VESTIBULAR EVOKED MYOGENIC POTENTIALS (VEMP): A DIAGNOSTIC TOOL IN THE VESTIBULAR PATHOLOGY

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The VEMP are myogenic potentials evoked by vestibular stimuli. They allow to study not only the function of the vestibular organs but also the vestibulo-spinal and the vestibulo-ocular pathways. The VEMP has been studied initially in the 60s but only in the 90s Colebatch has introduced a reliable and reproducible procedure that is nowadays wide used in the clinical vestibular practice. VEMP can be evoked with different stimuli and recorded at various sites but the two most diffuse clinical applications are the cervical VEMP (cVEMP) and the ocular VEMP (oVEMP).

The cVEMP are generally evoked by air conducted sounds to the ear and recorded on the ispilateral sternocleidomastoideus muscle (SMC) by mean of a surface EMG. The cVEMP describes the sacculo-collic inhibitory projections through the inferior vestibular nerve to the SMC.

The oVEMP are best evoked with low frequency vibrations to the skull and recorded under the contralateral eye with a surface EMG, at the projection of the inferior oblique muscle (IMO). oVEMP describes the vestibulo-ocular crossed excitatory projections through the superior vestibular nerve to the IMO.

VEMPs have a diagnostic value in some vestibular disorders such as the inferior vestibular neuritis and in the superior semicircular canal dehiscence syndrome, but they can contribute to the diagnosis of many other audiovestibular disorders, as the Meniere syndrome, the neuropathies, the innerear malformations.

With cVEMP and oVEMP it is now possible to study directly the function of the otolith organs regardless of the semicircular function but also investigate the sacculo-spinal and vestibulo-ocular projections in central disorders as the MS and brainstem affections.