In a case-control dietary study, Modan et al. (Chaim Sheba Medical Center, Tel Hashomer, Israel) supported the hypothesis that low residue food is an etiologic factor in cancer of the colon. Control subjects consumed significantly more food with high fiber content than did 198 patients with colon cancer. Of the 73 items on the fiber list, 61 were eaten less frequently by the cancer patients than by the neighborhood controls, and 57 were ingested less often than by surgical controls. The authors postulate that a mechanism related to the possible carcinogenic properties of degraded biliary compounds may be implicated.

To determine the carcinogenic or cocarcinogenic effect of chronic inhalation exposure of hamsters to synthetic smog and ferric oxide particles, Nettesheim and coworkers (Oak Ridge National Laboratory, Oak Ridge, Tennessee) injected diethyl nitrosamine (DEN) into the animals and then exposed them to air contaminants. The inhaled iron oxide particles enhanced DEN carcinogenesis in the lungs, but synthetic smog had neither a carcinogenic nor cocarcinogenic effect. The number of animals with lung tumors was almost double and the number of lung tumors almost triple in DEN-treated hamsters exposed to iron oxide dust compared with DEN-treated hamsters breathing filtered air.

Menczer et al. (Chaim Sheba Medical Center, Tel Hashomer, Israel) reported an association between herpesvirus type-2 antibody titers and squamous cell carcinoma of the uterine cervix in Jewish women. The percentage of type-2 positive titers among these patients was 15.4, a figure considerably lower than in other reports from different demographic areas where 50 to 60 percent of the patients were type-2 positive. The low incidence of cervical cancer among Jewish women may be related to their low reservoirs of this virus.
August

In a lengthy paper on human breast cancer, Wellings and Jensen (University of California, Davis, California) described a wholemount method for study of the pathology of the entire human mammary gland. By a subgross sampling technique with histologic confirmation, the authors enumerated and identified focal dysplastic, metaplastic, hyperplastic, anaplastic and neoplastic lesions in 196 whole human breasts. Of these, 119 were suitable for quantitative morphologic analysis of the focal lesions by type.

Morphologic evidence supported the hypothesis that most lesions traditionally grouped as mammary dysplasia or fibrocystic disease arose in terminal ductal-lobular units (TDLU) or in the lobules themselves. Isolated foci of ductal carcinoma in situ within the TDLU were seen in 40 percent of cancerous breasts, which indicated that the disease was often multifocal. Of the contralateral breasts, 60 percent with clinical cancer contained such lesions, and data confirmed the clinically known fact that women with breast cancer have a high rate of the disease in the remaining breast. That atypical lobules are derived from TDLU and are precancerous was evidenced morphologically.

Analysis of the 28 pairs of breasts obtained from autopsies revealed that the two members of each pair had similar lesions, but the degree of cytologic atypia varied. Hypersecretory lobules were found in nulliparous females, even in the eighth decade, and were more common in breasts from patients treated with digitalis, dilantin and reserpine. This technique provides a means to quantify the pathologic content of the entire human breast.

Cusumano and associates (University of Florida, Gainesville, Florida) have devised a protocol to examine the effects of aerosolized BCG in patients with nonresectable lung cancer. Twenty patients were treated with 90 aerosolized BCG doses. Although local and systemic reactions were frequent, the investigators found the procedure safe and practical. Of the 10 patients treated five or more times, four were stable and one slowly failed. Autopsies on five patients showed no BCG effects. The recommendation is that BCG be given before an attempt at surgical cure in the hope that the regional defenses will be enhanced, and the problems from microscopic metastases will be reduced.

Exposing hamsters to the smoke of two types of research cigarettes, Reznik-Schüler and coworkers (Medizinische Hochschule Hannover, Hannover-Kleefeld, Germany) found hyperplastic changes in the bronchial epithelia. Ultrastructurally, there were epithelial invaginations, tilt of nuclear axis, increased number and size of lysosomes, as well as more intramitochondrial granules. One year after termination of chronic exposure to smoke, the alterations had neither reversed nor advanced.
September
In a guest editorial, Cohen (Veterans Administration Hospital, Washington, D.C.) reports on the status of lung cancer: early diagnosis, staging of disease and therapeutic modalities. Mass roentgenographic screening at six-month intervals has not been successful for early diagnosis of lung cancer. A more promising approach is the serial collection of sputum samples for cytologic examination. Early detection studies would be advanced if the population at high risk of developing this neoplasm could be defined more narrowly.

For nearly all patients with bronchogenic carcinoma, surgery still represents the only chance for cure. Surgical resectability depends on the physiologic status of the host and the stage of the disease. Other modalities include immunotherapy, radiation therapy, chemotherapy, and a combination of the last two. The author reviews the pros and cons of each treatment method.

A workshop on "Receptor Assay in Breast Cancer Tissue," at the Fourth International Congress on Hormonal Steroids, was held in Mexico City, September 1974. Korneman (University of California at Los Angeles, California) presents a summary and an interpretation of the workshop.

Techniques for receptor detection include dextran-coated charcoal, agar gel electrophoresis, sucrose density gradients, Sephadex G-25 column, a hydroxyapatite column and DEAE cellulose filter paper. An important clinical question is the predictive powers of the presence or absence of receptors in the endocrine management of patients with recurrent disease. Those tumors lacking estrogen receptors rarely respond to endocrine-related therapy; those with estrogen receptors have a 60 percent response.

What is the role of estrogen receptor assay and hormonal management in breast cancer? It may become possible to identify those patients for whom endocrine management will be fruitless, and needless castration, adrenalectomies and hypophysectomies can be avoided, as well as clinical trials with estrogens or androgens. The estrogen receptor is one of many potential markers of cell differentiation that may be used therapeutically in the treatment of breast cancer.

In a survey of 2,822 young adults given X-ray treatments in infancy and of their 5,005 nonirradiated siblings, Hempelman et al. (University of Rochester School of Medicine, Rochester, New York) determined the incidence of neoplastic disease. Only thyroid neoplasms occurred in sufficient numbers to permit statistical analysis for the effects of X-rays on incidence by sex, age and dose. Thyroid cancer developed earlier in life than did benign lesions, especially in boys. Females had a greater risk of thyroid cancer than did males. The risk of neoplasms was proportional to the radiation dose, with a linear risk coefficient of 2.5 per year per million people exposed to one rad for the entire irradiated population.