Minnesota Section.

University of Minnesota, March 18, 1931.

5496

Proportions of the Various Constituents of the Normal Adult Human Female Hypophysis.*

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This note on the weight of the normal adult human female hypophysis is based on serial sections of 43 non-pregnant women, 18 to 40 years old; 20 pregnant individuals, 15 to 40 years of age, and 27 older women, 50 to 81 years. The data were obtained from the absolute weight of the whole organ (after removal of the stalk close to the main body of the gland and therefore not including the stalk and *pars tuberalis*), and the relative weight of its parts obtained by projecting every 20th section on paper and then cutting out and weighing the areas.

The mean weight of the whole gland (less capsule, stalk and *pars tuberalis*) of young adult non-pregnant women is 620 mgm., with a minimum weight of 483 mgm. and a maximum weight of 971 mgm. This is 13% higher than the weight of the male hypophysis of similar age. Undoubtedly this is due to some of the females having been pregnant one or more times, since the literature indicates that the hypophysis of nullipara is essentially the same in weight as that of the male. Our figures are not directly comparable to those in the literature on account of having eliminated from our specimens all the surrounding connective tissue, which is an extremely variable quantity, having nothing to do with the essential constituents of the organ.

The hypophysis of pregnant individuals varies from 528 mgm. to 1111 mgm., the mean being 731 mgm., which is 18% greater than that of the non-pregnant group of the same age, and 17%

* Aided by a grant from the Research Fund of the Graduate School, University of Minnesota, and from the Grant-in-Aid Fund of the National Research Council.

greater than the hypophysis of old women. This enlargement is distinctly less than one would expect from the literature, probably due to a preponderance of early stages of pregnancy in our material. Although all stages of pregnancy are represented, we do not have enough data to determine the correlation of the weight of the hypophysis with the duration of pregnancy; but judging from less accurate weights on record, there is a progressive increase towards the time of parturition.

The hypophysis of females from 50 to 81 years of age varies from 478 mgm. to 803 mgm., the mean being 625 mgm., which is 15% less than in the pregnant group, and 25% more than in old men. Evidently the hypertrophy of pregnancy tends to persist into old age.

The larger size of the female hypophysis as compared with the male, and of the pregnant as compared with the non-pregnant female, is due to a larger anterior lobe. The posterior lobe is slightly smaller in females than in males of the same age and especially so in the case of pregnant females. This results in a distinctly higher relative weight of the anterior lobe in the female hypophysis. This is most marked in the pregnant female where the anterior lobe averages 85% (as compared with about 75% in the male) of the entire gland, leaving 14% for the posterior lobe, and less than 1% for *pars intermedia* (including the colloid in the residual lumen).

The posterior lobe of the female shows a slight absolute increase in old age just as occurs in males.

The mean value of *pars intermedia,* which in the male is in the neighborhood of 2% of the entire gland, is distinctly smaller in pregnant and old women than in the male and young adult non-pregnant females. This is particularly true of the amount of colloid. The parenchyma of *pars intermedia* increases distinctly in old women, but not to the extent that occurs in old men. There is no ponderal or obvious histological evidence in support of the supposed increased activity on the part of *pars intermedia* during pregnancy.