

The Surgical Management of Epilepsy - A Surgeon Perspective

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Epilepsy is stereotypical clinical manifestation of recurrent, paroxysmal, excessive, synchronous neuronal activity of cerebral cortex. It affects almost 50 million people world wide¹. The incidence of epilepsy is as high as 50- 60 per 100,000. A range of 4 to 10 per 100,000 person per year makes it one of the most prevalent neurological disorder. Its prevalence in Pakistan touches the upper boundary of world's prevalence, being 9.99 per 1000 people. It is more prevalent in persons younger than 30 years and it is more prevalent in rural areas².

For a medical personal it may be a clinical scenario but for the affected person it is a big social stigma. Patients suffering from this disease are usually isolated, depressed and deprived of many social rights. Although considered to be disease of high IQ people, every successive fit cause a certain amount of cognitive damage to the affected patient and it can be potentially lethal for the patient and for society if these people have adopted certain professions.

For a county like Pakistan where economy is touching its nadir it is highly difficult for patients to comply with adequate antiepileptic drug (AED) therapy.

One should clearly differentiate between seizure and epilepsy. A seizure is defined as a "Transient occurrence of signs and symptoms due to abnormally excessive and synchronous neuronal activity in the brain." For practical purposes epilepsy can be defined as;

1. At least two un provoked (or reflex) seizures occurring > 24 hours apart.
2. One unprovoked (or reflex) seizure and probability of further seizures
3. Diagnosis of an epilepsy syndrome.

Monotherapy is ideal for treatment and control of epilepsy. With increase of number of AEDs the chances of epilepsy control decrease. Surgery is potentially curative for epilepsy or at least it is helpful for reduction of demand of AEDs in carefully selected patients.

International League Against Epilepsy (ILAE) gives its recommendations for selection of surgical candidates.

Surgery should be considered in patients with medically refractory epilepsy. It is when seizure frequency ≥ 1 seizure per month, and there is failure of at least 2 adequate trials of 2 simultaneous tolerable AEDs to

achieve seizure freedom. The seizure freedom is defined when patient is seizure free for at least 12 months or when it is seizure free for a period of 3 times the longest pre-intervention time between seizures. If the patient remained fit free for 8 months without intervention, he will be considered having seizure freedom if he remains fit free for a period of 24 months with medication.

There is a general trend, among physicians, of not referring patient for surgery mostly because of potential complications associated with cranial surgery. In carefully selected patients surgery does have advantage over lifelong medication which have hazards of its own.

Seizures amenable to surgery can be divided in to focal onset seizures, generalized seizures and unilateral multifocal epilepsy associated with infantile hemiplegia syndrome.

Focal onset seizure can further be divided in to temporal lobe epilepsy and epilepsy of extratemporal origin. Mesial temporal lobe epilepsy represents largest group of epilepsy which is refractory to medical therapy and gets best results from surgery. An extratemporal lobe focus can be cortical dysplasia, vascular malformation, arachnoid cyst or a space occupying lesion or it can be a post traumatic gliotic scar. For successful surgical treatment of epilepsy, one should sure about origin of epilepsy. A good understanding of seismology is key to successful surgery.

The surgeon's decision-making process in epilepsy surgery is a complex and important component of patient care. Epilepsy surgery is a treatment tailored to each individual, and the decision-making process considers numerous factors to optimize the outcome for each patient. The main goal is to minimize or eliminate seizures while maintaining or improving the patient's overall quality of life.

REFERENCES

1. Fiest KM, Sauro KM, Wiebe S, Patten SB, Kwon CS, Dykeman J, Pringsheim T, Lorenzetti DL, Jetté N. Prevalence and incidence of epilepsy: a systematic review and meta-analysis of international studies. *Neurology*. 2017;88(3):296-303.
2. Khatri IA, Iannaccone ST, Ilyas MS, Abdullah M, Saleem S. Epidemiology of epilepsy in Pakistan: review of literature. *JPMA*. 2003;53(12):594-7.

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