

nuclei. The clinical features were observed macroscopically or electromyographically.

By using the above mentioned various convulsants there was noted a little difference in muscle convulsive features, but as a rule when pontine nuclei seemed to be slightly excited, partial clonic convulsion of unilateral or bilateral forelimbs appeared; when it was markedly excited, tonic and alternated convulsion was generalized.

During these convulsions EEG were taken from cerebral and cerebellar cortices, hippocampus and brain stem nuclei such as pontine nuclei, red nucleus, centrum medianum etc. Depth electrogram was recorded by concentric bipolar electrodes which were inserted stereotaxically and fixed by dental cement. Muscle relaxant was used if necessary.

Corresponding to partial clonic convulsion, a considerably localized convulsive pattern was seen only in stimulated pontine nuclei as spike burst. Typical convulsive pattern from pontine nuclei was 40-10 per second 30-100 μ V continuous rhythmic oscillation and propagated to the below mentioned parts in the following order; bilateral red nuclei and contralateral pontine nuclei, bilateral cerebellar cortices, homolateral and contralateral centrum medianum and scarcely cerebral cortex. No propagation was seen in hippocampus, caudate nucleus and amygdaloid nucleus.

101. A study on cerebral hemispherectomy with special reference to pathoanatomical study of one autopsy case.

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The authors report one autopsy case which underwent left cerebral hemispherectomy just four years ago.

The pathoanatomical findings were summarized as follows:

1. Moderate hydrocephalus was noticed, however, the brain stem shift which had been pointed out by other several authors was completely neglected.
2. The thalamus on the operated side shrunk remarkably and nearly disappeared although it had been kept intact at the time of operation.
3. Pontile and bulbar structures on the operated side and cerebellar hemisphere on the opposite side were reduced in size, and the brain stem on the operated side dislocated and shifted downwards as a whole. The contralateral half of the spinal cord, particularly lateral funiculus, became smaller than the ipsilateral half of it.
4. Corticospinal tract, corticobulbar tract and corticopontile tract originated

from the removed cerebral hemisphere showed falling off of medullary sheath by Klüver-Barrera staining. However, the authors could still recognize some well preserved fibers in the lateral degenerated corticospinal tract and the dorsolateral pyramidal tract called by Hirasawa or superficial corticospinal tract pointed out by Woolsey was also noticed.

5. Nerve cells of red nucleus, substantia nigra, nuclei of cranial nerves and anterior horns of spinal cord were unchanged.

From the above mentioned findings the authors came to the following conclusion.

a. The preserved motor functions after cerebral hemispherectomy is highly probable to be maintained by ipsilateral corticospinal tract which could be showed by Klüver-Barrera staining, and this fact is supported by the report in which we presented it clearly by March-staining in the autopsy case of cerebral hemispherectomy.

b. We confirmed that the unilateral healthy thalamus serves for the sensation of the whole body. The well preserved functions of cranial nerves will be attributed to the bilateral innervation of these nuclei.

c. Also, the hypothalamus on the operated side almost completely disappeared. Consequently, the autonomic functions are obviously sustained by unilateral hypothalamic structures. In such a condition the functional ability of the autonomic nervous system is seemed to be apt to fall.

102. Electroencephalographic studies of infantile hemiplegia treated by hemispherectomy.

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The electroencephalography in three cases of infantile hemiplegia treated by hemispherectomy, preoperative records showed slow activity, seizure discharge and spikes, spikes and slow activity in each case. Abnormal activities were on the same side as the hemiplegia in one case and on the bilateral side in the other cases.

Following hemispherectomy the spikes had disappeared in all cases, but slow activity had remained 261 and 380 days in two cases. The amplitude of activity on the removed side had showed less voltage than on the opposite side, and on the unoperated side was markedly diminished as compared to the preoperative activity in one case. Normal activity began to reappear at the time when vital effect by hemispherectomy had recovered to preoperative condition after one month in one case and the prognosis of this patient had been better than in the other cases.