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].

1)
Young CC, Williams JR, Feroze AH, McGrath M, Ravanpay AC, Ellenbogen RG, Ojemann JG, Hauptman JS. Pediatric functional hemispherectomy: operative techniques and complication avoidance. Neurosurg Focus. 2020 Apr 1;48(4):E9. doi: 10.3171/2020.1.FOCUS19889. PubMed PMID: 32234987.