Facial nerve neurography

Facial nerve neurography involving magnetic stimulation techniques can be used to assess the intracranial segment of the facial nerve and the entire facial motor pathway, as opposed to the traditional neurography, involving only extracranial electric stimulation of the nerve. Both our own experience and data published in the literature underline the value of the method in localising facial nerve dysfunction and its role in clinical diagnosis. It is non-invasive and easy to perform. Canalicular hypoexcitability has proved to be the most useful and sensitive parameter, which indicates the dysfunction of the nerve between the brain stem and the facial canal. This is an electrophysiological finding which offers for the first time positive criteria for the diagnosis of Bell's palsy. The absence of canalicular hypoexcitability practically excludes the possibility of Bell's palsy. The technique is also able to demonstrate subclinical dysfunction of the nerve, which can be of considerable help in the etiological diagnosis of facial palsies. For example, in a situation where clinically unilateral facial weakness is observed, but facial nerve neurography demonstrates bilateral involvement, etiologies other than Bell's palsy are more likely, such as Lyme's disease, Guillain-Barré syndrome, meningeal affections etc. Furthermore, the technique differentiates reliably between peripheral facial nerve lesion involving the segment in the brain stem or the segment after leaving the brainstem [1)].

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Arányi Z, Simó M. [Role of transcranial magnetic stimulation in clinical diagnosis: facial nerve neurography]. Ideggyogy Sz. 2002 Nov 20;55(11-12):356-67. Hungarian. PubMed PMID: 12632796.