

## **IMPAIRED MESIAL SYNCHRONIZATION IN TEMPORAL LOBE EPILEPSY**

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**Objective:** Despite its controversial use in neurology as a useful diagnostic procedure for epilepsy, Foramen Ovale Electrodes (FOE) has shown in recent years its value as a safe and very informative tool in lateralizing and localizing epileptogenic areas. The aim of the present work is to show how FOE together with synchronization analysis can shed new and valuable information regarding mesial temporal organization in Temporal Lobe Epileptic (TLE) patients. **Methods:** Using a cluster technique, we analyzed 17 TLE patients' records of FOE activity during the inter-ictal state.

**Results:** Our results show that electrical activity in the ipsi-lateral side behaves in a less cohesive fashion than the contra-lateral one. There exists a clear tendency in the mesial area of the epileptic side to be organized as isolated clusters of electrical activity, as compared with the contra-lateral side, which is organized in the form of large clusters of synchronous activity. The number of desynchronized areas is larger in the epileptic side than in the contra-lateral side in 16 out of 17 TLE patients.

**Conclusions:** Our results imply that the mesial area responsible for the seizures is less synchronous than the contra-lateral; the different kind of synchronous organization accounts for a lower synchronization activity at the epileptic side, suggesting that this lack of synchronous cluster organization would favour the appearance of seizures.