

原著

中潜時視覚誘発反応の研究: 複合的画像診断法の応用

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Studies on Middle Latency Visual Evoked Potentials : Evaluation of the Composite Image Diagnosis

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Abstract

By composite image diagnosis using dipole tracing data and anatomical images obtained by X ray and MRI CT scans, we studied the generator sites and mechanisms of electrophysiological status in middle latency visual evoked potentials ; I. E. the paradoxical and/or anatomical lateralization of the P 100, N 150 and P 200 components, in ten normal volunteers and thirteen patients with various hemianoptic disorders. The equivalent dipoles (Eds) of the P 100 and N 150 components which were elicited by flash stimulation in normal subjects, were both located in the occipital lobe and moved sequentially from deep to superficial layer. The EDS of the P 200 components were situated near the occipital pole. With pattern reversal hemifield stimulation, the EDS of the P 100, N 150, and P 200 components were located nearby the area 18.

However the waveforms of P 100 and P 200 components in the pathological cases showed interindividual variations of the anatomical, paradoxical and mixed lateralization, the EDS of major components were always situated in the functional hemisphere. The determining factor of this lateralization was the direction of the vector moment. Composite image diagnosis can provide a great deal of information for evaluation of the site of VEP generator and about the functional status of the brain in a three dimensional fashion.

要約

われわれは中潜時視覚誘発反応のP100,N150,P200成分の電位発生源について複合的画像診断法を用いて分析を行った。刺激方法は閃光刺激とパターン反転右半側視野刺激を行った。対象としたのは正常成人10名と半盲症例13名である。正常人において閃光刺激のP100,N150成分の等価的電気双極子(EDと略す)は後頭領域と大脳深部の2カ所に算出されたのに対してP200成分のEDは後頭極近傍に算出された。正常人においてのパターン反転右半側視野刺激のP100,N150,P200成分のEDは左側のarea 18近傍に算出された。病的症例では、閃光刺激によるP100,P200成分の電位分布はanatomical,paradoxical,mixed lateralizationを示し一貫性を欠いていた。しかしそれらのEDは常に健常側の後頭領域に存在し、そのベクトルの向きがlateralizationの決定因子であることが判明した。複合的画像診断法は誘発反応の電位発生源の研究に多大な情報を提供してくれる有用な方法であると考えられる。
