Parietooccipital disconnection

Functional hemispherectomy/hemispherotomy is a disconnection procedure for severe medically refractory epilepsy where the seizure foci diffusely localize to one hemisphere. It is an improvement on anatomical hemispherectomy and was first performed by Rasmussen in 1974. Less invasive surgical approaches and refinements have been made to improve seizure freedom and minimize surgical morbidity and complications. Key anatomical structures that are disconnected include the 1) internal capsule and corona radiata, 2) mesial temporal structures, 3) insula, 4) corpus callosum, 5) parietooccipital connection, and 6) frontobasal connection. A stepwise approach is indicated to ensure adequate disconnection and prevent seizure persistence or recurrence. In young pediatric patients, careful patient selection and modern surgical techniques have resulted in > 80% seizure freedom and very good functional outcome. Young et al. summarized the history of hemispherectomy and its development and present a graphical guide for this anatomically challenging procedure. The use of the osteoplastic flap to improve outcome and the management of hydrocephalus are discussed [1)].

Extensive multilobar cortical dysplasia in infants commonly is first seen with catastrophic epilepsy and poses a therapeutic challenge with respect to control of epilepsy, brain development, and psychosocial outcome. Experience with surgical treatment of these lesions is limited, often not very encouraging, and holds a higher operative risk when compared with that in older children and adults.

Two infants were evaluated for surgical control of catastrophic epilepsy present since birth, along with a significant psychomotor developmental delay. Magnetic resonance imaging showed multilobar cortical dysplasia (temporoparietooccipital) with a good electroclinical correlation. They were treated with a temporal lobectomy and posterior parietooccipital disconnection.

Both infants had excellent postoperative recovery and at follow-up (1.5 and 3.5 years) evaluation had total control of seizures with a definite “catch up” in their development, both motor and cognitive. No long-term complications have been detected to date.

The incorporation of disconnective techniques in the surgery for extensive multilobar cortical dysplasia in infants has made it possible to achieve excellent seizure results by maximizing the extent of surgical treatment to include the entire epileptogenic zone. These techniques decrease perioperative morbidity, and Daniel RT et al. believe would decrease the potential for the development of long-term complications associated with large brain excision [2)].

Unclassified

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