Complete text

VI LSD No. 345 (§ 102a) M 405 EEG
mescaline (§ 102b)
chlorpromazine (§ 97a)

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Depth electrographic studies of the activity in the human brain and the effect of some drugs (including mescalin, L.S.D. 25 and chlorpromazine).

EEG Clin.Neurophysiol. 8, 717 (1956).

This study was started at the Rochester State Hospital in 1952 in co-operation with the Mayo Clinic. The main workers have been Drs. M. C. Petersen, H. W. Dodge, J. A. Lazarte, C. B. Holman, and the author.

During the last five months I have continued the study at Gaustad Mental Hospital, Oslo, Norway.

The main technique is well known from several earlier publications. The size of the electrodes, however, has been steadily reduced. At present, we are trying out stainless steel, 20 microns in diameter. The paucity of demonstrable brain damage is pleasing and may be still less with the finer electrodes.

It takes usually three days after the operation before a baseline recording is obtained. Changes during the first days following the implantation of the electrodes may be due to anesthesia, other drugs and surgical trauma.

The various areas of the brain seem to have an easily recognizable activity. In the frontal lobe, a rhythmic 2-4 c/sec. activity is consistently found in the ventro-medial aspect and a 25 c/sec. fast beta activity is seen in the lateral aspect of the same lobe. Under the influence of ether, the frequency of the activity is increased. Under the influence of Pentothal, the frequency of the activity is decreased. However, this applies to the lateral fast activity, where there is an increase in the voltage of this activity so that it seems to overshadow all other activity in the earlier stages.

The rhythms in the olfactory bulb are demonstrated and under the influence of anesthesia the frequency of the activity changes in the same way as the lateral fast activity. Recognizable characteristic rhythms are seen in the motor area and underlying white matter. The fluctuation during sleep is seen in the lower part of the slide. The difference in response to touch and pain is recorded from the general sensory area.

From the auditory area and underlying white matter, the response to sound stimulation has been studied. It is possible to demonstrate the speed of the sound impulses. The effect of Pentothal on the response to trains of clicks are also illustrated. There is at first an increase of amplitude of the response, later there is a decrease in the duration of the response.

From the occipital lobe visual fast gamma activity and lambda waves as well as alpha activity are elicited, with a maximum voltage from their respective regions. The lambda waves seem most probably related to accommodation of the lens.

In the temporal lobe a quite different type of activity is seen and there is no clear-cut relation between this activity and somatic functions. On the other hand, in the psychotic patients there seems to be a relation between the activity in this region, the activity in the ventromedial aspect of the frontal lobe, regions of the parietal lobe and the hypothalamus. Reserpine does not seem to have any effect on this activity except when the dose is so large that there is a marked fall in blood pressure followed by altered level of consciousness.

Mescalin and L.S.D. 25 have been given to several patients. In one patient a double spike focus appeared, at the same time as the clinical effect of the drug. It was a focus firing with a peculiar type of double spike. The focus fired about three times per second continuously for hours. The changes in the record were undistinguishable, whether Mescalin or L.S.D. 25 were used. The EEG changes as well as clinical changes were quickly reversed by chlorpromazine i.v. The focus appearing in this patient was in the same general region as where spike foci have appeared in other patients at the time of acute hallucinated and agitated episodes.

(Tiefen-EEG-Untersuchungen über die Aktivität des menschlichen Gehirns und die Wirkung einiger Pharmaka (incl. Mescalin, LSD und Chlorpromazin)

Die im Rochester State Hospital, Rochester, Minn., durch SCHWARZ et al., LSD Nr. 187, Rapport 68 II/7, begonnenen Tiefen-EEG-Untersuchungen wurden im Gaustad Mental Hospital, Norwegen, fortgesetzt. Die Ergebnisse entsprechen den früher publizierten.

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(Investigations au moyen de l'EEG de profondeur sur l'activité de ce veau humain et sur l'effet de quelques substances (y compris mescaline, LSD et chlorpromazine))

Les investigations au moyen de l'EEG de profondeur commencées au Rochester State Hospital, Rochester, Minn., par SCHWARZ et coll., LSD No 187, Rapport 68 II/7, ont été poursuivies au Gaustad Mental Hospital, Norvège. Les résultats correspondent à ceux publiés antérieurement.

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