When the anterior pituitary extract was injected in normal male and female rats which were fasted but to which 10% NaCl was administered instead of diacetic acid, the excretion of acetone bodies in the urine was promptly increased from an average of about 1 mg. per day to 30-65 mg. No sexual difference in response was noted. Boiled extract was inactive as was the filtrate after an alcoholic precipitation of the active extract. Negative results were likewise obtained when an active extract was fed by stomach tube instead of being injected subcutaneously.

It seems that the greater susceptibility of the female to ketosis may be associated with a larger production of the ketogenetic substance in the anterior lobe as the result of the stimulation of some substance produced in the ovary other than theelin.

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Evidence for Characteristic Modifications of the Electrocardiogram Produced by Lesions of Ventricular Muscle Bands.*

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Efforts to correlate the electrocardiogram with myocardial lesions as recently reviewed by Haney, Borman, and Meek[1] have not been altogether consistent. In this study individual ventricular muscle bands have been made anemic by ligating their blood supply. The specific muscles were so treated on 26 occasions in 7 dogs, under pento-barbital anesthesia, when the heart was exposed and beating in a snug cradle formed by stitching the pericardium to the edges of the wound. The electrocardiographic results are characteristic and entirely consistent for each of 4 muscles studied; the superficial sino-spiral, the superficial bulbo-spiral, the deep sino-spiral and the deep bulbo-spiral.

When vessel after vessel to a given muscle is ligated, the characteristic result is evident at once, and the magnitude of the effect increases as the lesion of the muscle progresses.

* This study was made while the author held a grant from the Committee on Scientific Research of the American Medical Association. A part of the experiment was carried out in the Physiological Laboratory of the School of Medicine of Rochester University.

[1] Haney, H. F., Borman, M. C., and Meek, W. J., *Am. J. Physiol.*, 1933, **106**, 64.

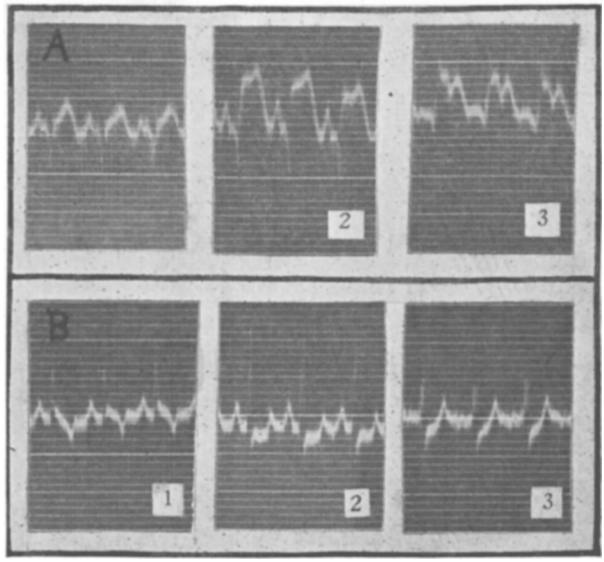

FIG. 1.
(a) Result of lesion in deep bulbo-spiral muscle. Note R-T elevation in all 3 leads. (b) Similar lesion in the deep sino-spiral. Note that in lead I R-T is elevated and T is negative, while in lead III T is positive and S-T is negative.

If 2 adjacent muscles in the same general area of the heart are made anemic, each has its own characteristic effect on the electrocardiogram. Thus, in the base of the left ventricle are 2 muscles, the deep bulbo-spiral and the deep sino-spiral. Defect of the bulbo-spiral will cause an elevation of the R-T segment in all 3 leads. On the other hand, defect of the sino-spiral will cause elevation of the R-T in lead I and depression of the S-T in II and III. Moreover, the same change may be obtained by a lesion in the other ventricle because this same muscle may be damaged either at its origin in the left ventricle or at its insertion in the right ventricle. If both ends of this muscle be injured, the amplitude of the alteration is greater.

The papillary muscles likewise have characteristic effects on the electrocardiogram. Lesion of the anterior papillary muscle of the left ventricle (a part of the superficial bulbo-spiral) produces a sharply negative T in all leads; with depression of S-T in I and an elevation in II and III.

When the posterior papillary muscle (a part of the superficial sino-spiral) is rendered anemic, the T is again negative but the S-T is elevated in all 3 leads.

If more than one muscle is eliminated, of course, the picture is different. For example, the right coronary artery supplies the deep

sino-spiral already mentioned and also the superficial sino-spiral and the scroll muscles. Its occlusion causes S-T depression in all 3 leads.

TABLE I.

Muscle	Characteristic Electrocardiogram	
S.B.S.	T very neg. in I, II, III	R-T elevated in I S-T depressed in II, III
D.B.S.	T positive in I, II, III (Fig. Ia)	R-T very elev. in I, II, III
S.S.S.	T slightly neg. in I, II, III	R-T elevated in I, II, III
D.S.S.	T_1 neg. T_3 pos. (Fig. Ib)	R-T elevated in I S-T very depressed in II, III

Table I summarizes the immediate effects of functional elimination of individual muscles.

One may conclude that lesions of the individual muscle bands do cause characteristic electrocardiographic changes.