



California Pacific
Medical Center

A Sutter Health Affiliate
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Temporal Lobectomy for Epilepsy

CALIFORNIA PACIFIC NEUROSCIENCE INSTITUTE EPILEPSY PROGRAM

At California Pacific Medical Center, neuroscience specialists bring new and advanced surgical options to the physicians we serve and the patients they care for. Working collaboratively, our neuroscience experts provide comprehensive patient care using leading-edge technology for treating the most complex neurological conditions. Through this procedure profile, our physicians illustrate surgical techniques for treating epilepsy that can not be controlled with anti-seizure medication alone.

At California Pacific Medical Center we go beyond medicine to treat the whole person, not just the illness. Our promise to our patients is to deliver the highest quality expert care with kindness and compassion. We believe medicine can transform a body, but going beyond medicine can transform a life.

For patient referrals:

888-637-2762

Beyond Medicine.

Why a temporal lobectomy?

Patients with epilepsy, whose seizures arise from the temporal lobe, have a high probability that their seizures will **not** be controlled with anti-seizure medications alone. Surgery for epilepsy is a well-established procedure with excellent results. These patients are evaluated with a battery of tests, which include various brain scans, memory and cognitive testing, and electroencephalogram (EEG) to record brain wave activity. If the diagnostic test results show that a temporal lobe structural abnormality is responsible for seizures, performing a temporal lobectomy offers patients a 70-90 percent chance of a significant reduction or elimination of their epilepsy.

How is temporal lobectomy done?

Temporal lobectomy is a surgical procedure designed to remove seizure causing brain tissue. The temporal lobes are the brain segments located on either side of the head just above the ear. During surgery, a very small, seizure-causing portion of the temporal lobe is removed. The surgery may go by various names, depending on how much tissue is removed, such as temporal lobectomy, tailored temporal lobe resection, or selective amygdalohippocampectomy. Surgeons, many times, use specialized instruments such as an operating microscope, electrocorticography to record brain surface electrical activity, and computer-assisted image guidance. Surgery lasts approximately four to six hours and the incisions are usually behind the hairline and hidden when the patient's hair grows back. Important areas of the brain controlling language and motor function are mapped

prior to surgery, ensuring only abnormal tissue is removed and crucial brain areas are left intact.

What are the surgical risks?

Complications are rare; nevertheless, all surgery carries some risks. The standard risks for any brain surgery include bleeding, infection, stroke, and cranial nerve deficits. These are all discussed with the patient, but are exceedingly rare. Transient language dysfunction may occur for a few days after surgery on a dominant temporal lobe. Permanent memory dysfunction has been reported in two percent of patients who have had a temporal lobectomy. However, memory dysfunction can be minimized with careful patient selection and intensive preoperative evaluations.

What is the recovery time?

The surgery has a 70-90 percent success rate for complete seizure control. Hospitalization is normally four to seven days with the first post-surgical day usually spent in an intensive care unit (ICU). Some patients experience nausea the first few days after surgery. These post-surgical conditions typically subside prior to discharge. Regular follow-up visits with the Epilepsy Program are required to judge seizure control effectiveness and to monitor any continued anti-seizure medications. Once seizure control has been established, medications often are drastically reduced or completely eliminated. Generally patients can ambulate and return to a regular diet within two days. Most patients will return to their normal daily activities including exercise, work or school within six weeks after surgery.

Case Study

REFRACTORY EPILEPSY, POST VASCULAR MALFORMATION

CASE OVERVIEW

36-year-old mother of three was referred for evaluation for epilepsy surgery. At age 10 the patient was diagnosed with a vascular malformation. After surgical removal of the lesion the patient began experiencing seizures. The patient had previously undergone two brain surgeries for her vascular malformation, as well as radiation treatments. A shunt had been placed for hydrocephalus. She had left sided weakness.

DIAGNOSTIC TESTS

MRI showed extensive encephalomalacia of the right frontal and parietal lobes with possible atrophy in the right temporal lobe. Video EEG monitoring indicated right temporal occipital onset of her seizures. One week prior to her November 2005 lobectomy surgery the patient was surgically implanted



Brain abnormalities years after radiation treatments and surgery.

with a grid and strip electrodes for monitoring of seizure onset. Significant seizure activity was monitored from the basal temporal regions on the right side, as well as from the motor cortex and sensory cortex regions.

TREATMENT

The patient returned to the operating room one week after grid and strip electrode implantation for a right tem-



Grid and strip implants

poral lobectomy. During this surgery the grid and strips were removed. A 6.5 cm temporal lobectomy was performed. The scarred hippocampus was removed with the temporal lobe. The motor and sensory cortex areas that were involved in the seizures were undercut with multiple subpial transections (a disconnection procedure that allows continued function of the cortex but decreases the chance of spread of abnormal electrical activity and seizures from these regions). Her shunt was found to be nonfunctioning and no longer necessary and was removed.

OUTCOME

Prior to discharge, the patient received a follow-up CT scan showing no evidence of hydrocephalus. At her one-month follow-up appointment the patient reported no seizure activity. Her face had symmetrical movement and sensation. She had no change in her pre-existing left-hand weakness. At her two-year follow-up visit, the patient remains seizure free on a tapering dose of medications and is working toward completing her nursing degree.

Patient referrals

Patients need a physician referral prior to scheduling temporal lobectomy surgery evaluation. Medical records, pertinent laboratory reports, and imaging reports can be forwarded to the California Pacific Epilepsy Program to determine referral indication appropriateness.

Insurance Coverage

Most insurance plans cover temporal lobectomy surgery. In order to avoid unexpected medical expenses, it is always best for patients to contact their insurance company prior to treatment to confirm coverage for this service and obtain prior authorization.

Information or Patient Referral

For patient referrals, transfers or more information about the **California Pacific Medical Center's Epilepsy Program**, please call the Regional Referral Program at **888-637-2762** or contact the **Epilepsy Program** directly at **415-600-7880**.

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