Comparison of Caloric Test with Galvanic Test in Dizziness

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ABSTRACT

This study was performed to assess the applicability of galvanic vestibular stimulation (GVS) method, after Volpe (1972) reporting that the stimulation of the head with current induced vertigo. Volpe (1972) described this test method for the first time. Plata et al. (1997) introduced the method to clinics by using the use of light for symptomatic. But not only the result of the ocular movement and the correlation asymmetry of response to galvanic vestibular stimulation was almost identical to that of the nystagmogram and vestibulography. In normal subjects, by increasing stimulating threshold, GSN was increased to the positive electrode, and PGSN was decreased to the negative electrode. In patients with peripheral vestibulopathy, when the negative electrode was attached to the fist side, increased GSN was attached to the positive electrode, and increased PGSN was decreased to the negative electrode. The mechanism of nystagmus by galvanic vestibular stimulation has been investigated with animal experiments, and it is speculated that electric stimulation generates action potentials by mediating an effect on vestibular nerves estimated to be located below the sensory epithelium of the end of afferent nerve fiber.

INTRODUCTION

In normal subjects, by increasing stimulating threshold, GSN was increased on the positive electrode, and PGSN was decreased on the negative electrode. In patients with peripheral vestibulopathy, when the negative electrode was attached to the fist side, increased GSN was attached to the positive electrode, and increased PGSN was decreased to the negative electrode. The mechanism of nystagmus by galvanic vestibular stimulation has been investigated with animal experiments, and it is speculated that electric stimulation generates action potentials by mediating an effect on vestibular nerves estimated to be located below the sensory epithelium of the end of afferent nerve fiber.

METHODS AND MATERIALS

Thirty normal subjects and seventeen patients with peripheral vestibulopathy were selected on the basis of medical history and neurological examination. Brinna-cathodic current was applied to each subject and patient's vestibular system. The stimulus was increased in 3mA intervals, and the evoked vestibular response was measured in patients by alternative binaural bithermal caloric test.

RESULTS

In normal subjects, by increasing stimulating threshold, GSN was increased on the positive electrode, and PGSN was decreased on the negative electrode. In patients with peripheral vestibulopathy, when the negative electrode was attached to the fist side, increased GSN was attached to the positive electrode, and increased PGSN was decreased to the negative electrode. The mechanism of nystagmus by galvanic vestibular stimulation has been investigated with animal experiments, and it is speculated that electric stimulation generates action potentials by mediating an effect on vestibular nerves estimated to be located below the sensory epithelium of the end of afferent nerve fiber.

REFERENCES

