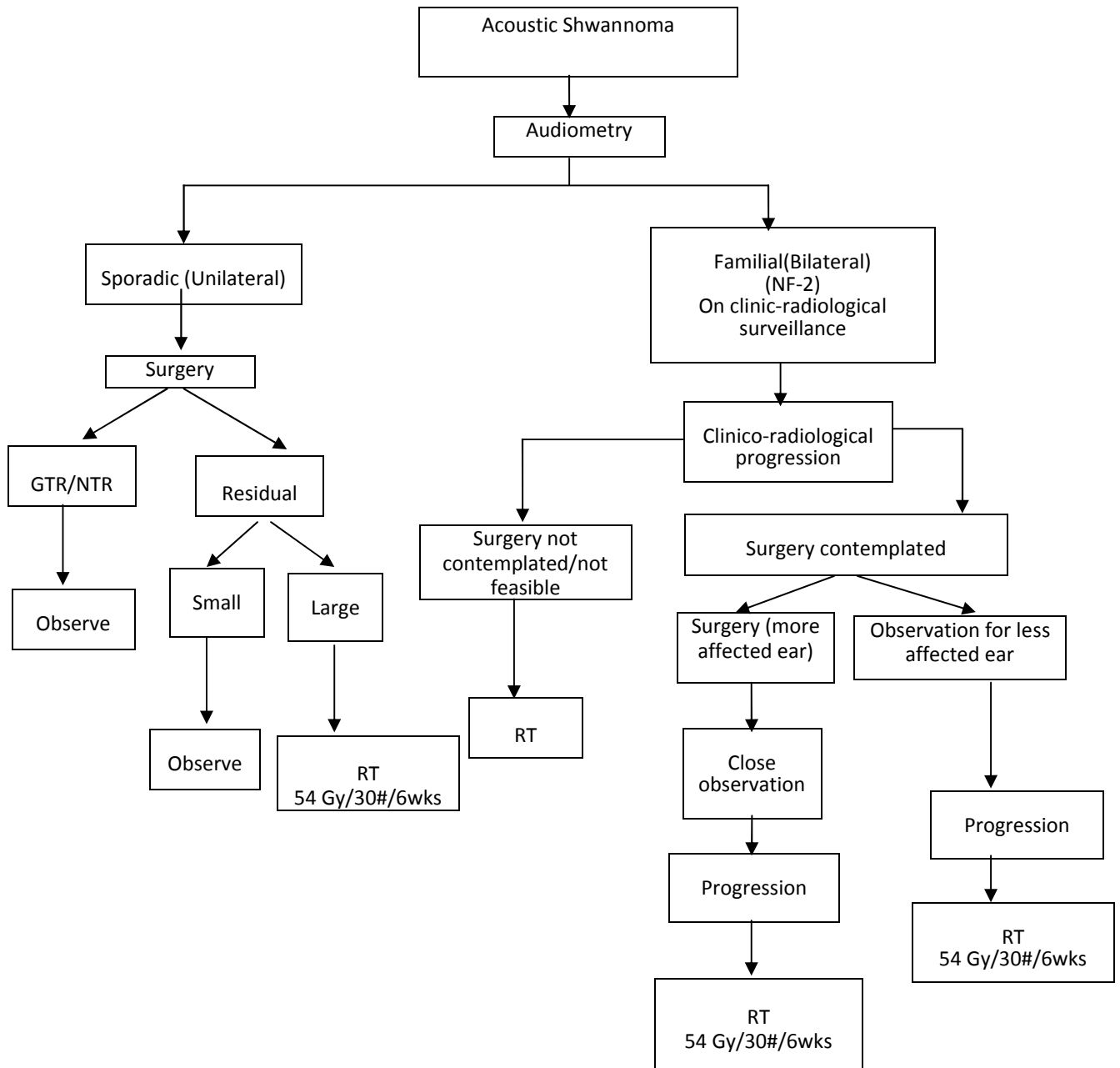


Fig 10: Imaging features of Meningioma or Variants including Hemangiopericytoma (HPC)



RT= focal conformal radiotherapy
 **Image guided IMRT is preferred

Fig 11: Acoustic Shwannoma



IMRT is preferred over conformal RT

