you think that they are real cancers? As you know, some pathologists state that they are always benign.

The answers are:

1. In the present report, these cases in which carcinoma co-existed with adenoma were classified as polypous carcinomas and those in which adenomatous tissue was no longer recognizable were classified as polypoid cancers. This last may be identifiable with papillomatous carcinoma. We don't believe that these two groups are essentially different in nature, because in cases of polyposis adenomatosa co-existence of both groups is not infrequently observed.

2. As shown in Fig. 18, the percentage of early carcinomas related to deep and moderate ulcers is approximately one-third of the total cases. This fairly coincides with the percentage of so-called ulcer-cancers calculated by analysis of advanced cases.

3. Speed of growth is not easily distinguishable in human stomach carcinomas. However, the average age of the deep ulcer-cancer group is 2 years more than that of the shallow ulcer-cancer group. Moreover, most of the shallow ulcer cases were highly anaplastic cancers with signet ring cells, whereas more differentiated tubular adenocarcinomas was usually encountered in deep ulcer-cancers.

4. Yes, I do think it is a cancer. Not only the cellular atypia, but also the structural irregularity may support this opinion, although invasive growth and metastasis are still absent. I have an example in which a pedunculate adenomatous polyp of the colon transformed into a carcinoma after 19 months, (see the text). It is the earnest desire of us surgeons to detect the cancer at a stage, where neither invasive growth nor metastasis is yet observed.

Etiological Factors in Gastrointestinal Cancer in Man*

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The wide variation in the incidence of carcinoma of the gastrointestinal tract between countries of relatively similar ethnological background (Clemmesen, 1965; Haenszel, 1958; Segi and Kurihara, 1960) and the change in frequency observed within immigrant populations (Haenszel, 1961; Haenszel and Dawson, 1965; Terris and Hall, 1963) indicate that environmental factors are significantly involved. However, the failure to demonstrate any

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correlations in geographical distribution between carcinoma of the esophagus, stomach, and large intestine would indicate that different etiological stimuli are involved for each site.

Since substances known or suspected to be carcinogenic to animals have been demonstrated in foodstuffs consumed by humans (Cannon, 1962; Hueper and Conway, 1964, 1965) most etiological studies on gastrointestinal cancer in man have tended logically to concentrate on the role of diet, but except for the relationship between heavy alcohol ingestion and cancer of the esophagus, no specific dietary factors have as yet been implicated. Moreover, few experimental carcinogens produce tumors of the glandular stomach or intestine on oral administration in animals, which makes tests of suspected agents difficult.

In 1959, a retrospective survey was commenced in the greater Kansas City area to investigate the socio-economic and dietary background of patients with carcinoma of the gastrointestinal tract, and the results are presented in this paper. While a strong association with any specific factor could not be demonstrated, the results indicate that certain factors, sometimes considered etiologically important, are unlikely to be of major significance in the Kansas population.

The Kansas population under study was fairly homogeneous, and marked dietary variations were not a feature since the number of immigrants in the Kansas City area was small.

Methodology

Interviews were carried out in hospitals and, following a pilot study, an open-ended interview was used. A total of 93 patients with gastric cancer and 340 patients with cancer of the colon and rectum were available for analysis. Three controls were available for each carcinoma patient in both groups.

Results

Cancer and control patients were matched by age in decades, race and sex (Table I). Unfortunately the number of gastric cancer cases available for study was small. As reported by others, a slightly higher proportion of gastric cancer patients were in the lower socio-economic group. This almost certainly reflects local environmental factors, since incidence patterns in different countries do not consistently correlate with socio-economic levels.

No significant differences were observed between the cases of gastric cancer and controls regarding marital status, religion, occupation, bowel habits, use of tobacco, alcoholic and non-alcoholic beverages, and consumption of individual foodstuffs. However, the dietary patterns of gastric cancer patients indicated a slightly increased use of animal fats, cooked fats, fried foodstuffs, bacon, and decreased use of dairy produce (Tables II, III). The differences,