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Noninvasive presurgical data for one stage leucotomy in catastrophic epilepsy

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Key Words:

Noninvasive presurgical, one stage epilepsy surgery, leucotomy, catastrophic epilepsy, electroencephalograph (EEG), epileptogenic zone

Abstract:

Background:

Catastrophic epilepsy results in severe neurodevelopmental delay in infants due to frequent and/or long seizures. Therefore, consideration of early epilepsy surgery is essential for neurodevelopmental outcome. Once an infant with catastrophic seizures is identified as a surgical candidate, it is important that the surgical plan be carefully defined based on detailed pre-surgical evidence in order to minimize surgical complications in this age group.

Case Description: We present 2 infants with catastrophic epilepsy, epileptic spasms, and bihemispheric electroencephalographic abnormalities who underwent one-stage disconnection surgery based on a sound hypothesis of the epileptogenic zone. Each patient underwent an extensive noninvasive pre-surgical investigation followed by stereotactic disconnection leucotomy in a single stage after a noninvasive presurgical evaluation. The 2 children were followed for 24-36 months.

A seizure reduction by at least 90% (Engle Class I) was achieved in both cases with subsequent improvement in neurodevelopmental progress. There were no perioperative complications. Both patients had widespread cortical dysplasia on pathological evaluation.

Conclusion:

Careful consideration of the noninvasive pre-surgical workup can identify focal onset even in the presence of catastrophic epilepsy with widespread bilateral

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