

## CURRICULUM VITAE

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#### Education

1983/3 MD, Tokyo University, Department of Medicine

#### Residencies

1983 - 1984 Department of Neurosurgery, Tokyo University Hospital and its collegial hospitals

#### Certification

1994/9 Board eligible Japanese Board of Neurological Surgery  
2004/10 PhD, Tokyo University, Department of Medicine  
2005/10 Certified spine surgeon of Japanese society of spinal surgery  
2008/1 Certified specialist of Japan society for stereotactic and functional neurosurgery

#### Professional activities

1985 - 1988 Attending neurosurgeon, Tokyo Metropolitan Neurological Hospital  
1988 - 1990 DFG research fellow, Department of Neurosurgery, University Erlangen-Nürnberg  
1990 - 1992 DFG research fellow, Department of Neurosurgery, University Bonn  
1992 - 1994 Attending neurosurgeon, Kantoh Rosai Hospital  
1995 - 1998 Assistant professor, Department of Neurosurgery, Tokyo University Hospital  
1998 - 2007 deputy director, Department of Neurosurgery, Tokyo Metropolitan Neurological Hospital  
2007 - director, Department of Neurosurgery, Tokyo Metropolitan Neurological Hospital

#### Academic appointments

2004 - part-time lecturer, Tokyo University, Department of Neurosurgery  
2007 - part-time lecturer, Kyorin University, Department of Neurosurgery

#### Committees/Executive Boards

Japanese Society of Spinal Surgery  
Japan Society for Stereotactic and Functional Neurosurgery

## **New Indication of DBS for Various Movement Disorders in Addition to Parkinson Disease and Essential Tremor**

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In Japan, DBS for movement disorders has been covered by health insurance system since 2000. In the meantime, 330 DBS cases were operated on in our institution. In which, 212 (64%) were Parkinson disease, and 47 (14%) were essential tremor. In addition to these common DBS indication, 63 cases of dystonia and 3 cases of neuroacanthocytosis were operated on.

Bilateral GPi-DBS also improves movement disorders seen in dystonia and nueroacanthocytosis cases. And this is especially beneficial to hereditary generalized dystonia and neuroacanthocytosis patients, where DBS is practically the only way to improve patient's symptom.

So far, we have 15 hereditary generalized dystonia cases proven by DNA testing (13 DYT1, 1 DYT3, 1 DYT11). Gradual but steady improvement of Burk-Fahn-Marsden scale were observed in the first 24 months. Final BFM scale improvement was 95%. All dystonia related symptoms improved, in which, however, dystonic movements improved first, then posture, and action dystonia at last. And all patients regained their social life. Neuroacanthocytosis cases are also good candidate for bilateral GPi-DBS.

Neuroacanthocytosis cases improve earlier after bilateral GPi-DBS than dystonia cases, although their improvement are limited to alleviation of choleric movement only. Personality impairment remains unchanged.

Patients with Gilles de la Tourette syndrome (GTS) is another potentially good candidate for DBS treatment. In Japan, 8 cases were reported to be operated on with acceptable outcome. From several reason, we are taking wait and see tactic for this disease and reviewing the reported data. Several targets are proposed for GTS including globus pallidus, medial thalamus, internal capsule, and nucleus accumbens. In which, thalamic target is now frequently employed for DBS. However, exact information concerning target coordinates and electrode angle are still lacking even in the peer review article. Also remaining unclear is an inquiry; which structure is stimulated by thalamic DBS for GTS. Therefore, we performed 3D anatomical simulation of thalamic DBS for GTS using our house made human cadaveric 3D atlas.

Not only Parkinson disease and essential tremor, DBS is an effective treatment choice for dystonia, chorea in neuroacanthocytosis, and probably motor tics seen in GTS.