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Fifty years of DIPG: looking at the future with hope

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Abstract

Diffuse intrinsic pontine glioma (DIPG) is a primary brainstem tumor of childhood that carries a dismal prognosis, with median survival of less than 1 year. Because of the brain stem location and pattern of growth within the pons, Dr. Harvey Cushing, the father of modern neurosurgery, urged surgical abandonment. Such a dismal prognosis remained unchanged for decades, coupled with a lack of understanding of tumor biology and an unchanging therapeutic panorama. Beyond palliative external beam radiation therapy, no therapeutic approach has been widely accepted. In the last one to two decades, however, increased tissue availability, an improving understanding of biology, genetics, and epigenetics have led to the development of novel therapeutic targets. In parallel with this biological revolution, new methods intended to enhance drug delivery into the brain stem are contributing to a surge of exciting experimental therapeutic strategies.

Keywords: Brainstem; DIPG; Pontine glioma.