

105 (515)

Studies on experimental arterial lesions in the dog.By **ISAAC LEVIN** and **JOHN H. LARKIN.**

[From the Department of Pathology, College of Physicians and Surgeons, Columbia University.]

While it is easy to produce experimentally an arterial lesion in the rabbit, it is extremely difficult to repeat the same in the dog. All attempts to produce arterial lesions in normal dogs, by injection of adrenalin or other similar substances, failed. Carrel and Guthrie, Stich and others stated that the walls of a segment of a vein implanted in an artery undergo certain changes which consist in a hyperplasia of the connective tissue of interstitia, and in an increase of the number of the muscular and elastic fibers of the media. But it is hardly possible to draw a correct conclusion from this method of experimentation, since such a segment is completely severed from its vascular and nerve connections.

Since the majority of writers on arteriosclerosis maintain that the mechanical increase of blood pressure is the most important factor in the causation of the disease, we endeavored in our experiments to increase the blood pressure within the lumen of a vein by the following method:

An anastomosis was performed between the central end of a carotid and the peripheral end of the external jugular vein, thus not only reserving the venous circulation within the blood vessel, but also adding to it the pressure of the arterial blood flowing from the artery.

A certain number of dogs received also from three to five intravenous injections of adrenalin, in order to investigate whether the drug would have any effect on a vein which was already placed under unfavorable conditions of pressure. As a result of the operation there took place in a certain number of cases a dilatation of the external jugular and its branches, with a slight thickening of the vessel wall. In other dogs there took place dilatation of the vein for a distance of about half an inch, where the walls of the blood vessel seemed to arrest the dilatation. Microscopically there was neither degeneration nor hyperplasia of the intima or

media, with the exception of the place near the suture line. Here there was noticeable a hyperplasia of the intima, which was apparently due to the irritation caused by the silk suture acting as a foreign body.

The most important abnormality found in nearly every vessel examined was a new fibrous tissue formation in the adventitia, and this adventitial connective tissue formation was apparently the only cause for the thickening of the wall of the vein on gross inspection.

On the other hand, it is interesting to note that an obliterative endarteritis was found in two experiments where infection took place after the operation.

The conclusion must be drawn, as a result of the investigation, that an arterial lesion cannot be induced artificially on a previously healthy blood vessel of a dog by mechanical change within the vessel.

106 (516)

The relation of the thalamus to respiration, blood pressure and blood supply of the spleen.

By **E. SACHS.** (By invitation.)

[From the Laboratory of Physiological Chemistry of Cornell University, New York.]

In the past year I have been carrying on, in Dr. Wolf's laboratory at Cornell, some experiments on the optic thalamus in cats with Clarke's stereotaxic instrument. In some work on the anatomy and physiology of this region, published in *Brain* about a year ago, I showed that the thalamus could be anatomically divided into a median and lateral portion. The lateral was connected with the pre- and post-central gyri, or what corresponds to this area in the carnivora, while the median portion composed of the anterior and median nuclei was intimately connected with the nucleus caudatus and rhinencephalon.

In my present work the relation of the thalamus to blood pressure, respiration and changes in spleen volume was studied. Bechterev and his pupils, Christiani and Ott, have found variations in these functions, and the former has claimed that special centers exist in the thalamus for these functions.