into three groups.

1) Intranuclear inclusions composed of microfilaments, each of which measured approximately 5 to 10 nm in width and 1 to 2 μm in length, were occasionally found in 4 cancer cases out of 11 examined. They were demonstrated in 8 nuclear sections out of 1170 (0.68%).

2) Intranuclear inclusions composed of parallel array fibrils, each of which measured approximately 30 to 150 nm in width and 2 to 7 μm in length, were observed in 4 cancer cases out of 11. They were demonstrated in 20 nuclear sections out of 1170 (1.71%). Some of the fibrillar elements showed microtubular structure. A number of electron dense granules, measuring approximately 20 nm in diameter, were found scattering near these fibrils.

3) Intranuclear inclusions of the third type composed of fibrillar bundles, enclosed by a limiting membrane accompanying fewer granules, were found in only one cancer case. In this case, they were found in 10 nuclear sections out of 84 (11.9%).

These intranuclear inclusions were not found in 9 cases of control stratified squamous epithelium the of uterine cervices taken from cancer-free women, so far as examined with 948 nuclear sections.

156. Immunohistochemical Demonstration of Carcino-Embryonic Antigen (CEA) and Ultrastructural Characteristics of the Adenocarcinoma of the Uterine Cervix

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Light (27 cases) and electron microscopic observations (13 cases) were performed on the tumors of the patient with adenocarcinoma of the uterine cervix. For the demonstration of carcino-embryonic antigen (CEA) in tissue, the immunoperoxidase staining (PAP method) has been employed in this series of study. Thirteen cases out of 23 were submitted to electron microscopic study. Carcino-embryonic antigen was detected in 19 cases including a case of clear cell carcinoma out of 23 (82.6%) endocervical adenocarcinomas. In some specimens only apices of cells lining the glandular lumina were stained but in others whole cytoplasm was stained. Tumor antigen expression was independent of age, clinical stage and histological differentiation. Relationship between immunoreactive CEA positive samples and their ultrastructural characteristics was persued in 9 cases. As a result, in CEA positive cases the cytoplasm of the neoplastic gland cell contained in high incidence, typical membrane bound granules, suggestive of secretion granules of mucin. Although further study will be requested, this result suggested that CEA-substance produced in the cytoplasm of neoplastic glandular cell may have something to do with the cytoplasmic secretion granules found in electron microscopic examinations. Moreover, detailed ultrastructural characteristics of the adenocarcinoma of cervical cell type in each grade of differentiation, as well as signet ring type cells will be presented.

157. Studies on the Histogenesis of Experimentally Induced Yolk Sac Tumor in Rats and the Morphogenesis of the AFP-Production Process

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When the fetal membrane of a pregnant rat is treated with a carcinogenic agent, it is known to induce the yolk sac tumor and/or the teratoma. In studying the relationship between these two tumors along with ascertaining the developmental process of the yolk sac tumor, we pursued one of its outstanding characteristics, namely, the AFP-production process morphologically. We made observations on the induced yolk sac tumor and normal yolk sac at the electron microscopic level and paid attention to the AFP-production process in the tumor cells.

The majority of induced yolk sac tumors were of the pure type and no more than 22% were observed to contain teratogenous elements. In contrast to this, teratoma appeared in greater numbers than yolk sac tumors and we were unable to observe the structure of the yolk sac tumor in that. Accordingly, a secondary genesis of the yolk sac tumor from the teratoma has been observed to exist and it is thought, however, that the primary genesis is predominant. Both light and electron microscopic examinations of the induced yolk sac tumor showed that it resembled the normal yolk sac endoderm, and the source of substances exhibiting positively with the fluorescent anti-AFP staining method was observed to be a substance located in the r-ER widely spread in the cytoplasma.