

questioned by Nagel,³ who failed to obtain any inhibition of the gut but solely a pressor effect.

Like Nagel, we have not (in over 100 experiments) obtained any evidence of a depressant action of ephedrin on the isolated rabbit gut although we have meticulously followed the methods and employed the dosage of Chen and Kreitmair. Other publications^{4, 5} have called in question the view that ephedrin produces certain of its effects by sympathicometic action. The question is not of merely theoretical interest for if ephedrin does not stimulate the sympathetic nerve endings in the gut, it is highly unlikely that it stimulates similar inhibitory nerve endings in the bronchi. As such assumed pharmacological action is the basis of the use of ephedrin as a substitute for adrenalin in the treatment of asthma, a repetition of Chen and Kreitmair's investigations appeared desirable. In a limited number of experiments conducted in this laboratory, a broncho-dilating effect of ephedrin has been observed only exceptionally. Perhaps the divergent reports of the efficacy of ephedrin in bronchial asthma may have their explanation in the fact that ephedrin relaxes bronchial spasm only under certain conditions.

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Post Operative Blood Chemical Studies.

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In a series of 50 experiments on dogs operated under ether anesthesia, various blood chemical observations were made at short intervals. The findings were as follows: 1. There is a fall in the CO₂ (van Slyke) generally not more than 10 points. 2. The blood sugar rises slightly at first followed by a moderate fall—15-20 mg. 3. There is a rise in the concentration of the blood as measured by the refractometric index. This is slight and inconstant. 4. Leucocyte, temperature, pulse and blood pressure observations show moderate changes, but in none of our cases were these marked enough to be significant *per se*.

³ Nagel, A., *Ibid.*, 1925, ex, 129.

⁴ De Eds, F., and Butt, E. M., *PROC. SOC. EXP. BIOL. AND MED.*, 1927, xxiv, 800.

⁵ Gradinesco, A., *C. R. d. Soc. Biol.*, 1927, xevi, 1027.

These observations were made at intervals of 15-30 minutes for 24 hours after the operation and as can be seen they totally fail to explain the profound state of collapse in which any postoperative case lies for about 24 hours.

The positive findings in our series are as follows: 1. A marked tissue thirst is indicated by the findings in the Aldrich intradermal salt test. During the period of postoperative lethargy the wheal is absorbed in approximately half the time that it took in the controls. This tissue dehydration is in striking contrast to the comparatively slight changes in the water content of the blood. 2. The most striking feature found was the enormous changes in the calcium and potassium in the blood. The Ca-K ratio was enormously lowered in every case, in some actually falling below 1. Return to normal had usually taken place by 24 to 36 hours. 3. Parallel with these mineral salt changes there occurs a decisive change in the permeability of the skin as measured by the Blister method. The blistering time is enormously prolonged, in severe cases to twice that noted just before operation.

Summary: Enormous changes in the Ca-K ratio in the blood are found after surgical operations under ether anesthesia. This is accompanied by an increased permeability of the tissues as well as a tissue dehydration.

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Uretero-ureteral Anastomosis.

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The accidental division or crushing of ureters during difficult gynecological operations has occurred occasionally, even with the most experienced surgeons. Suture of the divided ureter when the level of division has been too high to allow implantation in the bladder has resulted in a low percentage of permanently functioning ureters. This failure has resulted most often from progressive cicatricial stenosis due to leakage of urine. In this study the method used by McArthur¹ for the plastic repair of a traumatically ruptured ureter is applied to end to end suture of the ureter in dogs and in

¹ McArthur, *Surg. Gynecol. Obst.*, 1925, xli, 719.