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Season of tumor surgery in relation to deaths among brain tumor patients: does sunlight and month of surgery play a role in brain tumor deaths?

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The objective of this study is to investigate the effect at the season of the time of surgery on the survival of brain tumor patients. The population studied consisted of 101 patients (39 males and 62 females), gathered from a geographically large area in northern Finland (from 64 degrees N to 70 degrees N), aged between 20 and 82 years, with a solitary primary brain tumor treated surgically at the Oulu Clinic for Neurosurgery, Oulu University Hospital. The distribution of tumor surgery dates and mean hours of sunshine hours was analyzed by bimonthly periods. When comparing the proportion of deceased patients of all patients operated in each bimonthly period, a significant bimonthly peak in deaths was found in patients operated during the period of February to March (ratio 1.7, 95% CI 1.1-2.3). More than half of the patients who died during the peak period had grade III-IV gliomas. In 40% of the cases, the surgery time of deceased brain tumor patients occurred in the bimonthly period following the four darkest months of the year with the lowest amount of sunshine in northern Finland. The relation of low vitamin D level in the etiology and course of the disease as well as in treatment settings deserves further study.

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