April

Using nuclear magnetic resonance (NMR) $T_1$ and $T_2$ relaxation times, Medina and associates (Baylor College of Medicine, Houston, Texas) investigated the ability of NMR spectroscopy to distinguish normal, diseased, non-neoplastic and neoplastic human breast tissue. The NMR relaxation times could differentiate between the mean values of breast tissue neoplasms and diseased and normal tissues, with probability values less than 0.001. Classification of a single sample as benign or carcinomatous could be done with 99 percent confidence. For human breast tissue, $T_1$ was more discriminating than $T_2$. NMR spectroscopy is not intended to replace microscopic diagnosis but to be an additional weapon in the armamentarium of the pathologist.

With a nipple aspiration technique, Petrakis et al. (G. W. Hooper Foundation. University of California, San Francisco, California) studied the biologic and physiologic factors associated with secretions from the nonlactating human breast. Data from 604 normal women on race, age, menstrual status, parity, use of contraceptive pills, use of hormones, and cerumen type indicated that availability of secretions was related to race, age, menopause, and genetic factors associated with apocrine gland functions. Fluid aspirates were obtained most often from Caucasians, least often from Chinese. Japanese and Chinese women with dry-type cerumen had a lower percentage of successful aspirations than did those with wet-type. This suggests that genetic factors influence breast secretion in the nonlactating state. These findings may be relevant to epidemiologic studies on the etiology of breast cancer.

A controlled trial by Comstock and co-workers (The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland) of children in Puerto Rico did not confirm previous uncontrolled observations that BCG vaccination prevents leukemia and other cancers. From 1949 to 1951, 191,827 children in Puerto Rico were enrolled in the study. Of these children, one to 18 years old, 82,269 were classified as reactors to tuberculin and 109,558 as nonreactors. Of the nonreactors, 31,856 refused vaccination, 27,338 (selected by year of birth) were left unvaccinated as controls, and 50,674 were vaccinated with BCG. By the end of June
1969, 37 cases of cancer had been diagnosed among the controls and 98 among the vaccinated, yielding average annual rates of 7.2 and 10.3 per 100,000, respectively. There was a slight deficiency of leukemia and an excess of lymphosarcoma and Hodgkin's disease in the vaccinated group. The excess risk of cancer was concentrated among children 10 to 18 years old on entry into the trial.

In a study of 3,145 feline necropsies over an 11-year period, Patnaik et al. (The Animal Medical Center, New York, New York) found 289 nonhematopoietic tumors in 264 cats. Malignant and epithelial neoplasms were more common than benign or mesenchymal lesions in all ages and breeds and in both sexes. They were also more frequent in females than in males, even after mammary tumors were excluded. Pulmonary carcinomas and osteosarcomas occurred more often in domestic cats than in other breeds; intestinal carcinomas were most frequent in Siamese cats. Females predominated in pulmonary carcinomas, hemangiosarcomas, osteosarcomas, and squamous cell carcinomas, but males outnumbered the females in intestinal carcinomas.

Kobayashi and associates (Cancer Institute, Hokkaido University School of Medicine, Sapporo, Japan) reported that the 3-methylcholanthrene-induced KMT tumor, transplanted into WKA rats, induced both local solid tumors and regional lymph node metastases. Neither active immunization with "xenogenized" identical tumor cells nor surgical excision of the solid tumor prohibited the metastases when each treatment was given four days after transplantation of the tumor. But when immunization was combined with the surgery, metastases were significantly decreased and the survival time was prolonged.

May

Basing their analysis on 214 newly diagnosed cases of large bowel adenocarcinoma in residents of Cali, Colombia, between 1962 and 1971, Haenszel et al. (National Cancer Institute, Bethesda, Maryland) found that the upper socioeconomic classes were at higher risk. This was in contrast to the social class gradients for cancer of the stomach and uterine cervix. The gradients in risk for cancer of the colon were most marked in the segments from ascending through recto-sigmoid bowel and were minimal for cecum and rectum. A
1964 survey in Cali showed a more than five-fold difference in per capita consumption of beef, pork, eggs, and milk, with a marked deficiency in the intake of animal protein among people of low economic status.

With the application of gas-liquid chromatography, Mutsuo Kodama and Toshiko Kodama (Aichi Cancer Center Research Institute, Nagoya, Japan) obtained urinary steroid profiles in a population of normal women. The influence of the host age and the menstrual cycle on the 24-hour excretion was studied for each of 14 identified neutral steroids, four of which were found to be menstruation dependent. The authors then determined normal patterns of steroid excretions. This work forms a basis for the analysis of steroid excretions in the diagnosis and therapy of breast cancer.

Liao and associates (McMaster University and Henderson General Hospital, Hamilton, Ontario, Canada) characterized seven human malignant melanoma cell lines as to morphology and growth pattern in culture and cytogenetic profile. Cytogenetic analysis with the fluorescent banding technique revealed only chromosomes with gross aneuploidy. The growth pattern was examined by determination of plating efficiency and saturation density for each line.

Using an indirect Coons test, Rogalsky (P. A. Herzen Research Institute of Oncology, Moscow, U. S. S. R.) studied the intercellular and intracellular localization of carcinoembryonic antigen (CEA) in 78 tumors of the human colon. Several variations in CEA sites were observed, and some tumor cells were capable of secreting considerable amounts of CEA. The change in CEA localization in pathologically altered cells was termed “antigenic translocation.”

Emödi and co-workers (University Children’s Hospital, Basel, Switzerland) measured circulating interferon in man after administration of exogenous interferon intravenously, subcutaneously and intramuscularly. Patients included those with different virus infections, cancer or both. The most important finding was that interferon activity was long lasting in the serum after an intramuscular or subcutaneous application of exogenous human leukocyte interferon. For therapeutic or prophylactic trials, the authors recommend its administration every 12 hours for a high and stable level of circulating interferon.