



Clinical Update

July 2005



Promising New Approach to Parkinson's Disease Management

Deep brain stimulation is FDA-approved for select cases of Parkinson's Disease – and is now offered by a team of neurosurgeons and neurologists at University Hospital.

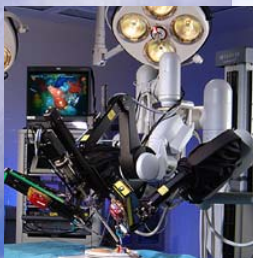
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Clearing the Air

It's not expected to be easy, but the entire SUNY Upstate campus is going smoke-free on August 1, 2005. "Secondhand smoke can only hurt our patients, employees, students and visitors," says Upstate President Gregory L. Eastwood. "To me, that's the most compelling reason for the change."

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UH's Robotic-Assisted Cardiac Surgery Far Ahead of the Curve

Only two hospitals in the northeast have University Hospital's level of experience in cardiac procedures performed with the da Vinci Surgical System.

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Now at University Hospital:

Deep Brain Stimulation for Parkinson's Disease

University Hospital is now performing Deep Brain Stimulation (DBS) for the management of Parkinson's Disease. The FDA-approved treatment, which utilizes a device similar to a cardiac pacemaker, can dramatically reduce tremor, rigidity, slowness and other debilitating symptoms in appropriate patients.

University Hospital Neurosurgeon Jim Holsapple MD and Neurologist Dragos Mihaila MD have been offering DBS for Parkinson's Disease since last fall. The treatment is also available for patients with disabling tremors.

"It's not a cure, and it doesn't stop the progression of disease," explains Dr. Holsapple. "But for the appropriate patient who responds well to levodopa, DBS can mean a remarkable improvement in the quality of life. It corrects the precipitous worsening of symptoms between medications and allows the patient to be much more functional."

Several months after treatment, Daniels reports he is "100 percent improved."

"Terry's results are excellent," says Dr. Holsapple. "He still has some fluctuation and slight rigidity, but we are all very pleased with the outcome."

Dr. Mihaila agrees that "Surgery provided significant improvement. Terry has much more reliable control of his symptoms and has been able to cut down on his medication."

First Upstate Patient

The first University Hospital patient to be treated with DBS was 50-year-old Terry Daniels of Auburn. After 17 years, his Parkinson's Disease had progressed to a debilitating level.

"Even on medication, I froze up a lot, and it was very difficult to walk," says Daniels. "When Dr. Holsapple and Dr. Mihaila proposed DBS, I was all for it."

Deep in the Brain

The target of DBS is the subthalamic nucleus (STN), an area that is deep in the brain and intricately involved in movement control. In patients with Parkinson's, the STN relays abnormal signals. DBS blocks those signals with electrical charges.

The course of treatment begins with implantation of a neurostimulator – similar to a cardiac pacemaker – and two thin, electrode-tipped leads that run under the scalp into the brain.



University Hospital
Neurosurgeon Jim
Holsapple MD

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The neurostimulator hardware used for management of symptoms of Parkinson's Disease

“There’s a lot of hardware involved,” notes Dr. Holsapple.

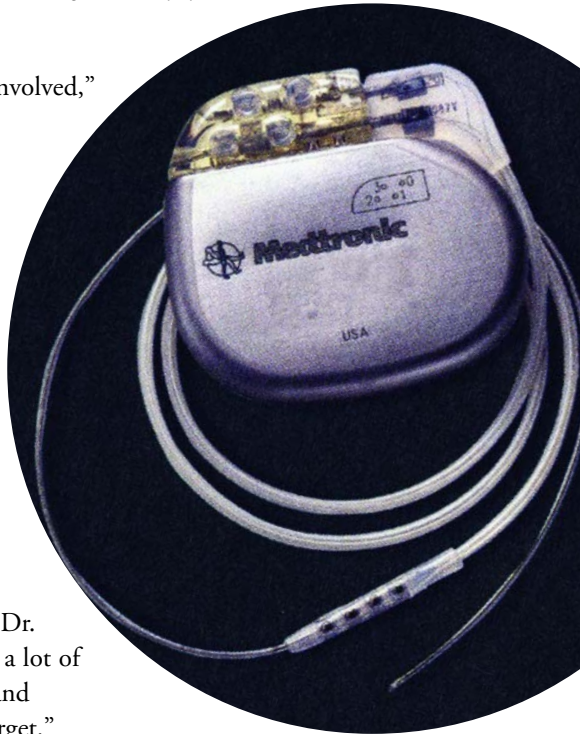
The surgical phase of treatment can take six hours or more. The neurosurgeon and neurologist spend much of that time determining the coordinates of the hyperactive neuron cell activity – a pathologic feature of Parkinson’s and the target of DBS.

“Implanting the actual electrodes is the easy part,” Dr. Holsapple reports. “It takes a lot of time and finesse, studying and adjusting the path to the target.”

Phase Two

The implantation of DBS hardware paves the way for the stimulation phase, which begins several weeks later. At this point, the neurologist programs the neurostimulator to generate mild electrical signals to the brain, as needed.

The patient continues on medication, in addition to the electrical stimulation. “The next step is to find the right balance between stimulation and medication,” explains Dr. Mihaila, the University Hospital movement disorder specialist who handles the comprehensive screening and



extensive follow-up associated with DBS. “Both of these phases are very laborious,” he notes.

The Academic Difference

DBS is a complex course of treatment, demanding the most advanced technology and an extraordinary level of integrated medical and surgical expertise. “But for the appropriate patient,” concludes Dr. Holsapple, “it buys a window of time and restores a remarkable level of function. It’s reversible, it’s adjustable, and it demonstrates the advanced capabilities found only at an academic medical center like Upstate.”

Continued on next page

Jamming the Circuit

Since the 1960s, electrical stimulation has been used to explore brain function. In the course of their research, neurosurgeons and neurologists discovered that stimulation of certain brain structures suppressed symptoms of neurological disorders, such as Parkinson’s Disease and Essential Tremor.

“It’s basically a matter of jamming the signals from diseased areas,” according to University Hospital’s Jim Holsapple MD, the first CNY neurosurgeon to offer DBS for management of Parkinson’s Disease.

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DBS: For Select Patients



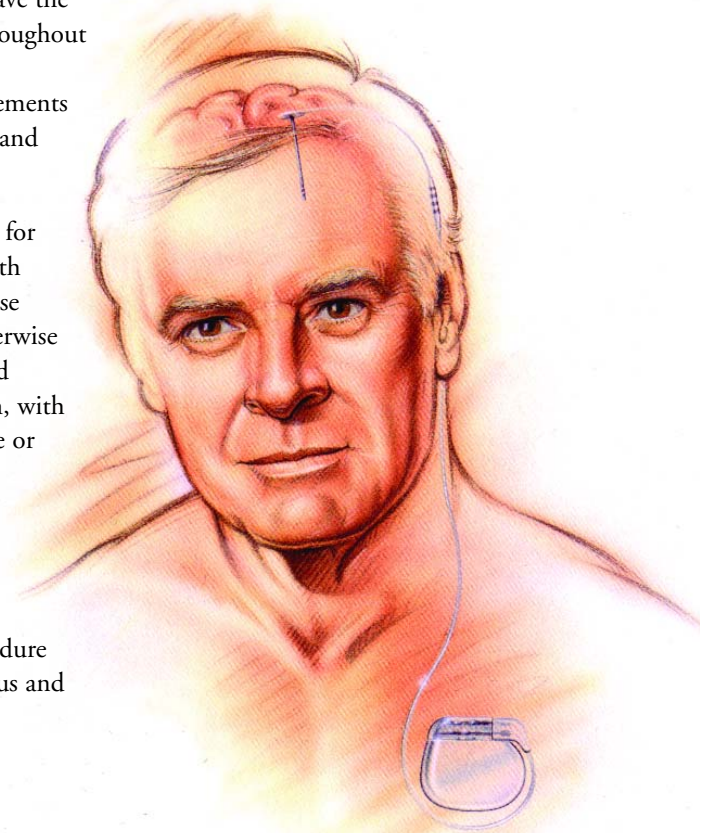
Dragos Mihaila MD

For more information about patient criteria for DBS, please contact Jim Holsapple MD or David Carter MD, PhD in the Department of Neurosurgery, 315-464-4418, or Dragos Mihaila MD in the Department of Neurology, 315-464-4997.

Deep brain stimulation (DBS) is an appropriate treatment for only about 10 percent of patients with Parkinson's Disease. According to University Hospital Neurologist Dragos Mihaila MD, "The ideal candidate is the younger patient who responds well to levodopa but experiences severe fluctuations in symptoms as the medication wears off. The goal of treatment is to have the patient stable throughout the day, without involuntary movements and extreme ups and downs."

To be considered for DBS, patients with Parkinson's Disease should be in otherwise good physical and psychiatric health, with no cardiac disease or terminal illness. Screening of patients is very comprehensive, because the multiphase procedure is lengthy, rigorous and not without risk.

"There's a lot of high-rent real estate in this part of the brain," explains University Hospital neurosurgeon Jim Holsapple MD. "The critical circuits that control motor skills, behavior and mood run through here. We can't justify the risk for patients who are older, cognitively impaired or severely affected by imbalance, which does not improve with DBS."



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Taming the Beast

Nicotine: it's widely considered as addictive as cocaine and the most destructive substance on the healthscape. That's why SUNY Upstate – Onondaga County's largest employer – has adopted a smoke-free policy, effective August 1, 2005.

While the decision to go smoke free has sparked debate – about possible infringement on personal freedom – Upstate's Dean of Medicine Steven Scheinman MD says, "We don't think it's inappropriate to prohibit the single most prevalent cause of disease."

Surveys show that about 13 percent of Upstate's workforce are smokers, and 85 percent of those employees have tried but failed to quit. To help them battle this fierce addiction, all employees (plus students and volunteers) have been offered free smoking cessation courses and nicotine replacement therapy.



Beginning in August, these signs will be posted throughout the SUNY Upstate campus.

When smokers stop smoking, within 24 hours their lungs start to clear, and their body temperature and heart rate drop to healthy levels. Still, no one at Upstate is sugarcoating the anguish of nicotine withdrawal. Smokers are warned to expect such symptoms as insomnia and irritability. According to Upstate President Gregory L. Eastwood MD, "We will do everything we can to support smokers who want to quit smoking. As I learned when I first spoke out on this important but controversial issue, the right thing to do is rarely the easy thing to do. But the outcome will be a healthier Upstate and a victory for all."



SUNY Upstate President Gregory L. Eastwood MD is leading the effort to "clear the air," which means prohibiting smoking on all property owned or leased by the University, including parking garages, parking lots and the grounds surrounding University Hospital and University Health Care Center.

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SUNY UPSTATE MEDICAL UNIVERSITY Syracuse, New York & University Hospital

Robotic-Assisted Cardiac Surgery Team: One of Most Experienced in Northeast

It's Intuitive: The da Vinci Surgical System allows the surgeon to operate with natural hand-eye coordination. When the surgeon turns the controls clockwise, the robot's instruments turn clockwise. Standard endoscopic surgery is counter-intuitive, with the surgeon working from a mirror image of the operating field.

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The robotic-assisted cardiac surgery team at University Hospital ranks among the top hospitals in the northeast in the number of cases performed and the range of cardiac procedures completed.

“We are one of the few programs in New York, or in the northeast for that matter, with this extensive robotic experience,” reports the team’s leader, cardiac surgeon Charles Lutz MD. “The only two programs competing with us, in terms of variety of procedures and experience, are in New York City.”

Sharing Expertise

Dr. Lutz travels to Boston, Philadelphia and other cities to proctor surgical teams tackling their first robotic-assisted cardiac surgery. He is fellowship trained in cardiac surgery and has completed special training in the da Vinci system.

Local Leader

Early in 2004, University Hospital added the da Vinci Surgical System® to its arsenal of advanced surgical technology, at a cost of more than \$1 million. The computer-assisted “robot” has since become a vital member of the cardiac surgery team, making it possible to perform certain minimally invasive coronary

bypasses, mitral valve repair and other cardiac procedures (see sidebar).

Special Challenge

Minimally invasive, or endoscopic, surgery is routinely used for other parts of the body. But cardiac applications posed particular challenges, because the beating heart is not a motionless organ, and cardiac procedures are exceptionally intricate.

Robotic-assisted surgery is ideal for these applications. “With this technology, the field of vision is unparalleled – it is not only magnified ten times, it is also three dimensional,” explains Dr. Lutz.

But he is most impressed by the robot’s dexterity and precision. “This device does things the surgeon’s hands cannot physically do. It makes the right hand and left hand ambidextrous. It eliminates any tremor. It refines delicate hand movements to an even more precise level.

“And it never gets tired,” adds Dr. Lutz.

Strong Benefits

As a result, complex cardiac procedures can be successfully performed through pencil-size incisions. “The da Vinci system

dramatically reduces the surgical incision, the length of stay, postoperative pain and risk of infection,” reports Dr. Lutz. “For the patient, it means a faster, more comfortable return to normal activity.”



University Hospital
Cardiac Surgeon
Charles Lutz MD

On the Rise

Dr. Lutz estimates that 10 to 15 percent of cardiac cases are appropriate for robot-assisted surgery. “And this number will clearly increase in the future,” he promises.

Robotic-assisted Cardiac Procedures* Performed at University Hospital

- Robotic-assisted MIDCAB (single or double vessel coronary artery bypass in which about 75 percent of the procedure is performed with the robot and a small, two-inch incision is used for the anastomosis)
- Robotic-assisted mitral valve repair
- Robotic-assisted total endoscopic ASD repair
- Robotic-assisted biventricular pacemaker insertion

**Robotic-assisted total endoscopic coronary bypass (TECAB) is FDA-approved*

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