9212

Intra-ocular Heterotransplantation of Gonads and Sex Accessories from the Albino Mouse to the Albino Rat.

CLARENCE D. TURNER. (Introduced by C. W. Turner.)

From the Department of Zoology, the University of Georgia.

Earlier observations by the author[1] indicated that the anterior chamber of the eye was an exceptionally favorable site for the incorporation and persistence of testicular homografts. Grafts of this type proliferated mature germ cells and produced detectable amounts of male hormone for periods as long as 15 months. Browman[2] found that the testes of albino mice transplanted subcutaneously, intramuscularly and intraperitoneally into albino rats sometimes persisted for several months but were not demonstrably functional. Since homotransplanted tissues have been reported to persist in the aqueous humor of the anterior chamber of the eye and to retain their histological differentiations for relatively long periods without vascularization from the iris,[3] it became of interest to determine to what extent heterotransplanted organs would persist and function following insertion into the anterior chamber.

Fifty-six testes and 22 ovaries from prepubertal mice ranging from one to 20 days of age were transplanted bilaterally to the eyes of castrated male and female rats varying from 22 to 264 days of age. The heterotransplants were observed through the corneas, and attempts were made to recover the transplants at intervals from one day to 5 months. Within the first day after insertion of the gonadal transplants violent leucocytic reactions were observed in the eyes. The anterior chambers became hemorrhagic and inflamed and by the third day considerable exudation occurred through the unhealed incisions in the corneas. These incisions usually did not heal thoroughly until about 20 days, or until the heterotransplant had been eliminated. The anterior chambers invariably remained cloudy for 15 to 30 days and during this period the presence of donor tissues could not be detected except by sectioning. Only 4 testicular (7.14%) and 6 ovarian (27.27%) transplants were recovered subsequent to persistence for 20 days. The recovered transplants were found to be fibrotic or calcified nodules and contained no recognizable traces of the donor tissues. Since Browman

1 Turner, C. D., *Anat. Rec.*, 1936, **67**, 112.

2 Browman, L. G., 1935, Thesis, University of Chicago.

3 Haterius. H. O., Schweizer, M., and Charipper, H. A., *Endocrinology*, 1935, **19**, 673.

recovered 57% of his testicular heterografts subsequent to persistence for 6 to 45 days in subcutaneous, intramuscular and intraperitoneal positions, it appears that the transplants were more rapidly eliminated from the anterior chambers than from other sites. In no case did the heterotransplanted gonads in the anterior chambers maintain secretory processes in the male accessory glands or prevent the loss of oestrus cycles in the female hosts. Castration changes in the pars distalis of the hypophysis were not retarded by testicular heterotransplants.

Sixteen vesicular glands and 12 ventral prostatic lobes from 30-day-old mice were transplanted to the eyes of normal adult male rats. After persistence for 20 days, only fibrotic nodules were recovered. Previous to the twentieth day, areas of normal-staining donor tissue occasionally could be identified, but there was no histological evidence of the ingrowth of blood vessels from the host. In no instance did these heterotransplanted accessory glands display evidence of secretion. The epithelium of the transplanted vesicular glands was low and void of secretory granules. Histological and cytological preparations indicated the loss of secretory function in the epithelial cells of the prostatic transplants.

Summary. These observations indicate that heteroplastic transplants of gonads and accessory genital glands from albino mice do not become functionally incorporated in the anterior chamber of the eyes of albino rats. It is believed that the serological and phagocytic reactions of the host produce more rapid deterioration of the heterotransplant in the anterior chamber than occurs in other transplantation sites previously studied.

9213 P

Effect of Pneumococcus Type III Specific Polysaccharide on Sedimentation of Blood Cells.

W. J. NUNGESTER AND LOUISE FORDHAM KLEIN.

From the Hygienic Laboratory, University of Michigan.

During the course of experiments with the specific polysaccharide prepared from a type III strain of pneumococcus by the method of Avery, Kendall, and Scherp,[1] it was noted that this material greatly increased the sedimentation rate of citrated human blood.

[1] Heidelberger, M., Kendall, F. E., and Scherp, H. W., *J. Exp. Med.*, 1936, **64**, 559.