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TECH 6/30/2015 @ 11:48AM | 787 views

# How This Surgical Robot Helps Neurosurgeons Treat Brain Disorders

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On June 16, 2015, Dr. Frank Hsu performed robotic [Parkinsons surgery](#) at the University of California Irvine Medical Center on a 56-year-old woman. The ROSA Brain robot was used to precisely implant electrodes in the brain to provide deep brain stimulation thus disabling overactive nerve cells in the patient.

The ROSA robot, from [MedTech](#), a French company specializing in the development of surgical robots, allows surgeons to visualize and register the targets within the brain and calculate entry points and required trajectories before and during the surgery.

Cranial surgery is used to treat certain forms of epilepsy, Parkinson's disease or to remove tumors. Once the surgery has started, ROSA will direct the instruments to the entry point and follow the pre-planned trajectory by pressing a button on the robot.

Depending on the procedure, the surgeon can use different tools with the ROSA robot to perform different surgeries on the patient such as implanting electrodes to stimulate areas within the brain or guide probes to perform biopsies. This procedure also reduces the time patients spend under anesthesia.



*Dr. LeFranc performing a deep brain stimulation surgery with ROSA in 2011 in Amiens, France.*

“There are four million people with Parkinson’s disease worldwide, contributing to a total global population of nearly one billion people who are affected by some form of brain disease,” said Bertin Nahum, CEO, MedTech. “In the coming years, hospital neurosurgery departments will face an influx of patients with increasing costs of care, whereas healthcare budgets are shrinking. MedTech seeks to provide better care by facilitating minimally invasive procedures with our ROSA robots for brain and spine surgery.”

The ROSA robot has a robotized arm that imitates the movements of a human arm which give surgeons complete dexterity and freedom in trajectory choices. Combined with GPS-like technology, surgeons can precisely define targets and trajectories of the robotic arm.

[Medtech](#) currently has 17 ROSA robots in operation in the U.S. and [Europe](#) including three new hospitals in the United States: Massachusetts General Hospital, All Children’s Hospital in Baltimore and Texas Southwest Medical Center in Dallas.

Amiens University Hospital in Amiens, France recently [acquired](#) MedTech’s newest robot ROSA Spine for minimally invasive spine surgery in early June 2015. This is the first hospital in Europe to acquire the ROSA Spine robot which received the [CE marking](#) in July 2014.

MedTech (Euronext, FRO010892950 – ROSA) raised €4.5 million prior to its IPO in November 2013 on on Euronext Paris where it subsequently rased €20 million. In 2006, the company sold the [technological rights to their BRIGIT™ robot to Zimmer Biomet](#) which provided additional non-dilutive capital and funded the development of ROSA.

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