

## PubMed

U.S. National Library of Medicine  
National Institutes of Health

Display Settings: Abstract

[Am J Clin Oncol.](#) 2011 Mar 4. [Epub ahead of print]

# Second Tumors in Pediatric Patients Treated With Radiotherapy to the Central Nervous System.

Galloway TJ, Indelicato DJ, Amdur RJ, Swanson EL, Smith AA, Marcus RB.

\*Department of Radiation Oncology at the University of Florida ‡Pediatrics, Division of Pediatric Hematology and Oncology, University of Florida, Gainesville †University of Florida Proton Therapy Institute, Jacksonville, FL.

### Abstract

**OBJECTIVE:** To determine the rate of second tumors in pediatric patients treated with radiotherapy to the central nervous system (CNS) with long-term follow-up.

**METHODS:** We retrospectively reviewed the charts of 370 consecutive pediatric patients with solid tumors and leukemia treated at the University of Florida from 1963 to 2006 with curative CNS radiotherapy. The median age was 8.1 years (range, 0.2 to 19.0 y). One hundred seventy-two (47%), 79 (21%), and 119 (32%) patients received focal, whole-brain, and craniospinal irradiation, respectively. Variables analyzed for prognostic value included primary tumor histology, patient age at primary treatment, volume of tissue irradiated, dose to the tumor bed, treatment with chemotherapy, and location of the primary tumor.

**RESULTS:** Eighteen second tumors were diagnosed in 16 patients. The actuarial incidences of second tumors were 3%, 8%, and 24% at 10, 20, and 30 years of follow-up, respectively. On univariate analysis, no single variable was found to be predictive of second tumor incidence. The most common second tumor after radiation for a primary solid CNS tumor was meningioma (63%), for which successful salvage was common (89%). Second gliomas were most common among patients treated for leukemia and were uniformly fatal. The most common cause of death among 5-year survivors was late relapse of their primary tumor.

**CONCLUSIONS:** The risk of second tumors after CNS radiation is significant and does not plateau with long-term follow-up. Most second tumors after radiotherapy for solid CNS tumors are meningiomas that can be successfully salvaged.

PMID: 21383606 [PubMed - as supplied by publisher]

[LinkOut](#) - more resources