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Oral Presentation

Overview of Surgical Treatment for Epilepsy

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Abstract

Epilepsy is one of the most serious primary disorders of the brain, and pharmacotherapy is unsuccessful in controlling seizures in 30-40% of patients with this disease. It is estimated that four million people worldwide with pharmacoresistant epilepsy might be candidates for a surgical procedure that could stop disabling seizures in 60-80%. However, only a small proportion of these patients are referred for surgery, even in industrialized countries. Surgical treatment for epilepsy is arguably the most underutilized of all accepted therapeutic interventions in the field of medicine. Furthermore, when patients are referred for surgery, there is an average duration of over 20 years between onset and surgical referral in the United States, and this figure is not much different in other industrialized countries. In theory, for many of these patients, early surgical intervention could prevent a lifetime of disability. Two randomized controlled trials, and hundreds of uncontrolled surgical series confirm the safety and efficacy of surgical treatment for epilepsy, and a practice parameter, issued by the American Academy of Neurology in 2003, concluded that surgery is the treatment of choice for medically intractable temporal lobe epilepsy. Surgery is also effective for a number of other surgically remediable epilepsy syndromes with a known pathophysiology, a predictable natural history, and progressive features. These include epilepsies due to well-circumscribed resectable lesions, and epilepsies in infants and young children due to large or diffuse lesions limited to one hemisphere. Tremendous recent advances in presurgical evaluation, particularly in neuroimaging, as well as microsurgical techniques, have greatly improved outcome, increased the number of patients who could be considered surgical candidates, and made surgery feasible in countries with limited resources. Surgical procedures consist of standardized resections, tailored resections, disconnection surgery, stereotactic ablative surgery, most recently including laser ablation, and both continuous and responsive neurostimulation. Recent studies of outcome have focused not only on seizure freedom, but also the beneficial effects of surgery on quality of life, cognitive and social function, and reduced morbidity and mortality. Surgical complications are rare, compared with the adverse consequences of uncontrolled epileptic seizures.

Keywords: Epilepsy, Treatment, Children.

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