

The Impact of Vision Loss Among Survivors of Childhood Central Nervous System Astroglial Tumors

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Background: Although optic pathway gliomas (OPG) are rare in the general population, they are common and potentially morbid in NF1. It is difficult to gain access to large datasets of these patients. We hypothesized that gliomas that cause vision impairment are due to OPG in order to investigate the long-term impact of vision loss in OPG.

Methods: The Childhood Cancer Survivor Study provides data in adult survivors on cognitive/emotional function, education, income, employment, marital status, independent living, as well as pathology and vision status (no impairment, some vision loss [unilateral blindness, visual field deficits or amblyopia], or bilateral blindness). The effect of vision status on outcomes was examined using multivariable logistic regression, adjusting for age, gender, cranial radiation therapy and medical comorbidities.

Results: Among 587 adult survivors of childhood astroglial tumor, 102 (17%) had some vision loss and 39 (6.6%) were bilaterally blind. In multivariable analysis, only survivors with bilateral blindness were significantly more likely to be unmarried (adjusted odds ratio [95% confidence interval]: 4.7 [1.5,15.0]), live with a caregiver (3.1 [1.3,7.5]), and be unemployed (2.2 [1.1,4.5]) compared to those without visual impairment. Some vision loss without blindness was not significantly associated with any psychological or socio-economic outcomes.

Conclusions: Clinical management of OPGs centers on preservation of vision. Adult survivors of childhood astroglial tumors with bilateral blindness are more likely to live unmarried and dependently and be unemployed. Survivors with some remaining vision did not differ significantly from those without visual impairment. Preservation of some remaining vision may have an important effect on future psychological and socioeconomic outcomes.

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