Usefulness of PI Measurement to Detect the Effect of SGB in a Syringomyelia Patient

Mizusawa K., Kaneda T., Yamazaki H., Suzuki T. *Anesth Analg* 2008; 106; S-1–S-244

Introduction

There have been various methods to detect the effect of Stellate Ganglion Block (SGB). Among them, we have been studying the usefulness of the Perfusion Index (PI) that is one of the measurement items on the Masimo SET Pulse Oximeter. This time, we measured PI in a Syringomyelia patient and compared the reading with the effect of SGB.

Methods

The patient, who is 29 years old female had a left occipital headache, and a pain and palsy in the right upper extremity caused by syringomyelia with Chiari malformation. She is now undergoing treatment with SGB as an outpatient. In order to evaluate the effect of SGB, we put probes for pulse oximetry (Radical, Masimo Corporation) on both earlobes and index fingers of the patient. We also put probes for skin temperature nearby. For SGB, 6ml of 1% mepivacaine was injected in the base of the 6th transverse process. After the SGB, symptoms, objective signs such as Horner's syndrome, PI and temperature were observed.

Results

SGB was performed 8 times, in which Horner's syndrome was observed. The PI of the fingers and earlobes were reviewed every 5 minutes by comparing the changes baseline. The PI of the finger on the SGB side demonstrated an upward trend. And more, the PI of the earlobe on the SGB side showed an upward trend as well. The PI value of the earlobe were displayed in Fig.1.

Discussion

SGB is one of the treatments for Syringomyelia patient who takes on a sensory disturbance. But it is difficult to evaluate the effect of SGB. In this situation, effects of SGB can be observed by an increase of blood perfusion, and it can be detected by increasing of PI. So it is thought that increasing of PI is equal with appearing the effect of SGB. Furthermore, the temperature of the finger and earlobe on the SGB side showed an upward trend. These facts mean the effect of SGB for her. In this time, we find the increase of PI and it is in reproducibility. In conclusion, this case demonstrates the utility of the PI measurement as a useful method to detect the effect of SGB noninvasively in a sylingomyelia patient.

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