Longitudinal assessment of ataxia in children following surgical resection of posterior fossa tumours

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The ASPECT Study — Longitudinal assessment of ataxia in children following surgical resection of posterior fossa tumour

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**Background**

Ataxia is the most common motor problem in children with posterior fossa tumours. However, the natural history of ataxia following surgical resection is poorly understood.

**Objective**

To report the natural history of ataxia in the first two years following surgical resection of a posterior fossa tumour.

**Methods**

20 children (mean age 9.9 years, range 5-15 years) who had undergone resection of a posterior fossa tumour were assessed using the Scale for the Assessment and Rating of Ataxia (SARA)¹, Brief Ataxia Rating Scale (BARS)² and the Pediatric Evaluation of Disability Index mobility subscale (PEDI)³ at the following time points; initial post operative period, then at 3 months, 1 and 2 years post operatively.

**Results**

Ataxia scores rapidly improved between baseline and 3 months post-operative assessment (mean reduction in SARA 4.8, BARS 4.6). There were gradual improvements at 1 year and 2 years post-op (mean reduction SARA Year 1 0.6, Year 2 0.9; BARS Year 1 0.2, Year 2 0.9 respectively).

Functional scores demonstrated similar improvements quantified by a rapid increase in PEDI score between initial and 3 month assessments (mean increase 26) and gradual increases at 1 and 2 years (mean increase 2, 2.5 respectively).

**Conclusions**

The largest change in ataxia scores and functional mobility scores (PEDI) is demonstrated within the first 3 months post operatively. Ongoing gradual improvement in ataxia and mobility function was observed at 2 years. However, change after 3 months is less than the minimally clinically important difference reported for both the SARA (MCID reported as 1 in adults¹) and PEDI (MCID reported as 11% in children⁴). These results have implications for management of children with posterior fossa tumours.


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