the data indicate that the kidney is somewhat involved in the syndrome, which results in death following bilateral epinephrectomy. Experiments[1] on the acid-base equilibrium of epinephrectomized cats revealed the fact that one of the train of events leading to death from adrenal insufficiency is an uncompensated, non-volatile acidosis, which appears to be due to an increase of phosphoric and organic acids.

The complete data indicate that one of the causes of death following removal or destruction of the suprarenal cortex is acid intoxication due to accumulation and retention of the acid end products of normal metabolism. In the absence of the cortex the kidneys apparently fail to properly perform their acid eliminating function in relation to the neutrality regulation of the body. For some time, in some of our cases for 5 or 6 days, the respiratory mechanism is adequate to take care of the slowly advancing acid intoxication by throwing off volatile acid and the pH remains within the normal range. Finally there comes a time when the respiratory mechanism proves unequal to the task, and the acidosis becomes uncompensated, with falling pH and marked symptoms. The respiratory mechanism breaks down and death ensues from respiratory failure.

The type of acidosis, which develops following adrenal removal, is of a similar nature to the acidosis characteristic of the terminal stage of certain types of nephritis. It is suggested that the adrenal gland (cortex probably) supplies a hormone which is necessary for the maintenance of normal kidney function.

Complete papers presenting in detail the data summarized in this report will appear shortly in the American Journal of Physiology.

[1] Swingle, W. W., and Eisenmann, A. J., PROC. SOC. EXP. BIOL. AND MED., 1926, xxiv, 212.

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The Prevention of Tetany by the Oral Administration of Ammonium Chloride.

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Previous experiments[1, 2] carried out on parathyroidectomized dogs have demonstrated the effectiveness of the lactates of strontium and magnesium in relieving tetany and in bringing about a cure.

Experiments carried out last spring show that ammonium chloride also is an effective agent.

Parathyroidectomized dogs given a 5 per cent solution of ammonium chloride in 100 cc. doses twice daily, 3 to 4 hours before, and 5 to 8 hours after feeding, will retain the solution and may be kept free from tetany for long periods. One dog, reported here, never showed any symptoms of tetany save for a slight depression 4 days after operation. Once tetany appears, and the serum calcium falls below 7 mgm. per 100 cc., the ammonium chloride brings about a recovery within 2 hours, usually 1 hour and 15 minutes after administration. Examinations of the serum calcium at this time shows that the calcium has risen, on the average 2½ mgm. or to 8.5 mgm. per 100 cc., which is above the level at which tetany appears in dogs.

The experiments indicate clearly that ammonium chloride exerts a marked influence on tetany, probably more through its acidotic effect on the organism, than through an immediate effect on the serum calcium, although the rise in serum calcium may be sufficient to cause the disappearance of tetany symptoms.

Six dogs were parathyroidectomized. Dogs 4 and 6 were allowed to develop tetany; they recovered in 1 1/4 hours after receiving 100 cc. of 5 per cent solution NH_4Cl. The calcium of dog 6 rose from 6.6 mgm. to 10.1 mgm. per 100 cc. This was the greatest rise obtained for the 1 1/4-hour period. Dog 4 remained free from tetany for 4 days after the beginning of the ammonium chloride treatment, but died in tetany on the 6th day. Dog 6 recovered permanently. Animals 1, 2, 3 and 5 received ammonium chloride immediately after operation and twice daily thereafter. They showed marked tetany at different periods, followed by recovery after heavy doses of NH_4Cl. Dog 1 was depressed the 4th day after operation, but showed no other symptoms. Dogs 1, 2 and 5 recovered permanently. Dog 3 died of tetany and pneumonia on the 45th day.

After 30 to 40 days of ammonium chloride therapy the animals were placed on a meat diet and the ammonium chloride discontinued without ill-effects except in the case of animal 3.

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[1] Swingle, W. W., and Wenner, W. F., *Am. J. Physiol.*, lxxv, No. 2, 378-392.

[2] Wenner, W. F., PROC. SOC. EXP. BIOL. AND MED., 1926, xxiii, 432-434.