

DIFFERENT PATTERNS OF "INNER CEREBRAL TRAUMA" AND A NEW CLASSIFICATION OF BRAIN INJURY

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Description:

The term "inner cerebral trauma" has been adopted to indicate a pattern of deep brain lesion that occurs frequently in closed head injury of the acceleration-deceleration type. In patients with severe closed brain injury the lesions occur in the central region of the brain, the typical pathological pattern is characterized by multiple lesions in the corpus callosum, periventricular regions, semioval centre, basal ganglia, hippocampal area and brainstem.

Depending on the direction of traumatizing forces the pattern of lesions were subdivided in a "upper" and a "lower" inner cerebral trauma and a rotation trauma. The high sensitivity makes MR a valid method for documenting these lesions effectively.

Methodology:

The study population includes 150 patients (112 male, 38 female), with a mean age of 24,2 years (5-69). Inclusion criteria were suspicion of inner cerebral Trauma on CCT or discrepancy of CCT-findings and clinical symptoms. Clinically, acute midbrain syndrome (MS) was present in 22 patients, prolonged MS in 25, apallic syndrome in 52 patients, and a post-apallic stage in 51 patients. All patients underwent a CCT examination in the acute stage, MR-imaging (1.5 T, Magnetom, Siemens Erlangen) was performed in 22 patients within one week after the accident, in 28 patients between one week and one month, in 60 patients within one month and one year and in 60 patients later than one year post-trauma.

Conclusion:

From neuroradiological point of view we differentiate between linear external brain injury with coup and contre-coup lesion, linear internal brain injury, subdivided into upper and lower internal brain injury and a rotation trauma. Contrary to the diagnostic system of brain contusion and concussion, we differentiate four clinical categories of severity of brain injury. This new system of classification permits a rapid detailed diagnosis of brain injury and its sequelae and a more early establishment of prognosis.



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