# LENNOX AND LENNOX LIKE - SURGICAL CHALLENGES: **CASE SERIES AND LITERATURE REVIEW**



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Lennox-Gastaut syndrome (LGS) is a severe epilepsy phenotype with characteristic electroclinical features despite diverse etiologies. Various clinical trials demonstrated the usefulness of different drugs (including rufinamide, clobazam, lamotrigine, topiramate, or felbamate), ketogenic diet, ressective surgery, corpus callosotomy, and vagus nerve stimulation in the treatment of epileptic manifestations. The outcome of LGS often remains disappointing regarding seizure control or cognitive functioning.

#### OBJECTIVE

The aim of this paper is to describe the surgical results of a retrospective cohort of ten patients with Lennox and Lennox like submitted to neurosurgical treatment between 2006 and 2022. The primary objective is to assess the overall outcome of these patients undergoing surgical therapy and to point to evidence of feasibility of surgical therapy in controlling and reducing the number, frequency and intensity of epileptic seizures

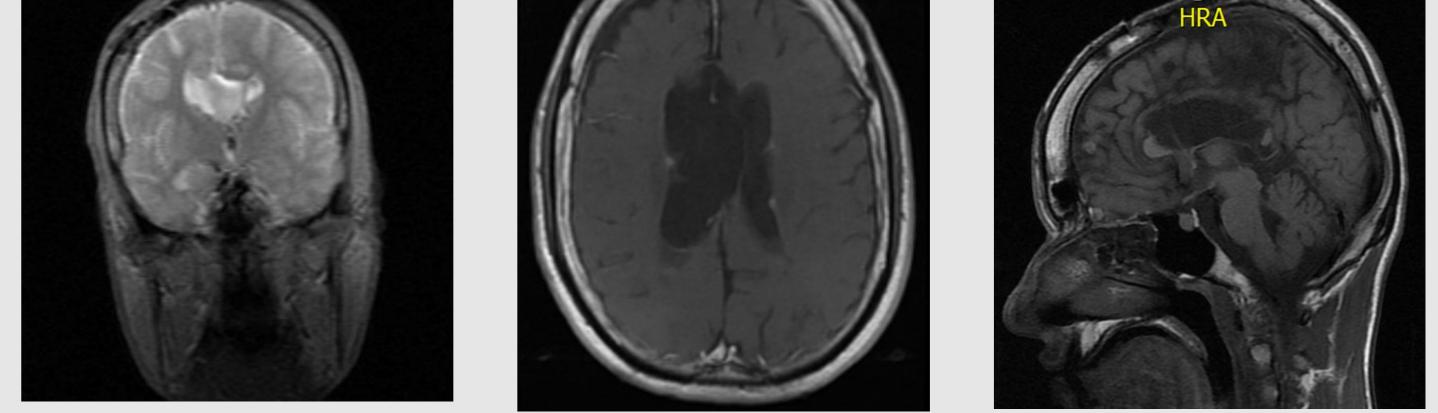
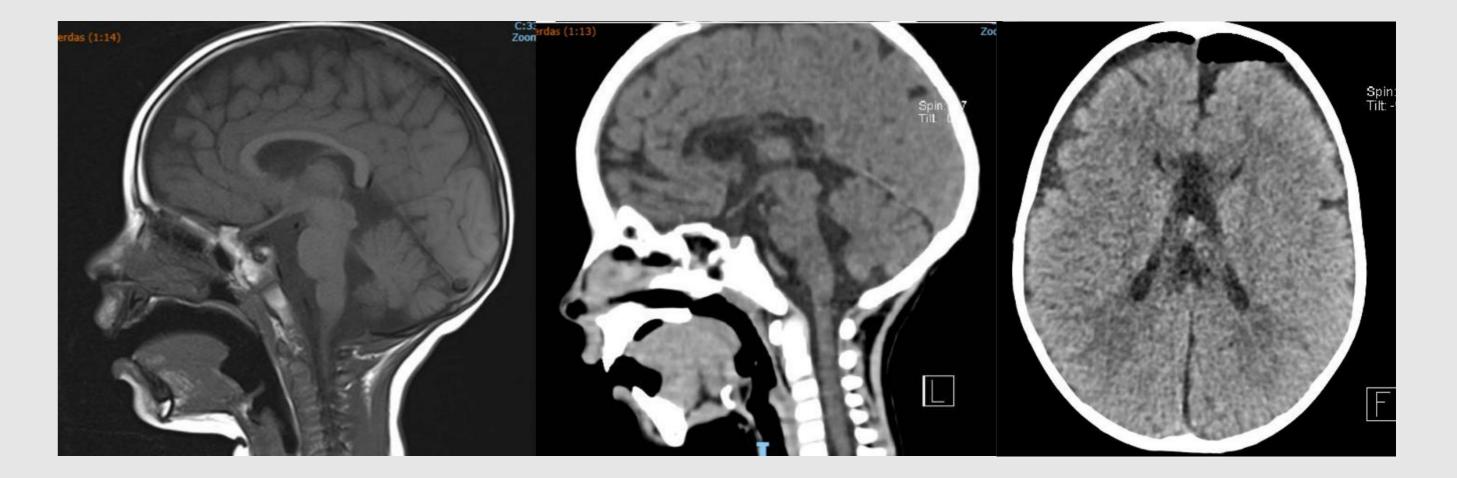


FIGURE 1: Coronal section t2, axial section t1 and sagittal section t1 showing the subtotal removal of the corpus callosum.



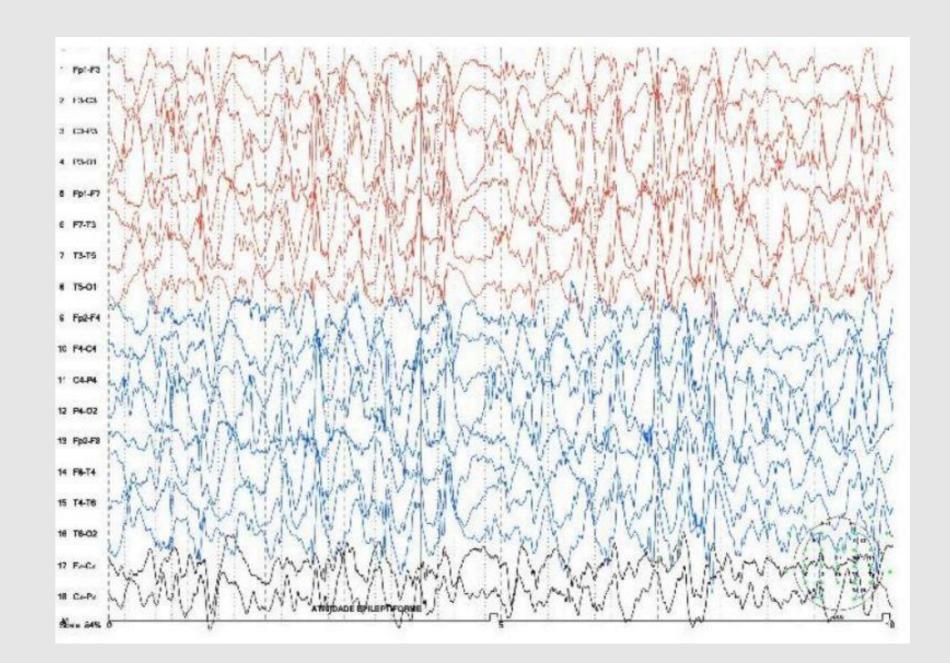
#### FIGURE 2:Pre and post operative sargital MRI – Total calosottomy.

#### **METHODS**

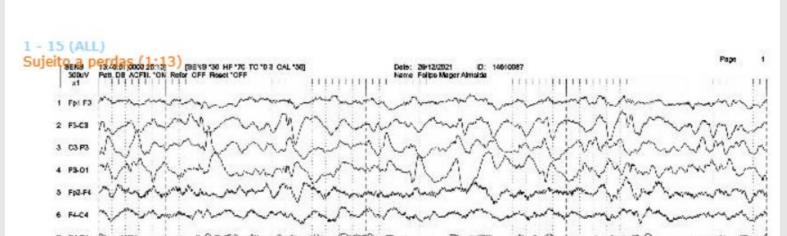
We compared clinical parameters, including sex, age, seizure duration, history, MRI findings, extent of CC, number of antiepileptic drugs, and neuropsychological state of 10 children undergoing surgical therapy.

### RESULTS

10 patients with Lennox or Lennox like were included, 8 men and 2 women; age between 2 and 18 years; seizure duration between 1 and 18 years; MRI findings were tuberous sclerosis, normal MRI, microcephalic, double cortex and multiple calcification; number of antiepileptics between 3 to 7; and neuropsychomotor deficit in all, two of them with mild neurological deficit. Surgical procedures were: 2 patients (1 male and 1 female) underwent subtotal callosotomy only; 6 males and 1 female underwent callostomy followed by vagus nerve stimulation; 01 male underwent VNS first and them subtotal callosotomy. CC scored significantly better than VNS for >50% reduction in atonic seizures, while vns scored significantly better than callosotomy for >50% reduction in focal



## FIGURE 3: Preoperative EEG showing continuous epileptiform activity



seizures. Both showed improvement of attention results.

#### CONCLUSION

Lennox and Lennox like are still challenger patients with drug resistant epilepsy. The surgical strategies (implantable neuromodulation devices and callosotomy) are palliative and in these ten cases has been shown to be efficient in reducing the number, frequency and intensity of the crises. However, more studies need to be carried out.

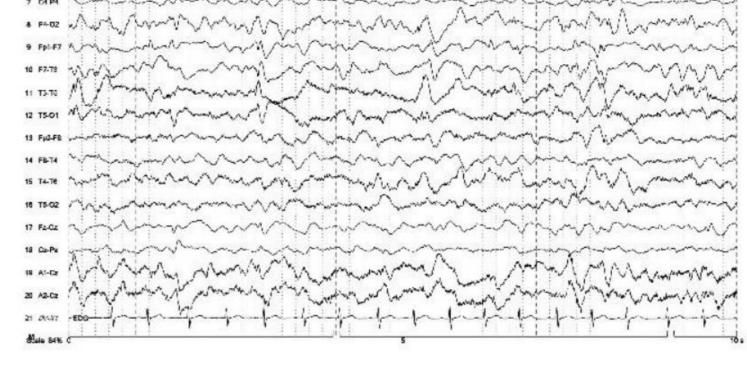


Figure 4: Electroencephalogram obtained in a hospital environment after total callosotomy, showing that the bilateral paroxysm had moved to the left parietal lobe, with no electrographic seizures.

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