

原著

短潜時視覚誘発反応の研究: 複合的画像診断法の応用 (筒井 純 感覚矯正学科学科長追悼論文)

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A Studies on the Short Latency Visual Evoked Potential: Evaluation of the Composite Image Diagnosis

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Abstract

The purpose of this study was to identify the sites of generators in short latency visual evoked potentials (SVEP) in normal volunteers by non invasive method. The subjects were exposed to one thousand flashes of a xenon flash lamp with an intensity of 1J. and a frequency of 8HZ at a distance of 30 cm. Twelve active electrodes were placed on the scalp according to the international 10/20 method and a balanced non cephalic reference electrode was applied. A microcomputer was employed in a multi dimensional analysis by the dipole tracing method. After calculation of the equivalent dipole, we superimposed the dipole datas onto MRI images. Coronal and sagittal views achieved by the composite images disclosed an equivalent dipole generator of the N26 component near the optic nerve, of the N32 component near the lateral geniculate nucleus, of the N40 component near the optic radiation, of the P52 component near the brain stem, and of the N65 component near the occipital cortex. Although there are some limitations in the present dipole tracing method, we believe that it is a powerful tool for the identification of the generator sites of evoked potentials in a three dimensional fashion.

要約

本論文の目的は複合的画像診断法による短潜時視覚誘発反応(SVEPと以後略す)の主要成分の電位発生源位置と機能状態の分析にある。われわれは100msec以内に6主要成分(N26,N32,N40,P52,N65,N85成分)を同定した。複合的画像診断によるとN26成分の等価的電気双極子(以後EDと略す)は視神経近傍、N32成分は外側膝状体近傍、N40成分は視放線近傍、P52成分は脳幹部近傍、N65,N85成分は後頭葉皮質近傍にそれぞれ存在した。よってこれらの部位がそれぞれの主要成分の電源である可能性が示唆された。本法は現在単一電源推定法であるため種々の制限が存在するが今後誘発電位の電源の非侵襲的推定に有用であると考えられる。
