



주 병 역

명지병원

IOM for brain surgery

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Brain surgery incurs a significant risk of a new motor deficit in lesions within or adjacent to the motor areas and pathways which, for the patient, presents one of the most disabling complications of such operations. It is a major concern of intracranial procedures to delineate and monitor motor regions in order to preserve their structural and functional integrity, while still achieving maximal cytoreduction. The technique of motor evoked potential recording has had to be adapted to intraoperative neurophysiologic monitoring (INM) under general anaesthesia, but has been available for clinical use now for almost ten years. This article suggests the current technique and related methods in supratentorial tumors, lesions in and around the brainstem, and aneurysm surgery. Intraoperative MEP recordings have been shown to reliably reflect an impending new motor deficit. Irreversible MEP deterioration heralds new paresis, and unaltered recordings predict preserved motor function. This is also true in aneurysm surgery where conventional SEP monitoring may yield false-negative results with regard to development of a new motor deficit. Moreover, if MEP deterioration can be reversed, or halted by early surgical intervention, the presence of only a transient motor deficit, or even the lack of a new postoperative deficit, indicates the success of the MEP monitoring method in the prevention of a significant motor impairment. Certain complicated lesions can only be operated on at all because MEP monitoring is available. In conclusion, intraoperative MEP monitoring is a useful aid in brain surgery with which to avoid a new motor deficit without compromise to the surgical result. Controlled prospective studies will be required to verify the clinical value of the method.

Key Words: Brain tumor, Cerebral aneurysms, Motor evoked potentials, Somatosensory evoked potentials, Intraoperative neurophysiologic monitoring

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