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Education

1977-1983	Faculty of medicine, Nara Medical University
1985-1989	Graduate school of medicine, Nara Medical University

Research and Professional experience

1983/5/1-1984/6/30	Trainee at the Department of Neurosurgery, Nara Medical University
1984/7/1-1985/3/31	Trainee at the Department of Neurosurgery, Osaka Prefectural Hospital
1989/4/1-1990/12/31	Instructor at the Department of Neurosurgery, Nara Medical University
1991/1/1-1992/12/31	Physician at the Department of Neurosurgery, Nara Prefectural Nara Hospital
1993/1/1-1996/12/31	Instructor at the Department of Neurosurgery, Nara Medical University
1997/1/1-2007/3/31	Assistant professor at the Department of Neurosurgery, Nara Medical University
2007/4/1-2009/3/31	Senior Assistant professor at the Department of Neurosurgery, Nara Medical University
2009/4/1-2010/3/31	Associate Professor at the Department of Neurosurgery, Nara Medical University
2010/4/1-Present	Assistant Director at National Hospital Organization Nara Medical Center

1996/4/1-1996/10/31	researcher abroad for stereotactic surgery at UMEÅ University (Sweden) under Marwan I Haiz

Membership of academic societies

Japan Neurosurgical Society Member, Board of Councilors
The Japan Society for Stereotactic and Functional Neurosurgery Member, Board of Director
Japan Neuromodulation society Member, Board of Director
The Japan Stroke Society Board (2003-present)
The Japan society of neurotraumatology Editorial committee member

License and Degree

1983	Medical License
1991	doctoral degree in medicine
2012	Doctor of Philosophy in medicine from UMEÅ University (Sweden)

Awards

1996	Prize of Suzuki Jiro in Japanese society on Surgery for Cerebral Stroke

Clinical Experience of Intrathecal Baclofen Pump

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Objective

The spasticity often interferes with ADL and care of patients, and so the treatment is important. The intrathecal baclofen therapy (ITB) is principally applied for the patients with intractable spasticity due to various cerebro-spinal injuries. The baclofen acts on the spinal GABA-b receptors, to control the reflection of the spinal cord, improves spasticity. The intrathecal continuous infusion way by the implantable pump has been developed because the migration of baclofen to spinal cord is insufficient with oral administration. The ITB is a kind of the neuromodulation therapy because it affects the neural network with excellent adjustability. The advantage of ITB is possible to predict the therapeutic effect by screening.

I will talk about the application of ITB therapy for the patients with spasticity as well as other symptoms, surgical technique, adjustment method, the complications and their countermeasures.

Patients' population and method

Thirty-six patients who underwent implantation of ITB pump were included in this study and the average age was 52.53 years old. The patients with spasticity consists of 8 cases of spinal cord injury , 6 case of hereditary spastic paraparesis (HSP) and 20 of brain injury cases including thirteen stroke patients. Two patients underwent implantation of pump for dystonia.

Implantation of pump was performed in cases that screening was effective. Under general anesthesia the patient was placed in the lateral position and underwent implantation of the spinal catheter into the spinal cavity with paramedian puncture. Titration starting at 50 μ/day, it was increased by 10~15% each day

Clinical effect was evaluated by Ashworth score.

Results

1) Clinical Effects

The spasticity as well as dystonia was improved in all cases. In one patient for the purpose of improvement of spasticity, neuropathic pain was also improved

2) Optimal dose of the Baclofen

The optimal amounts of baclofen were as follows; brain damage group: 155.7±63 μg/day, spinal cord injury group: 102.6±64.3 μg/day and HSP group: 35+/−16.3. There is a need for careful titration especially in HSP group.

3) Catheter position

The spasticity Improvement rate between upper limb and lower limb were compared in stroke patients who indwelling catheter tip to the high-level (C6-Th1) and the lower level (Th5-Th10). The ratio of upper / lower improvement was 1.57±0.30 in high position cases and 0.69±0.16 in low position cases. There is a statistical significant difference.