10205 P

Inactivation of Estrogenic Hormone of the Ovary by the Liver.

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Very small proportions of estrogens are recovered in the excreions from animals to which they have been administered. Evidence n support of the theory that the liver is responsible for the inactiration has been obtained by Zondek[1] and many others.[2, 3] Recently, srael, Meranze, and Johnston[4] found that alphaketohydroxy estrin vas rapidly inactivated when added to the perfusate of a heart-lungiver perfusion system, while no inactivation occurred in perfusion ystems consisting of heart and lung, without the liver. These findngs suggest that estrin, in the quantity liberated into the blood tream by the ovaries, is inactivated when it reaches the liver.

In order to test this theory, homotransplants of ovaries were nade to the mesenteries of a group of rats. The venous drainage was such that any secretion produced by the transplants must pass through the liver before reaching the organs (uterus, vagina, pituitary) upon which the effect of the hormone could be determined. Homotransplants of the ovaries to the axillary region in another group of rats served as controls.

Microscopic sections revealed that the transplants grew well at both sites. Those rats whose ovaries had been transplanted to the axilla resumed their cycles in from 8 to 20 days after the operation. On the other hand, animals whose ovaries had been transplanted to the mesentery showed no evidence in the vaginal smear of coming into heat after 40 days. The pituitaries of 4 of the latter group of animals, assayed by the Lauson, Heller, Sevringhaus technic,[5] were of the potency order of the pituitaries of castrates, in spite of the fact that microscopic sections of the transplants revealed functional ovarian tissue with large follicles and corpora lutea. In 12 of the animals mesenteric transplants of the ovaries were retransplanted to the axillary region. Ten of these animals survived the operation,

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1 Zondek, B., *Skand. Arch. f. Phys.*, 1934, **70**, 133.

2 Silberstein, F., Molnar, K., and Engel, P., *Klin. Wchnschr.*, 1933, **12**, 1694.

3 Rondoni, P., Carminati, V., and Corbellini, A., *Z. fur Physiol. Chem.*, 1934, **241**, 71.

4 Israel, S. L., Meranze, D. R., and Johnston, C. G., *Am. J. Med. Sc.*, 1937, **194**, 835.

5 Lauson, H. D., Heller, C. G., and Sevringhaus, E. L., *Am. J. Phys.*, 1938, **121**, 364.

and in all but one estrus reappeared in from 8 to 20 days after retransplantation.

It is evident that the failure to maintain cycles is not due to inhibition of ovarian ability to ripen follicles and form corpora lutea, but to an inhibitory effect on ovarian products depending on the circulatory path from ovary to pituitary or uterus.

These findings serve to explain the marked difference in effectiveness of a given dose of estrogen given orally when compared with parenteral injection. Other applications to clinical problems are not difficult to find.

Further work on the rôle of the liver in estrogen inactivation is being carried on.

10206 P

Eclampsia-like Syndrome Occurring in Pregnant Dogs and Rabbits Following Renal Artery Constriction.

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Liver lesions in the experimental animal resembling those seen in eclampsia have been reported by several investigators, and associated renal injury has been noted following the injection of Vasopressin.[1]

Greene[2] has reported spontaneous eclampsia occurring in the rabbit, demonstrating liver lesions in a large number of animals. The spontaneous disease in sheep and guinea pigs has also been reported. In no instance, to our knowledge, has anything comparable to the spontaneous eclamptic complex with its anatomical lesions been produced experimentally.

We wish to record our observations on the rapidly fatal course and pathological findings in pregnant dogs and pregnant rabbits following constriction of the renal arteries. The suggestive significance of pregnancy as a factor in the fatal effect of renal arterial constriction is emphasized by the remarkable rapid recovery of animals if they are delivered.

Eight pregnant mongrel dogs from the stock colony were used for the experimental procedure. All animals were in good condition at

1 Byrom, F. B., *J. Path. and Bact.*, 1937, **45**, 1.

2 Greene, H. S. N., *J. Exp. Med.*, 1937, **65**, 809.