Anaplastic Astrocytoma

- Diffusely infiltrating malignant astrocytoma with anaplasia and marked proliferative potential
- WHO grade III
- Usually evolves from low-grade (diffuse) astrocytoma (WHO grade II) (75%)
- Occasionally arises de novo

Anaplastic astrocytomas and glioblastoma multiforme

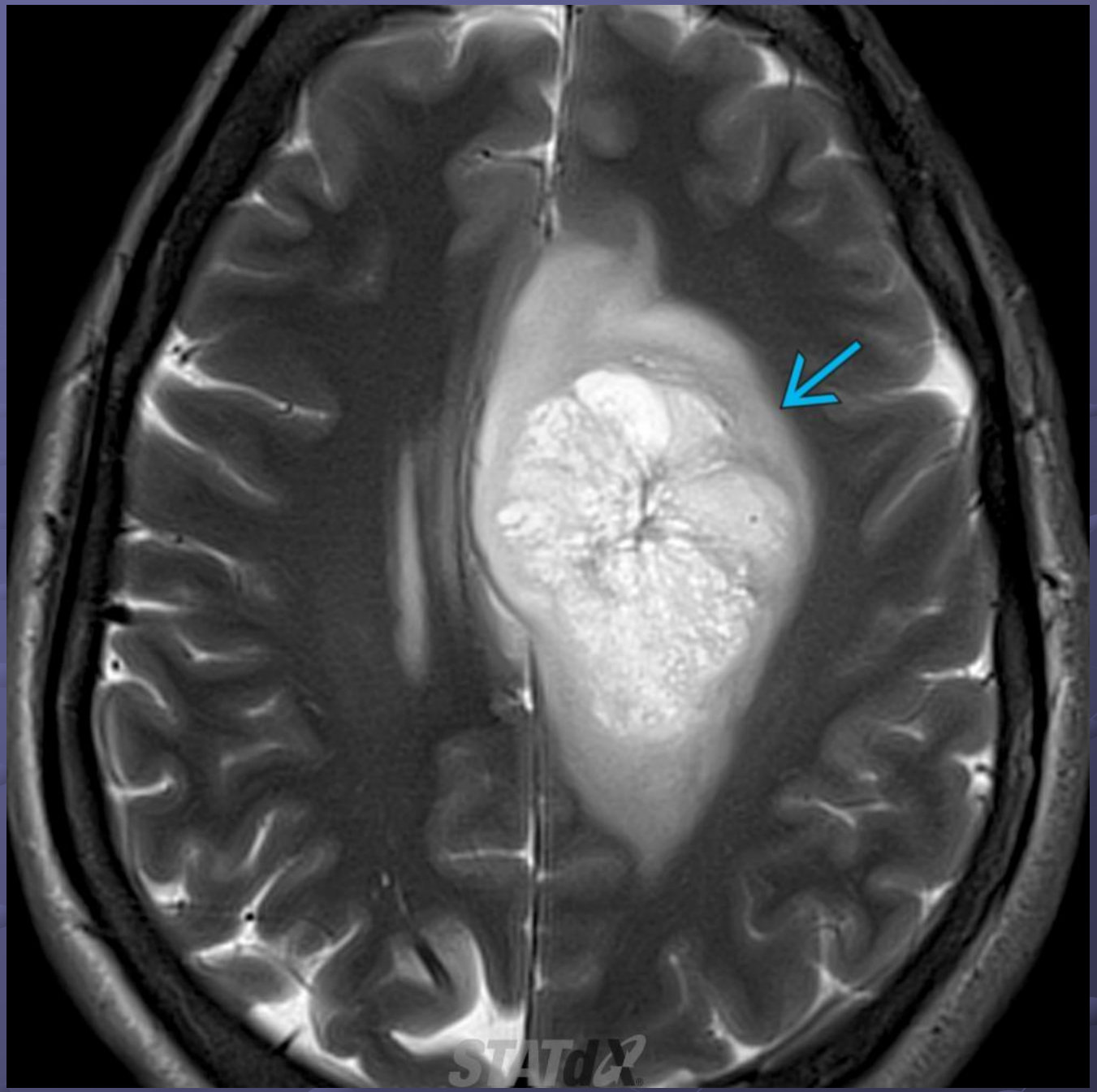
- May have a cystic appearance, but this appearance is caused by central necrosis.
- Notable peritumoral T2 hyperintensity is usually associated with these tumors

Clinical Issues

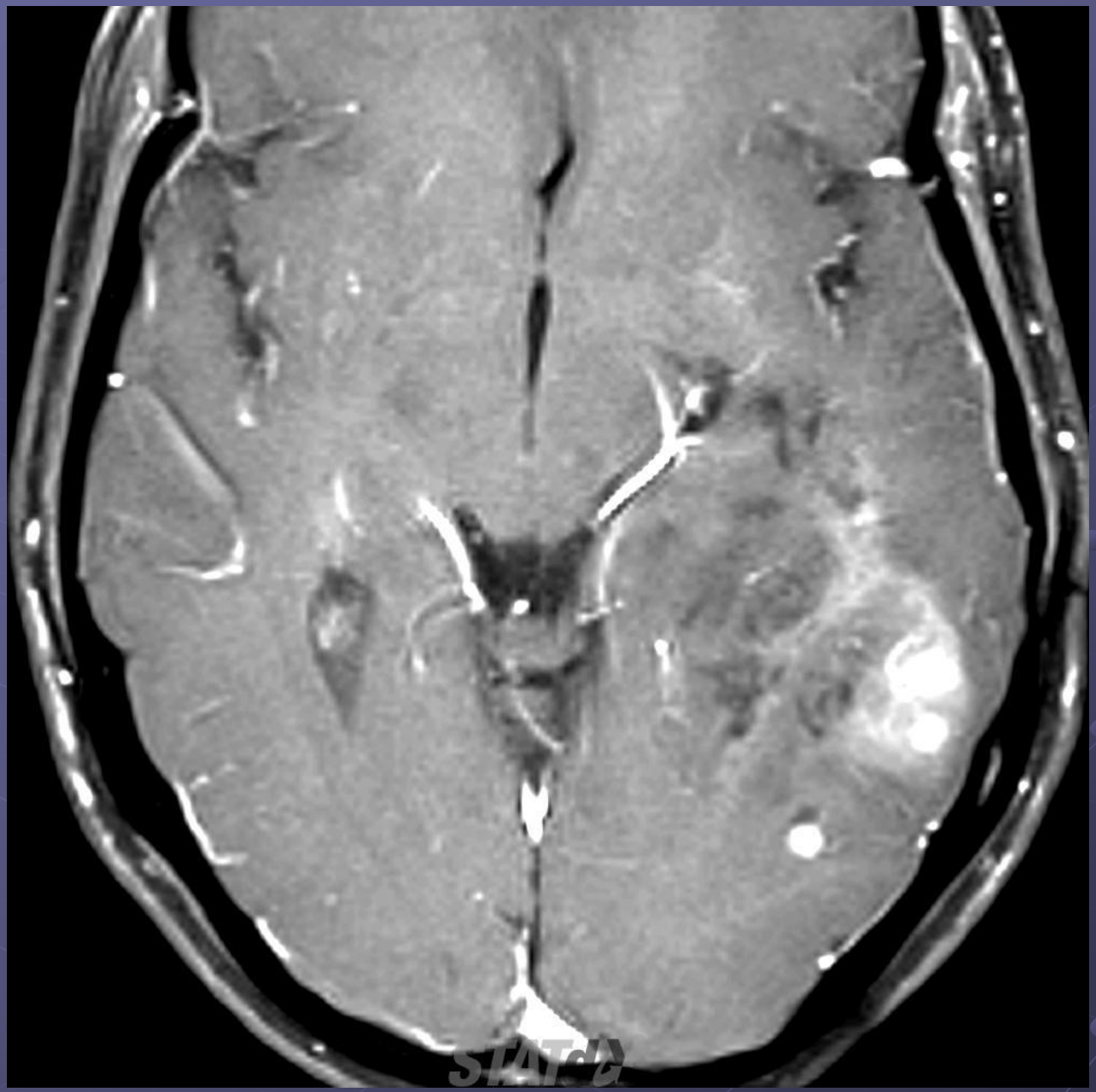
- Most common presentation: Marked clinical deterioration in patient with grade II astrocytoma
- Occurs at all ages, most common 40-50 years
- 1/3 of astrocytomas
- (+) and MGMT(+) associated with increased survival
- Median survival: 2-3 years

Imaging

- AA have histologic and imaging characteristics along spectrum between low-grade astrocytoma and GBM
- Usually no enhancement
- Less common: Focal, nodular, homogeneous, patchy enhancement
- Ring enhancement is suspicious for GBM



Axial T2 MR shows a heterogeneously hyperintense mass with local mass effect (cyan solid arrow) in the frontal lobe. AA, WHO grade III, was diagnosed at resection. These high-grade gliomas have an intrinsic tendency to degenerate into GBM.



Axial T1WI C+ MR in the same patient shows heterogeneous enhancement of the mass, a new finding in this patient with a grade II astrocytoma and clinical deterioration. Repeat biopsy disclosed a grade III astrocytoma. New enhancement in a lower grade astrocytoma is almost always malignant degeneration.