

gain was 50% in 6 months. In other dogs with definite diabetes insipidus resulting from supra optic damage and with a comparable loss of cells in the caudal portions of the paraventricular nuclei the average weight gain has been 75 to 110%.

The conclusions drawn from an analysis of the entire material from which the above examples have been selected are: (1) Obesity in the dog results from partial destruction or retrograde degeneration of the paraventricular hypothalamic nuclei, particularly of their caudal portions. (2) Marked obesity results when destruction or denervation of the neurohypophysis and partial destruction of retrograde degeneration of the caudal paraventricular nuclei coexist. (3) Removal of the pars distalis in itself does not result in significant obesity (0 to 20%). The presence of the pars distalis in animals with partial destruction or degeneration of the supra optic and paraventricular nuclei is favorable to the development of marked adiposity. (4) The results suggest that a lack or marked lessening of the secretion of the neurohypophysis may aid in fat storage in the presence of a diminution in the number of cells of the caudal portion of the paraventricular nuclei.

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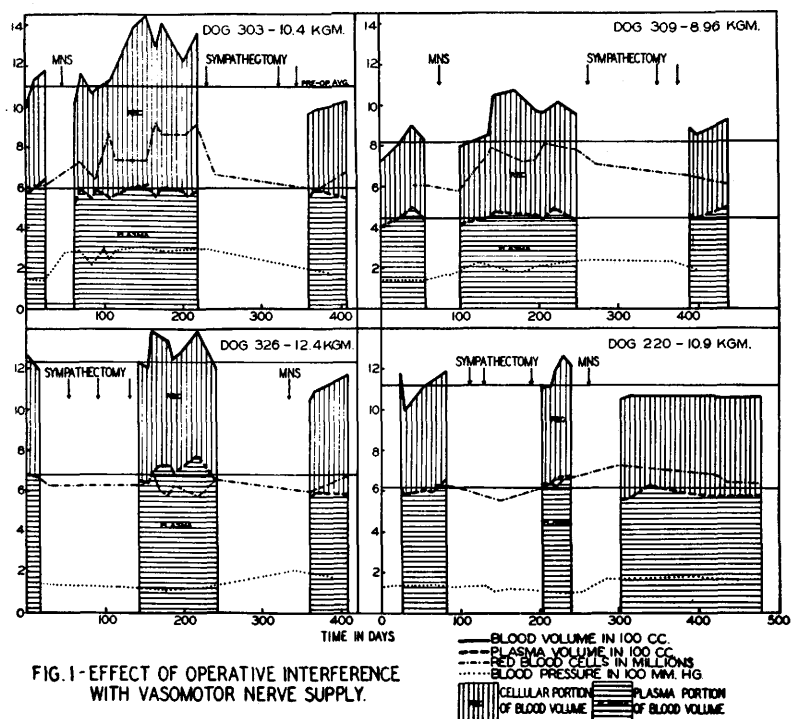
Body Fluid Changes in Neurogenic Hypertension and Total Paravertebral Sympathectomy.

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This is a report of changes which have been observed in the blood volume, plasma volume, hematocrit and red blood cell count under various conditions of vascular tension resulting from operative interference with vasomotor nerve supply. These studies have been made on normal dogs, dogs made hypertensive by resection of both carotid sinuses, both aortic depressor nerve pathways, and one or the other vagus, and dogs made hypotensive by total paravertebral sympathectomy. Two hypertensive dogs have been subjected to total paravertebral sympathectomy and 2 sympathectomized dogs to the procedure used for production of hypertension and the subsequent changes noted.

Plasma volume was measured by the use of disappearance curves of the blue dye, T-1824. Blood volume was estimated from the plasma



volume and hematocrit. Blood loss encountered during each experiment was corrected by transfusion of an equal volume of blood from donor dogs.

As indicated in the accompanying graph, the following observations have been made:

First, that dogs subjected to modulator nerve section (MNS) develop marked hypertension and a markedly increased total blood volume apparently due entirely to an increase in the cellular fraction of the blood.

Second, that these hypertensive, polycythemic dogs regain approximately a normal total blood volume and their hypertension is markedly reduced after total paravertebral sympathectomy. This decrease in total blood volume after sympathectomy is apparently due to a decrease in cells alone, the plasma volume remaining unchanged.

Third, that dogs subjected to total paravertebral sympathectomy develop a slight hypotension and a slightly increased total blood volume due in the main to an increase in the plasma fraction of the blood.

Fourth, that these sympathectomized dogs, when subjected to

modulator nerve section develop a moderate hypertension not associated with any significant change in the total blood volume, either in its cellular or plasma fraction.

This work suggests a relationship between overactivity of the sympathetic nervous system and polycythemia. In those dogs with intact sympathetic efferent pathways, modulator nerve section was followed by a marked polycythemia and increased blood volume which disappeared after interruption of these sympathetic efferent pathways. Also in animals in which sympathetic efferent pathways had previously been interrupted, modulator nerve section caused no significant change in blood volume in either its cellular or plasma fraction.

At present the above described studies are being made on other dogs and, in addition, changes in their total body water and fluid available for the solution of sodium thiocyanate are being observed.

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Intravenous Nourishment with Protein Carbohydrate and Fat in Man.*

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Intravenous injection of dextrose for both nutriment and hydration is now a common routine clinical procedure and the intravenous injection of casein digest to provide amino acids has also become feasible in man.¹ Intravenous injection of homogenized fat has been carried out, especially in infants, but is not commonly done at the present time.^{2, 3}

In a patient having received an extensive resection of the larynx, upper trachea and most of the cervical esophagus for extensive carcinoma of the larynx, nutrition had been maintained by means of a Levine tube inserted into a sinus formed by the upper end of the esophagus in the base of the neck. With his coöperation this tube was withdrawn and for a period of 17 days all nutriment was given

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¹ Elman, E., and Weiner, D. O., *J. A. M. A.*, 1940, **112**, 796.

² Holt, L. E., *J. Ped.*, 1935, **6**, 151.

³ Gordon, H., and Levin, S. Z., *Am. J. Dis. Child.*, 1935, **50**, 894.