

Peri-insular hemispherotomy

THE NATURE OF [functional hemispherectomy](#) continues to be misunderstood despite its 20-year history. Recently, we introduced the concept of peri-insular hemispherotomy, a functional hemispherectomy with minimal brain removal. To avoid additional confusion, a detailed neuroanatomic account of this operation, which has been performed in 11 patients, is presented. The name of the operative variant presented derives from the central importance of the exposure of the insula as the first surgical landmark. Incising along the circular sulcus that surrounds the insula not only allows access to the dilated ventricular system but also disrupts the entire internal capsule. A parasagittal callosotomy is performed from within the lateral ventricle by incising the medial ventricular roof. Projections through the anterior commissure are disrupted at the time of radical amygdalar resection. The posterior hippocampus need not be radically removed, because its posterior transection disconnects it. Overall, peri-insular hemispherotomy can be viewed as a radical hemispheric tractotomy, resulting in a completely disconnected hemisphere. Advantages include shorter operative times, a less stormy postoperative course, and better anatomic preservation of the operated hemisphere, thus presumably reducing long-term complications ¹⁾.

consecutive series of 43 children who underwent PIH. Sixty percent were males; there were slightly more left-sided surgeries. Median interval between seizure onset and surgery was 5 years. In more than half the cases, the anatomical substrate was congenital. There were few complications: one death, one hydrocephalus and two anatomically remote haemorrhages. Ninety percent of the patients have remained in Engel's class I epilepsy outcome.

Conclusions: There are clear indications for hemispherectomy in children. In some instances of incomplete deficit, timing of surgery remains a major concern. The less invasive approach to eliminate the influence of the diseased hemisphere, in our opinion, is with disconnective techniques of hemispherectomy, and among the latter, peri-insular hemispherotomy provides, in our opinion, the best complications-benefits ratio ²⁾

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Villemure JG, Mascott CR. Peri-insular hemispherotomy: surgical principles and anatomy. *Neurosurgery*. 1995 Nov;37(5):975-81. doi: 10.1227/00006123-199511000-00018. PMID: 8559348.

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Villemure JG, Daniel RT. Peri-insular hemispherotomy in paediatric epilepsy. *Childs Nerv Syst*. 2006 Aug;22(8):967-81. doi: 10.1007/s00381-006-0134-3. Epub 2006 Jun 29. PMID: 16804712.

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