

'Deep Brain Stimulation' (DBS)

या शस्त्रक्रियेचा पेशंटचा अनुभव

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Sree Chitra Rural Institute of Medical Science and Technology Patient's Experience By T.S. Arunachalam

Unbelievable. It is a hospital run by the government of Kerala. The tidiness, cleanliness and discipline you see around will put the best hospitals in the west to shame. What impressed me the most was the dedication of the staff, be it the doctors, nurses or the attendants.

Having been a person suffering from Parkinson's disease for the last eight years, the quality of my life had deteriorated rapidly. The increase in the medication had increased the dyskinesia (involuntary movement of the body) and my effective working hours had been reduced to 2 to 3 hours per day. You can imagine a situation where you know everything you want to do, but cannot do anything. I was more or less confined to the house, making limited outings and was more dependant on my wife without whose loving care I would not have been around today. To live under the same roof alone with a PD patient is a big challenge and Aruna was so co-operative and understanding.

It was at this juncture that, Dr. Pradeep Divte, my neurologist from Pune, suggested that I should go for DBS procedure as I had no other serious medical conditions and insisted that I should get it done only from Chitra. Sree Chitra Tirunal Institute of Medical Science and Technology functions as an autonomous body under the Department of Science and Technology, Government of India, and is an institution of national importance. The Comprehensive Care Unit for Movement Disorders was established in 1998 under the

Neurology Department.

They have a very experienced and dedicated team led by Dr. Asha Kishore, Professor of Neurology (since 1996), Dr. Shyam Krishnan, Assistant Professor of Neurology, Dr. K. Krishnakumar, Associate Professor of functional Neurosurgery and Mr. Gangadhara Sarma, Neuropsychologist and medical social worker.

The DBS (deep brain stimulation) is not a cure. It just helps the motor (movement) related symptoms of the disease like stiffness of the limbs, tremor and slowness to a significant degree. Research all over the world has shown that, in the case of PD patients, 50% - 70% improvement can be achieved, thus reducing the drug-induced dyskinesia and improve the quality of life. In my own case, I have seen a great improvement in gait, ability to do all things myself, almost no "off" time, even though the quality of my speech has slightly come down, which was better with high doses of synthetic and natural levedopa. But, here, dyskinesia was very much, which has now disappeared. The quality of my speech has slightly come down, which was better with high doses of synthetic and natural levedopa. But, here, dyskinesia was very much, which has now disappeared.

In Deep Brain Stimulation, the first stage is the implantation of DBS electrodes inside the brain. The target selected for implantation is an area in brain called 'Subthalamic Nucleus' whose cells function abnormally in PD patients, resulting in movement related disorders. The neurosurgeon uses a 'Stereotactic Head Frame' and imaging (MRI) to map the brain and locate the target in the brain. The scan is done after fixing the frame and then the patient is moved to the operating

room. The patient remains awake in the operating room during this period (approx. 6 hours) so that the neurosurgeon and the movement disorder specialist can test the stimulation and maximize the benefits with minimum side effects. The patient's scalp is anesthetized, a small hole is put on the head and wires passed through it to the brain. Since the brain itself has no nerves to sense pain, the electrodes can be passed through the brain with minimum discomfort to the patients.

The first sets of wires called "micro-electrodes" are passed into the brain to record the electrical activity from the target. (it is 'Subthalamic Nucleus' in the case of PD patients). It is very important to confirm the correct position because in the case of DBS procedure, the surgeon is not directly seeing the target while operating.

To double check if the position of the electrode is correct, a test current is given when the patient is still awake and the patient is asked to move his hands and legs to see the effectiveness of the surgery. The patient co-operation is very important during the DBS procedure. After this is done, the micro-electrodes are removed and DBS electrode is placed in the same position. This is repeated for the right side of the brain and then the patient is put under general anesthesia for implanting the neuro-stimulator (the battery) under the skin on the chest wall.

The life of a non-rechargeable battery is normally five years. The life also depends on the current we use to stimulate. The higher the current, the lower the battery life. I preferred the non-rechargeable because it is something like "insert and forget" and you need not bother for sometime. The frequency and the intensity of the stimulation can be changed by the movement disorder specialist using a special device. This is called programming. It is something like fine tuning a radio and the stimulation parameters are adjusted till optimum results are obtained. The patient is also provided with a device like remote control and will be able to change the preset parameters

by the movement disorder specialist after consulting him, if necessary.

The other precautions for the DBS implant patients is that they should not get electric shocks and should be careful while undertaking any treatment that involves diathermy as both can damage the system implanted and may cause even death. They should also avoid magnetic screening at the airports and malls. A certificate to this effect is given to the patient from the hospital at the time of discharge.

I was a bit concerned on the day of the surgery and really wondered whether this was really necessary and worth. But now I am very happy that my medication has come down drastically and literally I have no "off" time. I am totally independent in dressing, washing, bathing, etc. and I can go out anytime. Earlier, I had to plan my medication depending on what time I have to go out. It is not the case now.

The only problem I am facing now is a reduced word output in speaking (my talking used to be clear during my "on" time with high doses of synthetic and natural levedopa - with dyskinesia) including speech clarity which I think has gone down and the walking speed that has also gone down. I hope to improve this in the long run with physiotherapy. Another important gain is that my head does not drop anymore and my posture is erect as before.

Thiruvananthapuram is a clean city (thanks to the 100% literacy in the state), the airport and roads are very clean without litter. We stayed in a small hotel called Gowri Nivas, just in front of the main entrance.

It made a slight dent in the pocket, but being closer to the hospital, and with availability of good food, we had to put the convenience ahead of cost.

