45 (977)

The influence of the anterior lobe of the pituitary body upon the growth of carcinomata. (Preliminary Communication.)

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We have found that the administration of aqueous emulsions of the anterior lobe of the ox-pituitary, in doses of 0.5 grammes of fresh glandular tissue at intervals of two or three days, either directly into the tumor or hypodermically elsewhere, leads to a very marked increase in the rate of growth of the primary tumor in rats inoculated with the Flexner-Jobling carcinoma. The growth of small tumors is accelerated relatively more than that of large tumors.

This acceleration is only evidenced, however, at a certain stage in the growth of the tumor, subsequent to the twentieth day succeeding inoculations. The administrations do not enhance the tendency of the tumors to metastasize.

Liver-emulsion, similarly prepared and administered, does not cause any acceleration of the growth of carcinomata in rats.

46 (978)

Cholesterol atheroma in rabbits.

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The experiments of Ignatowski and Chalatow in which they produced atheroma of the aorta by feeding rabbits on egg yolk or pure cholesterol have been repeated. Each of a series of rabbits was given the yolk of one egg daily mixed with its ordinary food. Other rabbits received daily from 0.2 to 0.5 gm. of pure cholesterol dissolved in cotton seed oil, mixed with their regular food. Three rabbits have thus far come to autopsy: one which had been on an

egg diet for 30 days, one on an egg diet for 77 days, and one on a cholesterol diet for 37 days. All three rabbits show pronounced lesions, the most notable of which are as follows:

In the gross the aorta shows raised irregular yellowish white placques, varying in size from a fraction of a millimeter to several millimeters in diameter. In several cases these are thickly placed and may be scattered over the entire length of the aorta. The pulmonary artery shows similar lesions which in one case are as pronounced as those in the aorta. The liver is of a deep yellow color; the adrenals of a uniform almost white color. The kidneys on section show a deep yellow medulla rather sharply outlined from the brownish red cortex. Very fine yellow lines can be seen in the cortex radiating outward from the medulla.

Microscopically the aorta shows a nodular thickening of the intima made up of large round cells loaded with fat. The inner portion of the media, underlying the intimal lesions, is also involved. Here the fat present is also, for the greater part, intracellular.

The liver shows a marked deposit of fat contained first in the Kupffer cells, later in the parenchymal cells in the centres of the lobules. There is here a focal degeneration of the liver cells. There is apparently a slight increase of periportal connective tissue and fat is present within endothelial cells and fibroblasts in these areas.

The interlobular vessels of the kidney show fat throughout their walls. In the early cases many of the endothelial cells of the capillary network of the medulla are loaded with fat. Fat is also present in smaller amount in some of the endothelial cells of the glomeruli. In a more pronounced case the tubular epithelium shows a large amount of fat.

In the spleen the fat is present mainly in the endothelial cells lining the venous capillaries and in large cells free in the capillaries. The arteries show changes similar to those in the kidneys.

The larger arteries of the lungs show pronounced nodular intimal thickenings similar to those in the aorta. In one case the lining cells of the alveoli contain fat.

In the heart there is a considerable amount of fat in the muscle cells. The fibroblasts of the subpericardial connective tissue and

of the connective tissue trabeculae contain fat. The walls of the small arteries are infiltrated with fat.

The endothelial cells in the organs described appear to be primarily affected. Later the fat is present in fibroblasts in the interstitial tissue and in the parenchymal cells of various organs, as liver, kidney, heart, and lungs. The process in the vessels is not confined to the aorta but involves the pulmonary artery and its branches and the vessels quite generally throughout the organs described.

A small portion of the fat present in the liver is isotropic. The remainder of the fat here and the fat in other situations is anisotropic.

The process evidently reveals considerable difficulty on the part of the rabbit of utilizing the cholesterin fat and as a result the absorption of this fat by phagocytic endothelial cells in various organs and later storage of the same in connective tissue and parenchymatous cells in the organs concerned.