

Low rates of recurrence and slow progression of pediatric pilocytic astrocytoma after gross-total resection: justification for reducing surveillance imaging.

[Dodgshun AJ](#)¹, [Maixner WJ](#)², [Hansford JR](#)¹, [Sullivan MJ](#)^{1,3}.

Author information

¹Children's Cancer Centre and.

²Department of Neurosurgery, Royal Children's Hospital; and.

³Murdoch Children's Research Institute, Melbourne, Victoria, Australia.

Abstract

OBJECTIVE Pilocytic astrocytomas (PAs) are common brain tumors in children. Optimal management of PA is gross-total resection (GTR), after which event-free survival (EFS) is excellent. The tempo of recurrences, when they do occur, is relatively sparsely reported, and there is no agreed upon surveillance recommendation for patients in this category. It has been suggested that surveillance MRI is performed too frequently and could be safely reduced in both frequency and duration. The authors conducted a retrospective review of pediatric patients with PA who underwent GTR at a single institution over an 18-year period and who had documented recurrences. **METHODS** All patients under 18 years of age who had undergone GTR of a PA between 1996 and 2013 were included in the study. Clinical, radiological, and tumor characteristics were recorded. **RESULTS** Sixty-seven patients met the criteria for GTR over the period studied. The 5-year EFS rate was 95% (95% CI 89%-100%) and overall survival was 100%. Recurrences showed a nonsignificant trend of occurring more commonly in patients with persistent nonenhancing FLAIR abnormalities after surgery, but there was no difference with regard to tumor location. All recurrences occurred before 3 years postresection, all were asymptomatic, and all patients were observed for at least one additional scan after the initial detection during routine surveillance MRI before further therapy was undertaken. **CONCLUSIONS** EFS and overall survival are excellent after GTR in this population with PAs.

Progression after recurrence occurs slowly and is asymptomatic. A less intensive schedule of MRI surveillance in this group of patients would result in time and cost savings, without compromising safety. The authors suggest a schedule of 6 MRI scans to be obtained postoperatively, at 3-6 months, then at 1, 2, 3.5, and 5 years.

KEYWORDS:

EFS = event-free survival; GA = general anesthesia; GTR = gross-total resection; PA = pilocytic astrocytoma; gross-total resection; oncology; pilocytic astrocytoma; surveillance

From: <http://www.ncbi.nlm.nih.gov/pubmed/26722760>