

DEATH PRODUCED BY TYING THE ADRENAL VEINS

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Since the discovery that Addison's Disease is due to disturbance of the adrenal apparatus, many attempts have been made to produce the disease artificially. Adrenal insufficiency is said to be the main cause, and hence epinephrectomy was thought to be the best method of producing the peculiar syndrome of the disease. This method is, however, too drastic, the animal succumbing more or less rapidly to the operation. Some method of reducing the adrenal function without completely destroying it, appeared to be required.

Certain infectious diseases impair the function of the adrenals. Diphtheria (1) produces vascuolization and hemorrhage in the adrenals, and diphtheria toxin (2) is said to lessen the pupal dilating substance in the adrenal venous blood. In view of this we attempted to destroy a portion of each gland by the injection of sublethal doses of diphtheria toxin into the exposed gland. Evidently the toxin was either neutralized, or else washed away by the blood stream before it could cause much destruction of the adrenal tissue, because no symptoms could be noticed, following such injection. Although we experimented with only one cat and one guinea pig, the method was considered unsatisfactory.

The blood flow through the adrenals is relatively very large; therefore by hindering the blood supply we should be able to produce degenerative changes rather easily. If the blood flow could be almost stopped, the changes in the gland might be slow enough to produce merely a condition of hyposecretion, such as we desired. The arteries break up into such fine branches before entering the capsule, that checking the inflow would be too difficult. On the other hand, the outflow is mainly through a large vein emptying into either the vena cava, or else the renal vein, so that by ligation the flow could easily be stopped. However, a small amount of blood escapes