Glioblastoma Multiforme

Highly malignant, invasive, difficult-to-treat primary brain tumor

Frequency: 9,000 cases/year (peak age, 55–65 years)

Recurrence: rapid growth; size may double every 10 days

Median survival: ~1 year
Survival of adult patients with glioblastoma multiforme

Kaplan-Meier Survival Curves

Survival %

Months from Surgery
Pediatric Brain Tumors

Frequency: 3000 cases/year
Pediatric brainstem glioma

- Brainstem location represents 8-15% of all brain tumors in the pediatric population
- Usually inoperable tumors because of the particular location in the brain
Tumor cells multiply which results in growth
Normal growth is controlled
Why do tumor cells grow?

Tumor cells receive the instructions to grow but are insensitive to instructions to stop.
Propagation of neural stem cells

Blue: nucleus
Green: nestin
Nestin: marker of stem cells
Differentiation of neural stem cells in neurons and glia

Blue: nucleus

Green: GFAP astrocytes

Red: β-III Tub neurons