Viewing the

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Foreign Body Tumorigenesis
The concept of foreign body (FB) tumorigenesis in the carcinogenic process is the subject of a guest editorial by Brand (University of Minnesota Medical School, Minneapolis, Minnesota). He believes that two fundamental assumptions derived from studies of FB tumorigenesis may have significance in cancer research: (1) the primary carcinogenic occurrence is not at one specific locus, but at various sensitive places within the cellular growth control system; (2) the cells must pass through phases of preneoplastic maturation before specific tumor characteristics are expressed and neoplastic autonomy is reached. He theorizes that every carcinogenic process involves a defect in the system controlling cell growth, and that cancer is caused by many groups of agents with diverse modes of action. The model of FB tumorigenesis is especially suitable for study of in vivo carcinogenesis because results obtained from such cell preparations at various preneoplastic maturation stages can be related to specific tumor characteristics.

Hodgkin’s Disease Risk Study
Grufferman and associates (Harvard School of Public Health, Boston, Massachusettts) correlate the incidence of Hodgkin’s disease between 1959 and 1973 in residents of the Boston area with certain occupational groups. They determined that physicians and nurses, who have frequent exposure to persons with disease, have no excess risk; similarly, teachers, a group suggested to be at high risk because of the exposure to “carriers” or contacts, have no excess of Hodgkin’s disease. Thus, their data do not support the suggestion that adults who come into contact with affected persons are at increased risk of developing Hodgkin’s disease. As in previous studies, woodworkers were found to have an excess risk of this disease.

Nasopharyngeal Carcinoma and Singapore 2 Antigen
An association between the occurrence of the HLA antigen Singapore 2 (Sin 2) and nasopharyngeal carcinoma was confirmed by Simons and associates (University of Singapore). The patients were 110 Singapore Chinese with histologically confirmed nasopharyngeal carcinoma; 91 nasopharyngeal carcinoma-negative Singapore Chinese served as controls. The increased risk for this cancer in Chinese was confined to the joint occurrence of both the Sin 2 and A2 antigens, and the occurrence of either Sin 2 or A2 without the other does
not increase the risk. Thus the risk for nasopharyngeal carcinoma may be increased only when the genes coding for A2 and Sin 2 are on the same chromosome.

Childhood Cancer And Prenatal Radiation Exposure
A second Mantel-Haenszel analysis of data from the Oxford Survey of Childhood Cancers was made by Kneale and Stewart (University of Birmingham, Birmingham, England). From this retrospective study, based on 1,157 cases and 806 controls, they determined that exposure to X-radiation during the first trimester of pregnancy is ten times more dangerous than during the third trimester. Their statistical evaluations indicated that the observed numbers of deaths from cancer were larger than expected when X-ray examinations required more than two films. The increase in cancer risk rose with the number of films used, thus suggesting a radiation dose effect.

Cervical Cancer
Another Class of Invasive Ca
Laskey and co-workers (Connecticut Cancer Epidemiology Unit, Yale University, New Haven, Connecticut and Connecticut Tumor Registry, Hartford, Connecticut) studied all 13,395 cases of carcinoma in situ and invasive cervical carcinoma recorded between 1935 and 1973 by the Connecticut Tumor Registry. Of these, 5,781 were in situ and 7,614 were invasive. The prediction had been made that, by the early 1970s, the incidence of invasive cervical cancer would be near zero. This prediction was based on the assumption that nearly all cases of invasive cancer were preceded by a long-lasting period of carcinoma in situ identifiable by cytologic screening, and that widespread screening would uncover potentially invasive cases that were curable.

However, the persistent occurrence and rapid progression of invasive disease in screened populations, with early deaths of some women having apparently localized disease at diagnosis, suggests the existence of a second class of invasive cervical cancer. Cytologic methods cannot detect these cases in the premalignant stage, and other screening methods (metabolic, hormonal, immunologic, virologic) may be required.

Growth Pattern Characteristics
The growth patterns and ultrastructure of 10 poorly differentiated invasive carcinomas of the uterine cervix were observed in vivo and in vitro by Auersperg and Erber (University of British Columbia, Vancouver, British Columbia). All the carcinomas in vivo had retained their ultrastructural traits of either squamous, glandular or basal cell differentiation. The squamous types grew as compact, cohesive colonies both in vivo and in vitro. Tumors with basal or glandular traits dispersed and infiltrated host tissues; in vitro, however, their growth patterns were unpredictable. Carcinomas in which both squamous and glandular characteristics coexisted in the same cells had growth patterns similar to those of tumors with squamous traits.

The enhancement of differentiation by growth in culture further supports the concept that the characteristic dedifferentiation associated with malignant progression is not necessarily due to irreversible changes at the level of the gene. The environmental factors present in the culture influence the capacity of the tumor cells to differentiate beyond the level attained in vivo.

December
Environmental Cancer
Smoking and Lung Ca
A guest editorial by Reif (Mallory Institute of Pathology, Boston City Hospital and Boston University School of Medicine, Boston, Massachusetts), emphasizes the responsibilities of cancer researchers to make citizens aware of the hazards of smoking.
The finding that more than 20 percent of all cancer deaths in the U.S. population are caused by smoking is the most meaningful breakthrough in cancer research. If no one smoked, 81 percent of lung cancers could be prevented, whereas advances in effective early diagnosis of lung cancer may improve the cure rate by only two percent. Thus, prevention, rather than early detection, is obviously more effective. Unless research findings are applied in community practice, they are little more than intellectual exercises. Those engaged in cancer research should consider participation in public education within their communities an important contribution in the eradication of cancer.

**Colon and Rectal Cancer Patterns**

Correlations of colon and rectal cancer mortality patterns with demographic, socioeconomic, ethnic and environmental data were made by Blot et al. (National Cancer Institute, Bethesda, Maryland). Average mortality rates for whites between 1950 and 1969 were calculated for all 3,056 counties of the contiguous United States. Rates for both colon and rectal cancer were highest in the Northeast, especially along the coast, and in urban areas around the Great Lakes. Heavily populated counties and those with higher levels of education and income had elevated mortality rates. No consistent relationship was noted between colon or rectal cancer mortality and sales of alcoholic beverages.

Among the white population, more deaths occurred from colon cancer in females than in males, except in highly populated counties. Areas inhabited by people of Irish, Czechoslovak or German descent had elevated mortality from colon cancer. In contrast, low rates were reported in areas with a high proportion of residents of Scandinavian, Mexican or South American descent. Death rates for rectal cancer among whites were greater among males than females, and were highest in the counties with a high percentage of residents of Greek, Irish and German stock. Examination of mortality rates of 2,000 non-white residents of 1,043 counties revealed that the patterns for colon and rectal cancers resembled those of whites.

The factors responsible for the geographic and socioeconomic variations in colorectal cancer are unclear, but many studies have implicated environmental influences, particularly diets containing beef and low-fiber foods. The finding that migrants who travel from high- to low-risk areas adopt the low-risk of the host area suggests that the latency period for environmentally induced bowel cancer may be extremely short.

**ACS Forms Advisory Committee on Childhood Cancer**

The American Cancer Society has formed the National Advisory Committee on Childhood Cancer to deal with the special problems of the young cancer patient. This 25 member continuing committee includes a diverse group of medical professionals, as well as social workers, parents, teachers and experts in public education.

The new committee is devoted to the following tasks:

- Improving care of the child with leukemia;
- Developing a comprehensive approach to programs on childhood cancer;
- Exploring underdeveloped aspects of childhood cancer (rehabilitation);
- Serving professionally as a liaison group between the Society and other national groups involved with cancer in children. For further information, comments or suggestions, contact your local Division of the American Cancer Society.