

Comparing characteristics and outcome of palliative and definitive pediatric epilepsy surgery patients using the Pediatric Epilepsy Research Consortium (PERC) Surgery Database

Surgery Interest Group 1.227

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RATIONALE

- Over 1 million people in the United States have epilepsy, and only 50-65% achieve seizure freedom with medication.
- Epilepsy is considered pharmacoresistant when a patient has failed two appropriately used and titrated anti-seizure medications (ASMs)
- Palliative epilepsy surgery is considered for pharmacoresistant patients who are not candidates for definitive procedures.
- Palliative epilepsy surgery is often seen as a "last resort" compared to definitive surgical options.
- Patients with pharmacoresistant epilepsy who undergo palliative surgeries can have seizure reduction outcomes as good, or better than additional medication trials

METHODS

- The PERC Epilepsy Surgery project is a prospective cross-sectional study collecting common data on all children referred for surgery across over 20 US pediatric epilepsy centers.
- Inclusion criteria: age 0-18y presenting for initial surgical evaluation with final surgical decision rendered.
- We included all children with completed surgical therapy characterized as definitive (intended to achieve seizure freedom) or palliative.
- Acquired information included demographics, type of first seizure and etiology as shown in figures 1 and 2, and MRI results.
- Additional variables reviewed included age of seizure onset, age at referral, time to referral from seizure onset, number of failed anti-seizure medications, and time to referral from second anti-seizure medication (ASM) failure (figure 3). Surgical outcome was grouped as seizure freedom, >90% reduction, >50% reduction, or <50% reduction.

RESULTS

- 402 patients with completed epilepsy surgery were identified. We analyzed 319 patients with complete data sets.
- Definitive procedures were performed in 215 (67%) and palliative in 104 (33%).

Figures 1 & 2 number of patients and % of patients for definitive and palliative groups

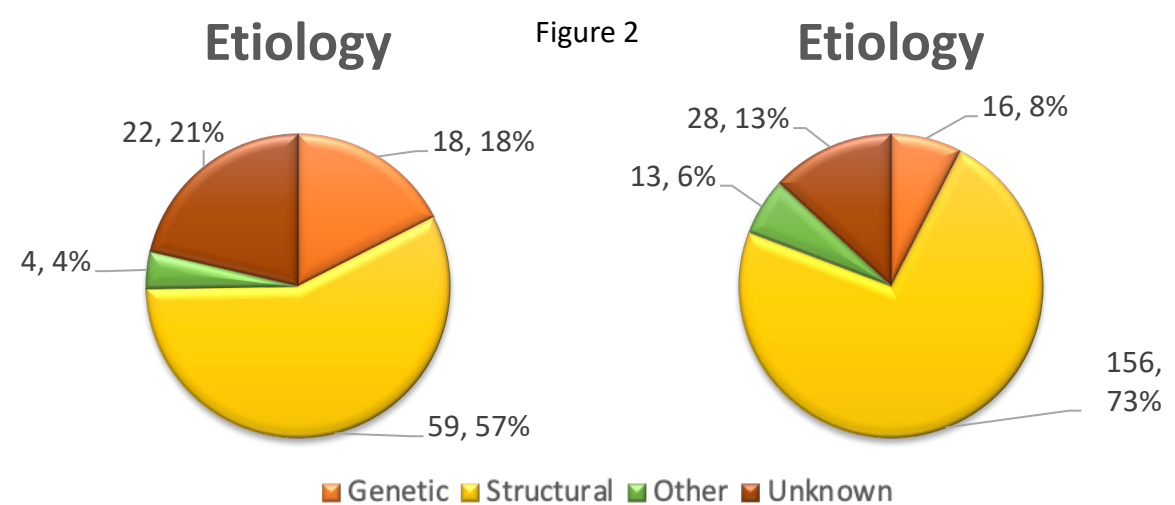
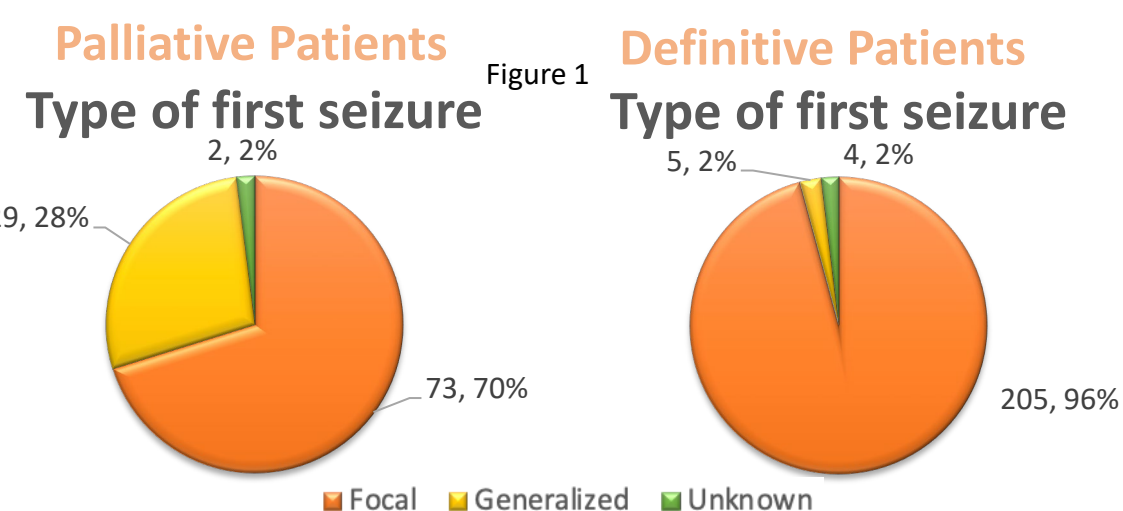
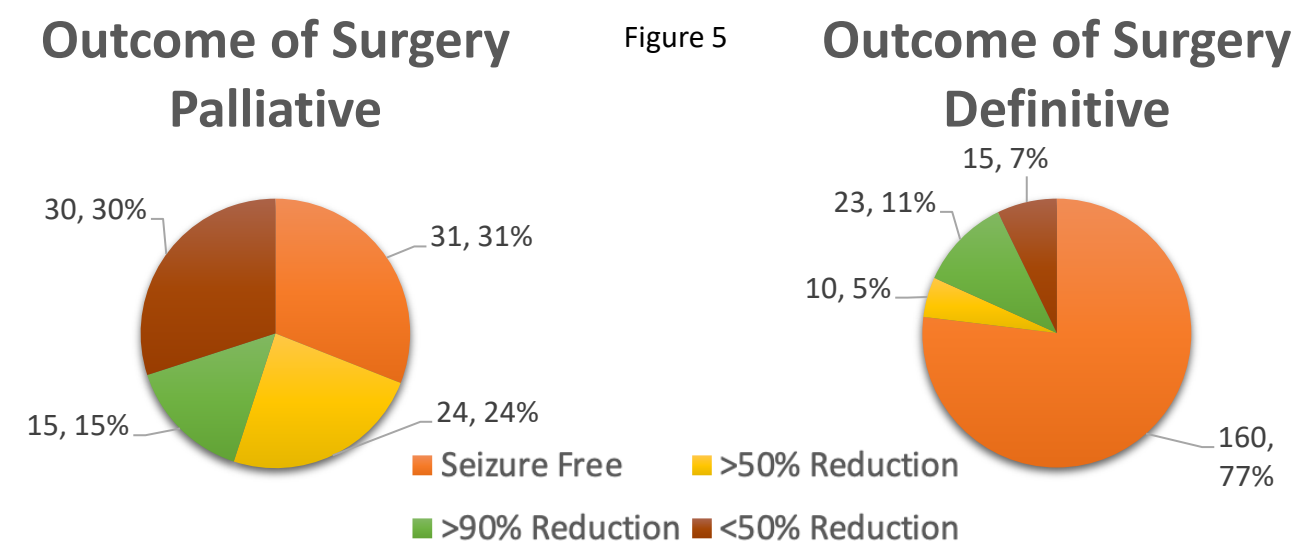
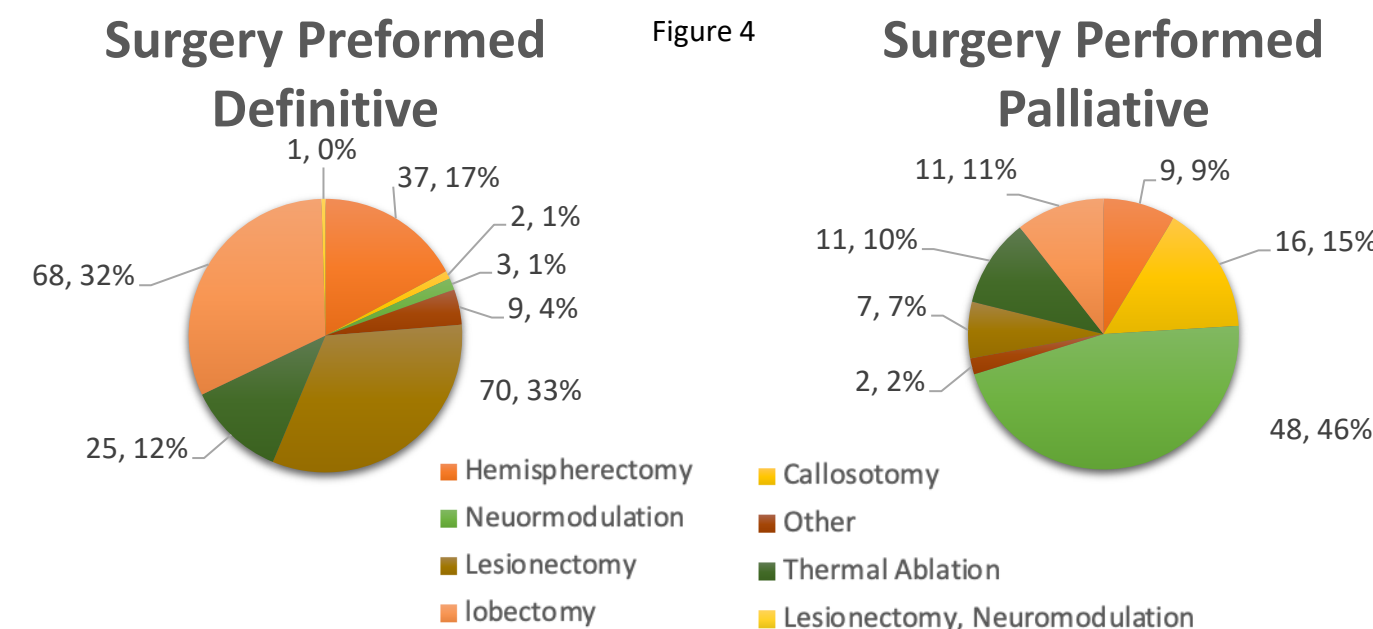


Figure 3: Wilcoxon 2 sample test

	Palliative		Definitive		p-value
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	
Age at referral (yrs)	10.06 (5.1)	10.65 (5.6-14.6)	9.47 (5.5)	9.5 (4.8-14.5)	0.36
Time to referral from seizure onset (yrs)	3.1(3.2)	4.9(2.9-8)	4.1(4.3)	2.6(0.6-6.6)	<0.0001
Time to referral from second ASM failure (yrs)	3.1 (3.2)	2 (0.3-4.5)	1.32 (2.4)	0.38 (0-2)	<0.0001
Follow up (months)	9.00 (8.15)	7.00 (3-11.5)	7.11 (6.35)	6.00 (2-10)	0.0497



- Of the 215 patients receiving definitive surgery, 160 achieved seizure freedom in comparison with 31 of the 104 patients in the palliative group (p<0.0001 using chi-square test).
- 90% of patients in the definitive group achieved at least a >50% reduction in seizure burden. However, the palliative group also saw >50% reduction in seizures in 70% of patients.
- There was one patient death in each group.

CONCLUSIONS

- A majority of both definitive and palliative epilepsy surgery patients achieved >50% seizure reduction
- Time to referral for palliative patients was significantly longer than for definitive surgical patients
- Palliative surgical patients can achieve greater seizure control than if another ASM is used and should be referred to an epilepsy surgery center promptly after failing two appropriate anti-seizure medications