

### Conclusions

There are many other factors which may influence the course of Hodgkin's disease and one of the most important of these is radiotherapy. In 'early' Hodgkin's disease (Stages 1 and 2) energetic radiotherapy may be followed by cure (Easson & Russell 1963). The main problem is one of deciding which patient has disease of the type which may be benefited enormously by energetic treatment, and which patient has widespread disease and is therefore unlikely to benefit. Consideration of the various factors described above will help in solving this problem.

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### Factors Influencing the Prognosis of Early Cancer of the Rectum

Before considering the prognosis of early cancer of the rectum it is necessary to define the criteria for use of the word 'cancer' as well as the phrase 'early cancer'. The word 'cancer' (or 'carcinoma' to be more precise) should only be used when there is unequivocal evidence of invasion of adjacent normal tissues by the neoplastic process. Pre-invasive carcinoma and carcinoma-in-situ are not terms widely used in connexion with neoplasia of the intestinal epithelium although in my opinion they are synonymous with the expressions adenoma, papillary adenoma and villous papilloma.

The Dukes classification, now widely used throughout the world, has proved to be a most useful guide to prognosis (Bussey 1963). The earliest stage of this classification is the 'A' case in which growth is confined to the bowel wall and there are no lymphatic metastases. It has been shown that patients treated by excision of the rectum for cancers at this stage are, with few exceptions, cured of their disease.

*Early rectal cancer* is defined, for present purposes, as invasive carcinoma that has not spread in direct continuity beyond the submucous layer, regardless of the presence of blood-borne or lymphatic metastases. Out of a total of 2,305 rectal cancers admitted to St Mark's Hospital between 1948 and 1962 only 76 (3.3%) came into this category. This low incidence not only means that rectal cancer is rarely detected at an early stage in its natural history, but also that individual pathologists cannot expect to see more than occasional examples of so-called 'malignant polyps'.

In view of the rarity with which very early rectal cancer is diagnosed, an investigation was made into the incidence of Dukes A, B and C cases for each five-year period in the years 1928 to 1962. This showed that the incidence of Dukes A cases remained approximately the same throughout this period at about 15% of all cases; the incidence of Dukes B remained the same at about 35% and the incidence of Dukes C cases the same at about 50%. These figures suggest that cancer of the rectum is not being diagnosed any earlier today than thirty-five years ago. However, these observations must be considered together with the great increase in the resectability rate of rectal cancer from 46.6% in 1928-32 to 93.1% in 1953-7 (Bussey *et al.* 1960) as well as with progress in the prevention of rectal cancer by the detection of precancerous lesions.

### *Lymphatic Metastasis in Early Cancer*

The incidence of lymphatic metastases according to the degree of local spread in continuity has been calculated for a consecutive series of 2,084 tumours treated by excision of the rectum. In 46 cases in which growth was limited to the mucosa and submucosa the number with lymphatic metastases was 5 (10.9%). For growths spreading in continuity beyond the submucosa but still confined to the bowel wall the incidence was 12.1%; and for growth spreading in continuity through and beyond the bowel wall the incidence rose to 58.3%. It would appear that until penetration of the bowel wall has taken place the chance of lymphatic metastasis having already

occurred is low. Moreover, when it does occur the tumours are usually poorly differentiated, for 3 of the 5 cases of lymphatic metastasis in the group of early rectal cancers were histologically of a high grade of malignancy (Broders Grade IV) and 2 were of average grade (corresponding to Broders Grade III rather than Grade II).

#### *Treatment*

Forty-six patients with early cancers were treated by radical excision of the rectum. There was one death from operation; 26 survived five years; 13 are still alive for periods of three to five years and 6 have died before five years. Among these 6, 4 died of intercurrent disease unrelated to their rectal cancer and 2 died of recurrence. These cases both had lymphatic metastases (Dukes C). One was an anaplastic carcinoma and the other a moderately well differentiated adenocarcinoma (Broders Grade III).

Thirty of the 76 early cancers were treated by local excision. Eighteen have survived five years; 8 are still alive for periods of three to five years; and 3 died before five years of intercurrent disease unrelated to their rectal cancer. Only one patient died of recurrence which, in retrospect, was due to incomplete local removal of the primary tumour.

Many early rectal cancers present clinically as so-called malignant polyps; that is, a polyp on a stalk containing invasive carcinoma. All of these are rightly treated in the first place by local excision and any further radical treatment is considered after the pathology of the polyp has been assessed (Carden & Morson 1964). Provided the surgeon, in consultation with the pathologist, can be sure that local excision is complete then no further radical treatment is necessary except in poorly differentiated carcinomas of the Broders Grade III and Grade IV types.

#### *Pre-invasive Carcinoma of the Rectum*

In this laboratory it has always been the custom to examine one or more blocks of tissue in order to establish the presence of benign neoplasia in continuity with the invasive tumour. Sometimes this continuity is obvious on gross examination, particularly in the case of the larger villous tumours. The incidence of origin in benign tumour for 2,305 cases of rectal cancer as well as the incidence at different stages of the extent of spread of growth in direct continuity through the bowel wall suggests that at least half of all cases of intestinal cancer have a preceding 'pre-invasive' or benign phase. The frequency with which this benign tissue can be detected histologically varies with the extent of spread. It would appear that as

invasive malignancy progresses so the pre-existing benign tumour is destroyed. Thus, in about half (56.6%) of all the 'early' rectal cancers there was histological evidence of pre-existing benign tumour. This can mean that for those cases in which residual benign tumour could not be demonstrated the carcinoma either arose *de novo* or that any residual benign tumour has already been replaced by adenocarcinoma. When the extent of spread is limited to the bowel wall the incidence of origin in benign tumour is 18.3%; when spread in continuity is involving the extramural tissues the incidence is only 7.6%. The overall incidence of origin in benign tumour for all 2,305 specimens examined was 10.7%.

The incidence of origin in the different types of benign tumour for the 76 'early' rectal cancers confined to submucosa only has also been investigated. The figures show that the incidence of origin in the adenomatous type of growth pattern was 54%; for villous papilloma 23% and for the intermediate type (papillary adenoma) also 23%. However, the relative frequencies must be studied bearing in mind that the villous type of growth pattern is less common than the adenomatous type. There is some support from these figures for the view that 'villous tumours' are rather more prone to become malignant than adenomas. This may only be a reflection of the fact that the villous growth pattern is associated with a wide field of origin giving a larger amount of neoplastic activity than the adenomatous type which is usually a smaller circumscribed lesion. This quantitative factor in the pathogenesis of intestinal cancer may be important.

Although it appears that invasive cancer is coming to treatment no earlier today than in former times there has been in recent years an apparent increase in the frequency with which rectal and colonic polyps are removed. This is largely due to greater skill in the detection of polyps by sigmoidoscopy and barium enema, particularly the air contrast technique. Unfortunately adenomatous polyps and villous tumours are often symptomless, being discovered by chance during examination for symptoms due to other conditions such as hæmorrhoids and diverticular disease. Not all intestinal polyps are precancerous (Morson 1962), but the removal of those that are should contribute towards the prevention of intestinal cancer.

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