

General Cognitive Functioning Following Hemispherectomy in Children with Intractable Seizures.

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Objective

While hemispherectomy is a viable option for intractable seizures in children, cognitive outcome data following hemispherectomy remains sparse, particularly in regards to studies of verbal and performance IQ. This current research explored intellectual functioning 5 to 30 years following hemispherectomy. It was hypothesized that VIQ would be higher than PIQ; specifically, that early left resection lead to lower VIQ and that the opposite would be found following early right resection.

Participants and Methods

Participants included 35 children and adults (ages 4 to 29) for whom left (n=25) or right (n=10) hemispherectomy was performed early in life. Wechsler IQ and selected subtest (i.e., Block Design and Vocabulary) scores were compared between children with left and right hemispherectomies using ANOVAs.

Results

No differences were found by side of resection on Full Scale IQ, Verbal IQ, Performance IQ, or the Vocabulary and Block Design subtests. However, those who received left hemispherectomies exhibited higher VIQ scores than PIQ scores compared those who received a right resection or hemispherectomy.

Conclusions

Utilizing cognitive outcome data following hemispherectomy from the UCLA Pediatric Surgery Program, we did not find differences in overall IQ based on side of hemispherectomy. Verbal skills predominated in individuals whose right hemisphere remained intact, which may reflect the brain's ability to compensate for the resected verbal hemisphere. Alternatively, it could be argued that language had shifted prior to surgery in order to compensate for the resected left hemisphere.

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