PP 24

The Use of the Auditory Evoked Postauricular Response in the Detection and Localization of Brainstem Lesions

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The postauricular response (PAR) is an auditory evoked potential (P11-N15) generated in the posterior auricular muscles and can be recorded by electrodes placed over the mastoid area. It is mediated through the facial nucleus and seventh cranial nerve. The pathways for acoustic input to the facial nucleus in man are incompetely known, but afferent fibers probably descend from the inferior colliculus through the pontine tegmentum.

We report a series of patients with clinical signs of brainstem dysfunction and CT-verified pontine lesions who displayed a unilateral absence of the PAR. In four patients the brainstem auditory evoked response (BAER) was normal bilaterally.

Since the PAR can be recorded simultaneously with the BAER using the same recording derivations and amplifier bandpass, its assessment can provide a useful adjunct to BAER and somatosensory evoked potential recording.

PP 25

MCA Occlusion in the Squirrel Monkey: Clinical Picture and Torque Motor Studies

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After describing the EMG response to torque-motor-generated displacement of the elbow, wrist, and metacarpophalangeal joints, we attempted to study these same responses in a previously reported stroke model. The middle cerebral artery (MCA) was occluded at the bifurcation, and in some animals a decompressive craniectomy was performed. All animals were hemiparetic postoperatively, but recovered full use of the involved leg and hand within 2 and 6 months, respectively. They did not develop increased tendon jerks or muscle tone clinically, although posture was abnormal. Torque motor studies were normal at the elbow and wrist and in finger extensors. In finger flexors, the medium latency (M2) component was decreased or absent in the first month, and some animals subsequently developed an increased early latency (M1) component. The long-latency M3 was sporadically present, as in normals. These results demonstrate M2 changes in distal musculature, related to MCA occlusion, while confirming the normal M2 activity, reported by others, in proximal musculature of lesioned primates. This is consistent with the proximal-distal distribution of corticospinal terminations.

PP 26

The Effect of Age on Nerve Conduction Studies in Myotonic Disorders

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Ulnar, median, peroneal, tibial, and sural nerve conduction studies were analyzed in 44 patients with myotonic dystrophy (MD) and 12 patients with myotonia congenita, aged 5 to 76 years. Mean compound muscle action potentials were reduced ($p < 0.01$) in both groups, more so in MD: (ulnar/hypothenar 8.5 ± 2.7 mV; median/thenar 7.9 ± 3.8 mV). Mean motor conduction velocities (CV) were normal for patients 16 to 65 years. However, the reduction in CV with age was greater for patients with MD (correl. coeff: -.6 to -.7), than normal subjects (correl. coeff: -.2 to -.3). Mean F-wave latencies correlated even more strongly with age in MD (.7 to .8) than in normal subjects (.0 to .2). Abnormal CV values in multiple nerves were present in four patients with MD, all over 65 years. No correlation of CV was present with fasting blood glucose, IgG, or clinical features of MD. This study does not provide evidence for the occurrence of a generalized peripheral neuropathy or entrapment mononeuropathies in MD, but suggests rather that a greater than normal slowing of nerve conduction occurs with advancing age. Age-CV correlations in myotonia congenita did not exceed normal.

PP 27

Clinical Neurologic and Electrophysiologic Correlates of Smooth Pursuit Eye Tracking

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Smooth pursuit tracking (SPT), a genetically determined function, is a reproducible neurologic marker that is thought to be a measure of involuntary attention. Alteration of SPT can be objectively evaluated and clinically correlated. Using this technique, in a double-blind randomized prospective study, we screened 300 male volunteer college students who subsequently were divided into two groups consisting of the highest accuracy trackers (HAT) and the lowest accuracy trackers (LAT). Ten individuals from HAT and 22 from LAT (ages 20 to 31) were available for evaluation by clinical neurologic examination, including tests for integration of fine coordination and associated symmetric movements. Each item on the exam was scored from 0 (normal) up to 4 (most severe). An EEG, BAER and VER were obtained as part of the protocol. Seven subjects had abnormalities on one or more of these testings: four in EEGs, four in BAER and two in VER. All except one were in the LAT group. A correlation ($p < 0.001$) was obtained between low accuracy tracking and total score on the clinical neurologic exam. This approach in looking at a normal population may prove to identify biologic markers which reflect differences in central nervous system functioning that have neurophysiologic implications.

PP 28

The Pharmacokinetics of Lisuride in Parkinsonian Patients

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The single and multiple oral dose plasma kinetics of lisuride were studied in 11 patients, using radioimmunoassay. Following 300 μg (3.6-5.1 μg/kg), absorption was rapid, with a mean time-to-peak of 38 minutes. Large differences in peak concentration (12X) and area under the curve (7X) were found with similar times-to-peak and elimination half-lives. Higher peak concentrations were associated with an increased frequency of acute side effects. When multiple 300-μg doses were administered, the time to reach steady state was consistent with the elimination half-life (2 hours) determined from single-dose kinetics. Plasma concentrations 10 to 12 hours after the last dose, however, suggest that a terminal phase exists, representing slow release from tissue stores. In individual patients, the peak concentration following a single dose was predictive of steady-state levels. The large between-patient and small