are present. The neighboring cells occasionally form an intercellular network. Huge Golgi apparatus, occupying half of the cell body in many cases, is most characteristic. These features suggest active functions of synthesis and secretion of these cells.

Besides, there are many long spaced collagen fibers with about 1000Å spaces and numerous PAS-positive, osmophilic glycogen granules in the intercellular space. Many plasma cells appear in the perivascular area in some cases, suggesting a certain reaction against the tumor.

67. Electron Microscopic Observations on Human and Experimental Tumors of Astrocytoma-Glioblastoma Series

Yoichi ISHIDA, Sadao KAWAI, Kazuo SATO, Hideo NIIBE
and Yasuhiko SUGUTA

Department of Pathology, School of Medicine, Gunma University

A total of 12 tumors of astrocytoma-glioblastoma series removed by surgery were examined with the electron microscope. In astrocytomas, neoplastic cell nuclei had regular outline with moderately dense nuclear masses. The cytoplasm was generally abundant in cells of gemistocytic type and contained mitochondria, membranous profiles of rough-surfaced variety, Golgi membrane and occasional dense rounded bodies. The ribonucleoprotein particles were relatively scant. In cells of fibrous type the cytoplasm was irregularly disposed into prominent processes. Delicate fibrils were observed dispersed in part of the cell body or densely packed in the cytoplasmic extensions. The constituent cells of malignant astrocytoma contained more numerous cytoplasmic organelles than those of benign astrocytic tumors. Electronmicrogram of glioblastomas presented diverse cellular details. Some cells appeared pale, while others were filled with punctate particles and cytoplasmic organelles. The nuclei were irregularly outlined with occasional indentations of the nuclear membrane. The mitochondria were irregular in shape and variable in size. The cytoplasm contained also elongated membranous profiles, prominent Golgi membrane. Vacuoles, dense rounded bodies and lipid inclusions. Delicate intracytoplasmic were demonstrated in only occasional cells.

Eighteen gliomas experimentally produced in various strains of mice and rats by implanting carcinogenic chemicals into the brain were examined also

with the electron microscope (glioblastoma 8, astrocytoma-like tumor 4, oligodendroglioma-like tumor 4, ependymoma-like tumor 1 and mixed cell tumor 1). The ultrastructural details of experimental glioblastoma resemble closely to those in man. Astrocytoma-like tumors were made up of cells like those of glioblastoma. The cellular details, however, were not so diverse. The cytoplasm contained small number of organelles. The cytoplasmic membrane was replicated and disposed into delicate extensions. Intracytoplasmic fibrils were not evidenced in majority of cells, and this is standing out in sharp contrast to abundant demonstrable fibrils in cells of astrocytoma and astroblastoma in man.

68. Cerebellar Gangliocytoma Dysplasticum

Fumiaki SATO, Hiroo CHIGASAKI and Keiji SANO

Department of Neurosurgery, University of Tokyo

Since this disease has been first described by Lhermitte and Duclos in 1920, about twenty cases were reported in literatures by various authors under various names, such as ganglioneuroma, gangliocytoma dysplasticum, diffuse hypertrophy of the cerebellar cortex etc. Some of them were of clinical and histological characteristics suitable for the same of a "tumor" of the nerve cell, but some of the others, for instance Spiegel's case, were thought to be malformation or hypertrophy rather than neoplasm.

Our case 1. was a intermediate case of typical neurocytoma and Spiegel's case and, more over, had some peculiar histological abnormalities which have not been described in the literatures.

Case 1. was a 39-year-old man and had three years history of increased intracranial pressure and right sided cerebellar signs. X-rays showed a infratentorial space-occupying mass, and operation was carried out under the diagnosis of a right cerebellar tumour. On operation, the right cerebellar hemisphere was enlarged and the tonsil has been herniated into the foramen magnum. The sulci of the right cerebellar hemisphere were irregular and there was a discoloured area near the tonsil. It was thought to be a infiltrating tumour in the right cerebellar hemisphere and it was removed.

On histological examination, the molecular layer was very thin and the Purkinje cells have been disappeared. The most outstanding change was the thickened granular layer in which the granular cells were scattered coarsely and there were a lot of tiny cysts. General view of the granular layer, therefore, was a irregular network of the granular cells and the fibers. The granular