

animals following brain trauma and cerebrovascular disturbances produced by occlusion of different cerebral arteries and veins; an ischaemic softening becomes a haemorrhagic infarct. General cerebral symptoms (body temperature, haematological changes, meningeal symptoms etc.) were more pronounced in these animals. For these reasons we can say that inflammatory symptoms do accompany the syndrome following insult and trauma to the brain.

The pathological processes typical of the perifocal areas round the traumatized brain were less pronounced in those animals which tolerated the antigen to the nervous tissue.

Patients having disorders of cerebral blood flow have in their sera antibrain-antibodies.

These observations suggest that the pathological processes seen in the clinical and morphological pictures following insult and trauma to the brain to a certain degree depend on autoallergic reactions.

618. Studies of motoneuron excitability in hemiplegics

R. GARCIA-MULLIN and R. F. MAYER, Department of Neurology, University of Maryland School of Medicine, Baltimore, Md., U.S.A.

In patients with spastic hemiplegia many types of strong voluntary contraction of unaffected muscles bring forth an increase in tone and even the development of an associated movement on the hemiplegic side (Marie and Foix, *Rev. Neurol.*, 1916, 1, 3). In the present study voluntary contraction of head and neck muscles and other reinforcement maneuvers were used to compare the postural adjustments that take place in both arms in normals with those in patients with flaccid or spastic hemiplegia.

The EMG activity of homologous muscles was recorded by means of surface electrodes during the reinforcement maneuvers. The characteristics of the monosynaptic (H) and the antidromic (F) responses and of the silent period of the hand muscles were tested at rest and during contraction.

During strong contraction, EMG activity appeared earlier and was more marked on the hemiplegic than on the normal side and this was proportional to the degree of spasticity. In normals and hemiplegics, an increase in amplitude of the F response was observed during reinforcement, especially during strong contraction of the opposite hand. During these activities neither a change in the duration of the silent period nor activation of an H response was observed in hand muscles.

These observations will be discussed in relation to the variable effects of reinforcement on reflex activity in man and the inhibitory action of the corticospinal tract on motoneurons.

619. Klinische Symptomatologie bei zunehmender Hirndrucksteigerung (das akute Mittel- und Bulbärhirnsyndrom)

The clinical symptomatology of rising intracranial pressure (the acute midbrain and bulbar syndrome)

F. GERSTENBRAND und C. H. LÜCKING, Psychiatrisch-Neurologische Universitätsklinik, Wien, Österreich und Max-Planck-Institut für Psychiatrie, München, Bundesrepublik Deutschland

Es wird die klinische Symptomatologie einer zunehmenden Mittel- und Bulbärhirneinklemmung durch supratentorielle Prozesse beschrieben. Entsprechend der fortschreitenden Mittelhirneinklemmung von medial lassen sich 4 Phasen des akuten sekundären Mittelhirnsyndroms abgrenzen. Das Erkennen der ersten beiden Phasen ermöglicht frühzeitig eine beginnende Hirnstammeinklemmung zu diagnostizieren und bei einem Teil der Fälle durch gezielte Therapie eventuell zu verhindern. Eine durch das Fortschreiten der craniokaudalen axialen Massenverschiebung eintretende Einklemmung der Medulla oblongata lässt sich klinisch im Symptomenkomplex des akuten sekundären Bulbärhirnsyndroms exakt erfassen. Dieses Symptomenbild ist trotz Zusammenbruchs der wichtigen vegetativen Regulationszentren in Einzelfällen reversibel, führt aber nach langen Bestehen zu einem irreversiblen Zusammenbruch der Hirnfunktionen, dem sogenannten Hirntod. Neben der klinischen Symptomatologie wird auch auf die EEG-Veränderungen und morphologischen Grundlagen eingegangen.

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ROGER DUVOISIN, New York, N.Y.
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