

# 学位論文審査結果の要旨

所 属	三重大学大学院医学系研究科 甲 生命医科学専攻 臨床医学系講座 神経病態内科学分野	氏 名	西口 大和
審 査 委 員	主 査 西村 有平 副 査 今井 寛 副 査 成田 正明		
<p>(学位論文審査結果の要旨)</p> <p>Relationship of brain edema after deep brain stimulation surgery with motor and cognitive function</p> <p>【主論文審査結果の要旨】</p> <p>著者らは論文において下記の内容を述べている。</p> <p>Background: Some patients with Parkinson's disease (PD) develop peri-lead brain edema after deep brain stimulation (DBS) surgery. The influence of edema on neurological function is not well characterized. We investigated the relationship of brain edema after DBS surgery with motor and cognitive function.</p> <p>Methods: Thirteen patients with PD (6 males and 7 females; mean age: 61.2 years) who underwent bilateral subthalamic nucleus (STN) DBS surgery were included. All patients underwent magnetic resonance imaging (MRI) examination on day 6 post-DBS surgery. The volume of edema was measured either in the frontal white matter or STN on fluid attenuated inversion recovery (FLAIR) images. We examined the relationship between these volumes and changes in cognitive and motor function.</p> <p>Results: Patients were divided into those with frontal subcortical edema (FE) <math>\geq 3,000 \text{ mm}^3</math> (FE + group; n = 7) and <math>&lt; 3,000 \text{ mm}^3</math> (FE-group; n = 6). In the FE + group, the postoperative Mini-Mental State Examination score worsened by 2.4 points after one week compared with that immediately before surgery, while</p>			

that in the FE-group worsened only by 0.2 points ( $p = 0.038$ ). On comparing patients with peri-STN edema (SE)  $\geq 1,000 \text{ mm}^3$  (SE + group;  $n = 3$ ) and those with SE  $< 1,000 \text{ mm}^3$  (SE-group;  $n = 10$ ) showed that frequency of DBS tuning in the early postoperative period of the SE + group was lesser than that in the SE-group.

Conclusions: Development of FE after DBS surgery was related to transient cognitive decline. On the other hand, SE seemed associated with altered motor function and reduces the requirement for tuning in the initial period after DBS implantation.

パーキンソン病患者において DBS 術後の脳浮腫が運動機能および認知機能に与える影響について検討した論文であり、学術上極めて有益であり、学位論文として価値あるものと認めた。

Heliyon. 2022;8(2):e089000

Published: February 2, 2022

doi: 10.1016/j.heliyon.2022.e08900

Yamato Nishiguchi, Keita Matsuura, Yoshinori Hirata, Akane Mizutani, Natsuko Katoh, Hidehiro Ishikawa, Koichi Miyashita, Takaya Utsunomiya, Hiroyuki Kajikawa, Hirofumi Nishikawa, Tomohiro Araki, Akihiro Shindo, Hidekazu Tomimoto