Hospital Leads the Way in Deep Brain Stimulation

Highly trained and experienced specialists at The University of Kansas Hospital are among the nation's leading providers of deep brain stimulation. The procedure helps control essential tremor and reduces rigidity in patients with idiopathic Parkinson's disease. These are two of the most common neurological movement disorders.

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For more information about deep brain stimulation or to refer a patient who has idiopathic Parkinson's disease, essential tremor or other neurological movement disorder, call 913-588-5862 or toll free 877-588-5862. Or visit our Web site at kumed.com.

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For Physicians and Health Care Professionals from The University of Kansas Hospital

Hospital Leads the Way in Deep Brain Stimulation

Rajesh Pahwa, MD,
Director, Parkinson's Disease and Movement Disorder Center

Jules Nazzaro, MD
Neurosurgeon and Chief of Movement Disorders Surgery

Neurologist Rajesh Pahwa, MD, and neurosurgeon Jules Nazzaro, MD, lead a team in the Parkinson's Disease and Movement Disorder Center that has made The University of Kansas Hospital one of the nation's leading centers for deep brain stimulation (DBS).

The procedure treats patients with idiopathic Parkinson's disease and essential tremor, two of the most common neurological movement disorders. DBS helps control tremors and reduce rigidity in patients whose symptoms are no longer adequately controlled by medication. To treat Parkinson's disease, DBS delivers controlled electrical stimulation, most commonly through bilaterally implanted electrodes, to targeted cells in the subthalamic nucleus (STN) or internal globus pallidus (GPi). For essential tremor, the procedure is unilateral and targets cells in the thalamus.

Nationally Recognized Center of Excellence

The Parkinson's Disease and Movement Disorder Center at The University of Kansas Hospital has been designated a National Parkinson's Foundation Center of Excellence. That means the program has been recognized for setting the "gold standard" in research, care and outreach related to Parkinson's disease.

DBS was developed by the medical technology firm Medtronic, in collaboration with physicians at several hospitals. As a primary center for testing the procedure, The University of Kansas Hospital has been one of the nation's leading providers of DBS. Rajesh Pahwa, MD, a world leader in the clinical research and management of patients with movement disorders, is a founder and director of the hospital's Parkinson's Disease and Movement Disorder Center.

Dr. Nazzaro, who was recruited to the program last year, was previously an attending physician in neurosurgery and chief of the section of stereotactic and functional neurosurgery at Boston University Medical Center for 12 years. He has extensive experience in DBS surgery and was co-director of one of the largest movement disorders surgical programs in the Northeast.

Relieving Tremors Electronically

The combined expertise and experience of Drs. Pahwa and Nazzaro and their team provide patients with the region's highest-quality program and follow-up care for DBS. Team members, including a neuropsychologist, perform a series of tests to ensure each patient is a good candidate for DBS. The entire team meets regularly to review each patient who is being considered for surgery, as well as patients who have had the surgery.

On the day of brain surgery, the patient receives a local anesthetic, and then a stereotactic head frame is attached. High-definition MR brain scans are then obtained. Based on the images, Dr. Nazzaro and his team plan the surgical approach. Our dedicated intraoperative neurophysiologist uses microelectrode recording to help Dr. Nazzaro determine the precise location to implant the DBS lead into the brain stem. While Dr. Nazzaro implants the DBS lead, the intraoperative neurophysiologist also monitors the patient's neurological functions and confirms reduced rigidity and/or tremor, checking for potential side effects.

A week or so after the surgery, the patient returns for implantation of a neurostimulator, which is inserted under the skin of the chest. This is done as an outpatient procedure performed under general anesthesia. The wires from the implanted electrode are extended under the scalp and the skin of the neck, down to the stimulator. Dr. Pahwa and his specially trained staff carefully program the stimulator during follow-up visits.

For patients with Parkinson's disease, the brain procedure can be done on both the right and left sides during one surgery or during two separate surgeries, performed approximately a month apart. This decision is based on the patient's needs and the severity of the patient's condition.

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