Short-latency Somatosensory Evoked Potentials to median and tibial stimulation recorded by intracerebral electrodes

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Introduction

Preoperative evaluation, by means of intracerebral electrodes, in patients presenting with symptomatic drug resistant epilepsy, provides an opportunity to explore the S1 area in depth.

Methods

We studied 7 pediatric patients with drug resistant epilepsy. Intracerebral electrodes were implanted in frontal, temporal and parietal lobes at different sites, depending on seizure types. SEPs were recorded to median and tibial nerve stimulation from the intracerebral electrode contacts referred to the earlobe ipsilateral to the stimulation. The analysis was addressed to the electrode contacts where an inversion of SEP component polarity was observed.

Results

This is the first study demonstrating the origin of the tibial nerve P40 component from the medial surface of the S1 area by using intracerebral SEP recording.