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S-3. Nucleus Ventrales Intermedius of the Thalamus

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Nucl. ventralis intermed. (Vim) of the thalamus, which is lying posteriorly to VL and anteriorly to the sensory relay nuclei, was investigated and proved that in this small nucleus the lowest threshold muscle afferents are sending projection. By using CAT computer, triphasic potential could be recorded from this small area, for ulnar nerve shocks at intensities below the threshold for evoking the muscle contractions.

Velocity for this conduction was measured as 86m/sec (9 cases).

This Vim area was also experienced as mainly concerned with tremor rather than with rigidity. Electrical stimulation of Vim produces selective increase or decrease of tremor and not of rigidity. Small surgical lesion in this area results in alleviation of tremor and not of rigidity.

S-4. The Effects of Electrical Stimulation on the Motor and Sensory System during Stereotaxic Operations

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The characteristic effects of electrical stimulation in Ventro-oralis, Centre médian of thalamus and Pallidum internus on the motor and sensory function are observed during 200 streotaxic operations. In 75% of cases of V.o. posterior

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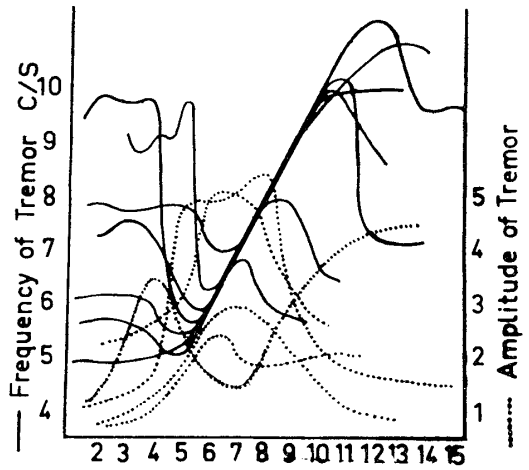
stimulation the spontaneous tremors of contralateral fingers clearly synchronize with each volley of the 5 to 9 cps stimulation, while such forced tremors are observed only in 30% during V.o. anterior stimulation. In the patients without extrapyramidal disorder the stimulation of V.o. results in no change of the motor function or has very high threshold to cause any effect on the system. In 90% of cases of CM stimulaltion the pain or heat sensation is induced and in 60% its stimulation evokes involuntary movements, especially typical tremor that synchronizes with frequencies of stimulation such as seen in the cases of V.o. stimulation. The stimulation of Pallidum internus does not change frequency of tremor but modifies only amplitude and muscle tone.



The relation between frequency and amplitude of tremor and stimulating frequency in 7 cases of V.o. and CM stimulation.

S-5. The Motor Responses to the Stimulation of the Rostral Human Brain Stem

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During streotaxic operations for the violent behavior (under general anesthesia) and spasmodic torticollis (awaked state), various types of motor responses are obtained by the high cycle stimulation of the rostral brain steam. They mostly consist of neck and ocular movements, and extremities are scarcely

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