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THE PAIN VALUE AND TOUCH THRESHOLD OF PATIENT WITH TRIGEMINAL NEURALGIA – THE EFFECT OF GAMMA KNIFE STEREOTACTIC RADIOSURGERY

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Trigeminal neuralgia (TN) is a chronic neuropathic pain disorder that makes daily life difficult. Recently, Gamma Knife surgery (GKS) has been employed for treating intractable pain control such as trigeminal neuralgia (TN) or cancer pain. Nine patients (4 males and 5 females) with TN of second branch were investigated in this study. All patients (mean age: 66.7±7.5) were irradiated a maximum dose of 90 Gy at retrogasserian after the target area were coordinated with magnetic resonance imaging (MRI) and computed tomography (CT). They were asked symptom, medical history and what induces the pain attack. We also assessed visual analog scale (VAS) of pain, presence or absence of allodynia, cold sensation dullness and touch threshold on the lateral of nasal wing using Semmes-Weinstein monofilaments before and 1, 3, 6, and 12 months after GKS. The relation of the pain value and touch threshold were estimated. There were two kinds of pain character, like an electric shock (5 patients) and like prickling (4 patients). The mean±SD of pain VAS value was 8.5±1.4 and touch threshold on disease side (6.0±2.8 gf/mm²) was significant higher than the healthy side (3.7±1.3 gf/mm²) at first visiting (paired t-test; P<0.05). All patients experienced a significant pain reduction without side

affections within 6 month after GKS. Allodynia, facial paresthesia or cold sensation dullness occurred before GKS disappeared within 3 months after treatment. However, there was no correlation between pain value and touch threshold. These results suggest that GKS is safe and effective method to let a pain and dysesthesia due to TN disappear. There are individual differences in these effects after treatment.

Biography

Mihoko Tomida has graduated from School of Dentistry at Asahi University and Graduate School of Medicine, Gifu University and acquired PhD. After having worked as an Oral Surgeon for four years; she became a teacher of Physiology. And she started to investigate the relationship between pain and emotion by using rat and human. She found that the pain was involved with nerve cells of an amygdala and the cingulate cortex from animal experiment. It was clear that listening to music reduces the pain perception from human experiment. However, the reason is unclear. Now, she looks into the relation between pain threshold and autonomic nerve activity.

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