

SCIENTIFIC PROCEEDINGS.

ABSTRACTS OF COMMUNICATIONS.

Eightieth Meeting.

43 (1221)

College of Physicians and Surgeons. President Jacques Loeb in the chair.

Changes in the electrocardiogram due possibly to alterations in blood volume.

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There are reported in this communication certain changes in the electrocardiogram, which are supposed to have been influenced by changes of the blood volume in patients. The changes are in the latter part of the ventricular complex, the T wave, and appear in one patient in the most marked extent in the first lead and in another patient most markedly in the third lead.

The first patient suffered from chronic hypertensive nephritis, cardiac hypertrophy and arterial disease. Before bleeding, an electrocardiogram was made, using the second lead only. He was bled 500 c.c. Afterward, with the same resistance, the same tension of the string, the same strength of magnetic field, and with the same position of the patient, a second electrocardiogram was made and showed a much increased amplitude of the T wave in the second lead. Leads one and three were not taken. This patient was then given a test in which he drank 1,500 c.c. of water in fifteen minutes. His electrocardiogram was made before the beginning of the test and about every hour thereafter for ten hours; then at varying periods until about twenty-three hours had elapsed. Six hours and thirty-seven minutes after he had

finished drinking the water, the T wave which had been diphasic in the first lead, became positive and remained positive for twelve hours and eighteen minutes. During this time the patient had not ingested any food or fluid. Twenty hours and fifteen minutes after ingesting the water, he was given 300 c.c. of fluid. The form of the electrocardiogram made immediately after this showed its form to be the same as that of the control.

The second patient is one suffering from hypertrophy of the heart and arterial disease. He was given the same test as the preceding patient. The control electrocardiogram showed in the third lead a diphasic T wave, the positive part of it being of greater amplitude than the negative part. Five minutes after the patient had finished drinking the water (twenty minutes after the beginning of the test), the T wave had become wholly negative. The T wave remained negative for sixteen hours and thirty-five minutes, when it became diphasic. This change occurred without the patient having had additional fluid. On another occasion, this patient was given two hot packs and showed the same variation in the third lead. He lost 0.95 kg. He then drank 200 c.c. of milk. The electrocardiogram now resumed the form of the control.

This test has been made on a normal man, in whom no qualitative change occurred.

In the above tests the resistance of the patients varied from 800 to 1,300 ohms, except once when the resistance was 2,000 for each of three leads and on two other occasions when it lay between 1,600 and 1,700 in each of three leads.

Conclusion: Bleeding, hot packs, ingestion of water and fasting may in certain persons affect the form of the electrocardiogram.

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The influence of ergotoxin on the pupil of the rabbit.

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In the very careful studies of Dale on the pharmacodynamic action of ergotoxin, it is stated, without qualification, that this