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# Epileptiform abnormalities in the disconnected hemisphere are common in seizure-free patients after hemispherectomy

Majed Alzahrany<sup>1,2</sup>, Rawyah Alnakhli<sup>1,3</sup>, William Bingaman<sup>1</sup>, Elaine Wyllie<sup>1</sup>, Ahsan N. Moosa<sup>1</sup>



 <sup>1</sup> The Charles Shor Epilepsy Center, Neurological Institute, Cleveland Clinic, Cleveland, Ohio, USA
<sup>2</sup> King Abdulaziz University, Division of Neurology, Department of Medicine, Jeddah, Saudi Arabia
<sup>3</sup> Dr. Sulaiman Al Habib Hospital, Division of Neurology, Riyadh, Saudi Arabia

# Purpose of the Study

- Hemispherectomy is a common and effective pediatric epilepsy surgery.
- Two-thirds of children become seizure-free after various forms of hemispheric disconnection.
- EEGs are routinely performed on follow-up to decide on weaning off ASM after surgery.
- The spectrum of EEG abnormalities in the disconnected hemisphere in seizure-free patients after hemispherectomy has not been well characterized.
- Using 50 consecutive patients who were seizure-free after various forms of hemispheric disconnection, we describe the EEG findings after hemispheric disconnection.

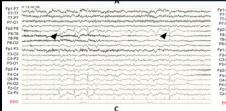


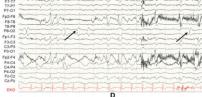
# Results: Post-operative EEG findings in 50 Patients

Finding	Frequency of abnormality
Slowing & attenuation of physiological rhythms in the operated hemisphere	100%
Epileptiform discharges in the operated hemisphere -40	80%
No epileptiform discharges on either side -9	18%
Epileptiform discharges exclusively in the <b>un-operated hemisphere</b> - 1	2%
Bilateral independent epileptiform discharges - 6	12%
Lateralized periodic discharges in the operated hemisphere - 3	6%
<b>EEG seizures</b> on the side of surgery without spread to the other hemisphere and without clinical signs- 4	8%



# Repetitive Epileptiform discharges in the operated hemisphere





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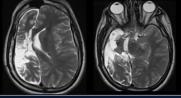
## Lateralized periodic discharges in the operated hemisphere

### F7-T7 T7-P7 F7-T7 P7-01 Fp2-F8 F8-T8 F8-T8 T8-P8 TR-PR P8-02 P8-02 En1-E3 P3-01 P1.01 Fp2-F4 F4-C4 EACA C4-P4 C4.P4 Er.Cr EKG С Fp1-F7 . 170 LF 118 CAL 198 T7-P7 P7.01 Fp2-F8 F8-T8 TR.PR P8-02 Fp1-F3 F3-C3 1 Fp2-F4 F4-C4

Disorders

### B PP-17 PP-27 PP-27

D



# Sporadic Epileptiform discharges in the operated hemisphere

Fp1-F7 F7-T7 T7-P7

P7-01

En2.E8

FB-TE

P8-02

Fo1-F3

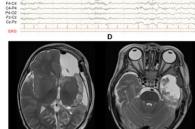
C3.P3

Fp2-F4

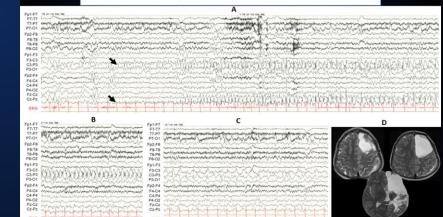
T8-P8

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Fp2-F4	**************************************
F4-C4	$\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $
C4-P4	www.Marganghanghanghananingananinganghanghanghanghanghanghanghanghanghan
P4-02	
Fz-Cz	
Cz-Pz	
EKG	

### С Fp1-F7 1.17-18 CAL 198 T7-P7 P7-01 Fp2-F8 F8-T8 T8-PE P8-02 Fp1-F3 F3-C3 C3-P3 P3-01 Fp2-F4 F4-C4 C4-P4 P4-02 CZ.P



# EEG seizures on Operated Side without Clinical Signs



# Key Points

- The majority of patients (80%) who are seizure-free after disconnective hemispherectomy continued to show epileptiform discharges in the operated hemisphere.
- EEG seizures in the operated hemisphere were noted in 8% of seizure-free patients, with no clinical signs.
- The disconnected hemisphere may continue to show epileptiform discharges but does not cause clinical seizures after effective hemispheric disconnection.
- Epileptiform abnormalities on EEG on the operated side should not preclude tapering, nor prompt restarting of antiseizure medication in seizure-free patients.

