each stimulus intensity. The examination was considered pathological when wave latencies and/or interpeak intervals had increased more than 2 S.D. with respect to data obtained in controls, or when one of the components was absent. Twenty patients (83.3%) had normal BAEPs. These data do not support the hypothesis of acoustic pathway/brain-stem involvement in Bell's palsy.

86. Eighth cranial nerve involvement in multiple sclerosis (MS): BAEP and MRI follow-up of a patient. – R. Bergamaschi, A. Romani, R. Callieco, A. Zilioli, M. Versino, R. Zappoli, M. Benazzo [a] and V. Cosi (Istituto Neurologico "C. Mondino," and [a] Clinica ORL, Pavia)

Sudden hearing loss in MS has usually been attributed to brain-stem involvement. We report a patient with sudden hearing loss and BAEP and MRI evidence of a lesion in the eighth nerve. A 28-year-old woman, affected with definite relapsing-remitting MS for 4 years, complained of paresthesias and right-sided hearing loss. BAEPs (previously always normal) showed on the right side: absence of peak I, peaks III and V were very delayed (5.66 msec and 7.46 msec) with normal III-V IPL. Gadolinium MRI showed an enhancing lesion in the right eighth nerve. The patient was treated with 6-methylprednisolone 500 mg i.v. for 6 days. BAEPs were repeated on days 3, 6, 9, 16, 23, 30, 37 and 44; MRI on days 6 and 23. The latencies of peaks III and V progressively reduced and normalized on day 23. A very delayed peak I (2.82 msec) was already detectable on day 6. IPLs were always normal. The MRI was unchanged on day 6, and showed a reduction of the lesion on day 24. The present study is the first combined BAEP and MRI demonstration of an eighth cranial nerve lesion causing sudden hearing loss during a bout in an MS patient.

87. ERPs and RTs during performance of concurrent tasks of increasing difficulties. – A. Ragazzoni, S. Matà, A. Grippo, C. Navona [a], M. Bizarri [a], U. Barcaro [a] and F. Pinto (Dipartimento di Scienze Neurologiche e Psichiatriche, Università di Firenze, Florence, and [a] I.E.I., C.N.R., Pisa)

Sixteen right-handed healthy volunteers conducted a primary visuomotor task (playing with a video-game) while performing a secondary task of sensory discrimination (e.g., auditory oddball), in which event-related potentials (ERPs) and reaction times (RTs) were recorded. As the experiment design assessed the effects of manipulating primary-task difficulty on ERP components (N1, P2, N2, P3) and RT values, different levels of difficulty were provided: level 0 included only the secondary (oddball) task; levels 1, 2 and 3 required the dual-task performance, with increasing difficulties of the primary task. The introduction of the primary visuomotor task increased the latencies of RT and ERP P3 component, and decreased N1 and P3 amplitudes. Increasing the difficulty of the primary task did not modify RT and ERP latencies further, but induced a systematic decrease in P3 amplitude.

88. Diagnosis of sexual impotence in multiple sclerosis: which is the role of neurophysiological tests? – A. Ghezzi, G.M. Malvesti [a], S. Baldini, M. Zaffaroni and A. Zibetti (Centro Studi Sclerosi Multipla and [a] Divisione Urologia, Osp. Gallarate, Gallarate)

Sexual impotence is not rare in MS patients. Its diagnosis is not always easy as psychological findings frequently accompany neurological symptoms. We studied 35 MS patients by means of pudendal evoked potentials (PEPs), motor evoked potentials of the bulbocavernosus muscle (BC-MEPs), bulbocavernosus reflex (BCR) and nocturnal penile tumescence test (NPT test) in order to evaluate their diagnostic role. According to the type of sexual disturbance patients were divided into asymptomatic patients, patients with inconstant sexual failure and patients with severe impotence. Neurological involvement was assessed by Kurtzke EDSS and FS. Clinical scores were progressively higher from the first to the third group. EDDS was respectively 3.2 ± 2.1, 3.9 ± 1.9 and 4.8 ± 1.4. Neurophysiological responses were delayed: PEPs: in 5/6, 10/15 and 11/13 cases; BC-MEPs: in 1/6, 9/15, 10/12 cases; BCR: in 0/6, 2/15, 1/13 cases. NPT test was recorded in 14 cases of the second and third groups, being abnormal in 1/8 and 3/6 cases respectively. In conclusion, abnormal responses were equally frequent in the 3 groups of patients. The role of neurophysiological tests in the diagnosis of impotence seems poor, in any case normal responses are likely associated with the absence of sexual impairment. Results should be evaluated in the light of clinical findings.

89. Subarachnoid haemorrhage outcomes. Neuropsychological and neurophysiological evaluation by EPs and ERPs. – G. Asteggiano, L. Bergamasco, P. Ciaramitaro, M. Torchio, S. Vighetti, M. Fontanella [a] and C.A. Pagni [a] (Istituto di Clinica delle Malattie del Sistema Nervoso, Università di Torino, Turin, and [a] Istituto di Neurochirurgia, Turin)

We selected and studied 36 patients (13 males and 23 females) affected with subarachnoid haemorrhage (SH) caused by the breakage of a saccular intracranical aneurysm. They were operated for clipping the aneurysm. Recruitment criteria were: age up to 70 years; Glasgow Outcome Scale equal to 1 at the removal; no psychic and cognitive impairments before the SH. All the patients were submitted to psychometric (Weschler and Rorschach Scales, Hamilton Psychiatric Rating Scale for depresssion and anxiety, State Trait Anxiety Inventory, MMPI) and neurophysiological evaluation (CSA, acoustic and visual EPs and ERPs). From the literature ERPs have been considered as markers of cognitive functions; in particular we analysed P300 which is the most reliable component of ERPs. The patients were divided into 2 groups: (1) SH without parenchymal lesions; (2) SH with parenchymal lesions supported by neuroimages. The 2 groups were divided into 3 subgroups: (A) patients with 1 recording within 1–3 months after the operation; (B) patients with 1 recording within 1–5 years after the operation; (C) patients with 2 recordings, the first within 1 month and the second within 12 months after the operation.

90. The role of muscular activity in the action of botulinum toxin type A. – R. Eleopra, V. Tugnoli, R. Quatrale, G. Tralli and D. De Grandis (Neurological Department, S. Anna Hospital, Ferrara)

The pharmacological action of botulinum toxin (BT) type A is influenced by various factors. In order to detect the relevance of muscle activity on BT action, we studied a population of 15 volunteers affected with focal dystonia. In all the subjects we injected a low dosage of the drug (3 IU of Botox) in the EBD muscles of both feet. To only one foot of 12 subjects we applied continuous electrical stimulation of the SPE nerve at the ankle for 24 h, while in 3 subjects we performed an anaesthetic block of the SPE nerve at the ankle for 24 h. On both sides of all the patients we calculated the maximal CMAP amplitude before and after the injections and the percentage variation. Our data showed that on the side treated with continuous electrical stimulation the percentage block of the CMAP was greater than on the side not stimulated, while on the side with the anaesthetic block CMAP was smaller. In conclusion, muscle activity could be relevant in justifying some aspects of different clinical responses.

91. Neurophysiological study concerning the action of botulinum toxin types A, C and F in man. – R. Eleopra, C. Montecucco [a], V. Tugnoli, L. Lispi and D. De Grandis (Neurological Department, S. Anna Hospital, Ferrara, and [a] Department of Neurological Science, University of Padua, Padua)

We studied in 24 volunteers the neurophysiological effects induced by the injection of various botulinum toxins (A, C and F), in order to