

Our preliminary findings obtained in these patients indicate a possibility of determining the location of the coagulation electrode and suggest the need for extension of such observations.

5. Experimental and Clinical Studies on the Destruction Method at the Stereotaxic Surgery

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On laboratory cats with electrodes permanently implanted in the cerebrum the Oil-Wax infusion aimed at the pallidum as well as the destruction by means of high frequency current aimed at the thalamus was conducted stereotaxically. Changes occurring in the destroyed site and in its surroundings on that occasion were followed with the lapse of time in both aspects of local impedance of the brain and the depth EEG, and after sacrificing the animals observation was made macroscopically and histologically on the areas concerned. On the other hand, with the human brain local impedance fluctuations as well as changes of the depth EEG caused by destruction with high frequency current were also investigated.

Moreover, on the basis of the data obtained from the cases of parkinsonism to which the Oil-Wax infusion or the destruction with high frequency current aimed at the same target point was applied comparison was made between the former and the latter as a destruction method at stereotaxic surgery respectively.

The present comparative study revealed that in both cases of the Oil-Wax infusion and the destruction with high frequency current changes in the impedance fluctuation were remarkable, but those in the EEG were not so evident. Although changes in the impedance fluctuation due to Oil-Wax infusion were recognizable for a while after infusion, it gradually returned to the state before infusion. On histological examination it was found that this finding was advancing gradually. On the contrary, as regards to changes in the impedance fluctuation due to destruction with high frequency current the impedance fluctuation returned, in the peripheral part, to the state before destruction in the course of time gradually, whereas it did not appear even 3 weeks after destruction. From the histological point of view it proved that there existed an irreversible destruction in the central part.

So far as the above-mentioned cases of parkinsonism to which either the Oil-Wax infusion or the destruction with high frequency current respectively aimed at the same target point were concerned, it was ascertained that although in any