GLIOMAS OF THE NEUROHYPOPHYSIS
AND HYPOPHYSIAL STALK

A PRELIMINARY REPORT

NILS ANTONI, M.D.
Neurologic Clinic, Serafimerlasaretet, Stockholm, Sweden

(Received for publication March 6, 1930)

The correlation between acromegaly and eosinophilic hypophysial adenomas was already old news (Benda 1901) when Cushing discovered the correlation between the equally peculiar syndrome named after him and the basophilic cells of the hypophysis. Vigilant and unbiased observation has shown that the correlation between the first two is not entirely absolute, and even less absolute between the second two. Nevertheless both syndromes are still regarded as the manifestations of specific endocrine hyperfunction. It has been known since the report of Babinski in 1890 that adiposogenital dystrophy may be the result of a hypophysial tumor. This combination more often referred to as Fröhlich’s syndrome, is generally considered to be the result of diminished activity of the hypophysis, i.e., hypopituitarism. It has been a widespread opinion that one of the main causes of hypopituitary syndromes are chromophobic hypophysial adenomas, i.e., tumors formed of the chromophobic or chief cells of the pituitary gland proper. This doctrine was first advanced by Norman Dott and Percival Bailey, in a lecture in 1924. These authors made a broad attack on the whole question of hypophysial adenomas, analyzing all the previous research and the extensive data from 162 cases of tumor, 107 chromophobic, from the Cushing clinic. During the quarter of a century since their report, the theory of the chromophobic adenomas and their particular topographic, histologic and clinical characteristics has been blindly accepted and few attempts have been made to check its veracity. The few control studies (Kraus,8 Roussy and Oberling16) have been mainly confirmatory in nature. The general conception laid out by Dott and Bailey was so amazingly simple and schematic that it is not surprising that it won such immediate and general recognition.

Their theory was roughly as follows. There are three kinds of hypophysial tumors, all deriving from the pars anterior, the pituitary gland proper. One kind, which is rare, comes from the smallest cellular component of the adenohypophysis, the basophilic cells; these basophilic growths are always small, seldom grow beyond the sella and therefore cause no symptoms due to pressure on adjoining structures. Much more common are the eosinophilic growths, originating from the eosinophilic cells occurring in large numbers in the normal adenohypophysis. These not seldom grow up out of the sella, become suprasellar in other words, and exert pressure on neighbouring structures, particularly the optic chiasm. The most common of all, accounting for 80 to 90 per cent of the hypophysial tumors, are the
chromophobic adenomas coming from the largest cellular component of the anterior lobe, the chromophobic or chief cells. It is these tumors that most often break through the sellar diaphragm and spread out in the suprasellar space, resulting in pressure on the chiasm, optic nerves and tractus opticus and infundibulum, tuber cinereum and other structures.

This theory does not explain the numerous and practically important topographic and clinical peculiarities of the tumors which the Cushing school call chromophobic adenomas. Nor does it leave any room for tumors arising in the neurohypophysis. "Primary tumors of the posterior lobe are practically unknown," said McLean.\textsuperscript{11}

I have now made a study of the tumorous tissue in 10 cases diagnosed as chromophobic hypophysial adenoma at the Neurologic Clinic in Stockholm. In 2 cases the study was made post mortem with the tumor and brain \textit{in situ} (Figs. 1 and 2) and in the other 8 the tissue removed at operation was examined. This study has shown that the opinion that chromophobic hypophysial adenomas constitute the bulk of the suprasellar tumors connected with the hypophysis needs revision, to say the least. Not less than 8 of the 10 tumors were undisputably or almost certainly \textit{gliomas of the ependymal type} (Figs. 1-8, 12), corresponding most closely to the ependymomas of the Cushing-Bailey classification.

These tumors were highly cellular. The cells were well individualized as a rule, mostly elongated and arranged in sinuous garland-shaped strands in some places and in other places in rounded groups or acini sometimes separated by thin, often vascular connective-tissue membranes. These ependy-