First in Ghana

Medical history and a surgical breakthrough occurred in Tema on Monday October 29 2007. For the first time in Ghana and perhaps sub-Saharan Africa, a patient had a “brain pacemaker” placed deep within the sensitive structures of the brain in order to stop disabling abnormal movements. The patient was suffering from Parkinson’s Disease (PD) - a condition that causes people to shake uncontrollably and walk with difficulty in a shuffling manner.

An international team of brain surgeons led by the Ghanaian neurosurgeon, Dr. Nii Bonney Andrews performed the delicate seven hour operation at the Tema International NeuroCenter (TIN) located within the Narh-Bita Hospital in Tema.

Other brain surgeons who participated included Dr. Rick Schuurman and Dr. Papain Van den Moncken both from the Academic Medical Center of Amsterdam and Dr. Philip Batiade of Frankfurt.

All three are currently pursuing Post-doctoral Fellowship Training in Stereotactic Surgery at TIN. Specialised anesthesia for deep brain surgery was provided by Dr. John from Lebanon and Steve Bati-Certified Registered Nurse Anesthetist of the Narh-Bita Hospital. The Neurosurgical Theatre Technologist was Grace Fiagah of neuroGHANA and the Radiology Technologists were Theodore Ntiri and Thomas Kweku Aperko.

The operation was the culmination of the 1st West African Workshop on the Surgical Treatment of Movement Disorders hosted by West African Academy of Neurosurgeons and the Ghana Center for Advanced Brain Surgery, a specialized department of the NGO, neuroGHANA. Since its inception in 1996, neuroGHANA has promoted and pioneered the utilization of modern techniques in brain surgery. These techniques have included computer-assisted brain surgery, key-hole video surgery and Gamma Knife or no incision surgery.

Dr. Andrews described the complex and delicate operation as a fine example of Ghanaian expertise linking up with international knowhow in order to improve patient outcomes and expand knowledge.

He noted that sustained and fruitful cooperation between neuroGHANA, Narh-Bita Hospital and other excellent international institutions had led to the provision of state-of-the-art surgical techniques in Ghana. He said neuroGHANA is always ready to link up with professionals or institutions dedicated to helping people fight serious diseases such as brain tumors, strokes, neck pain, back pain and paralysis.

The patient who underwent the operation is a 63year old man who had been suffering from Parkinson’s Disease for over twenty years. This made it difficult for him to walk in a steady manner; he therefore fell frequently causing multiple shoulder dislocations.

He also shook uncontrollably and had difficulty rising from a chair. All debilitating conditions
continued to occur in spite of massive doses of medication.

is only hope of improvement was to have complex brain surgery. He needed to have a sophisticated wire or electrode placed in a very tiny structure deep in the brain called the Subthalmic Nucleus (STN).

The STN is an area less than one quarter the size of a postage stamp or a five Ghana cedi coin and contains about half a million specialized nerve cells. The aim of the surgical operation is to disable the nerve cells in this area without destroying them. The surgical operation is known as Deep Brain Stimulation (DBS) and involves placing the electrode/wire in the brain and connecting it to a battery powered stimulator placed near the patient’s collar bone.

The abnormal nerve cells in the brain (STN) can then be silenced by an electric current sent along the wire/electrode (maximum current allowed 3.5v). The current can be adjusted to suit the needs of the patient; turning off the current reverses the effects - a major advantage of the DBS treatment.

The operation started promptly at 8 am in the CT scan suite at the Medlab Building at Roman Ridge in Accra. There the surgeons placed a specialized metal frame round the patient’s head. A special CT scan of the head was then performed in order to obtain a detailed map of the patient’s brain and identify the location of the STN where the electrode wire will be placed.

All calculations were triple checked using computer software. The patient (still with the metal frame attached to the head) was transported by ambulance to the Tema International NeuroCenter, located within the Narh-Bita Hospital, Tema. He arrived in Tema at 9am.

In the operating suite, the electrode wire was then delicately and carefully guided into the brain directly to the STN. After its placement had been checked using x-ray control films, the electrode wire was then attached to the battery powered stimulator located under the patient’s right collar bone. The procedure was completed at 4pm.

DBS surgery was performed for the first time ever in 1994 in Grenoble, France by Dr. Benabid. Since then, numerous clinical reports from all over the world have confirmed major improvements for all Parkinson’s Disease symptoms in patients who have DBS surgery. There are significant improvements in freezing, tremor and posture leading to a better quality of life for the patient.

The 63 year old patient who underwent surgery has already made significant progress; he is able to walk better and his tremors have decreased considerably; 48hours after surgery, he was able to sit for over an hour and play an exciting game of chess - one of his favorite pastimes.

DBS surgery is only available in prestigious and top class medical institutions worldwide. It is therefore heartwarming that the operation can now be performed in Ghana - in the year of the Golden Jubilee. The Narh-Bita Hospital, already famous for its community friendly spirit, Nursing School and postgraduate physician training programme, has made another important contribution to medical progress in Ghana.

Source: ADM`s Medical correspondent

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