

A Reprint from

THE PREVENTION OF CANCER

EDITORS

Clinical Aspects

RONALD W. RAVEN

M.B.D., F.R.C.S.

Senior Surgeon, Royal Marsden Hospital and Institute of Cancer Research, Royal Cancer Hospital, Surgeon, Westminster Hospital, Joint Lecturer in Surgery, Westminster Medical School, University of London, Late Honorary Professor, Royal College of Surgeons of England

Experimental Aspects

FRANCIS J. C. ROE

D.M., D.Sc., M.C.P.H.

Reader in Experimental Pathology, Institute of Cancer Research, Royal Cancer Hospital, London, Associate Pathologist, Royal Marsden Hospital, London

Published by

BUTTERWORTHS

CHAPTER 23

CANCER OF THE RECTUM

FRANCIS J. C. ROE

Rectal cancer as well as colonic cancer may complicate familial polyposis (Chapter 20), and rectal cancers sometimes arise in benign tumours of the rectum (Chapter 22) or as a complication of ulcerative colitis (Chapter 23). Otherwise our knowledge of the aetiology and methods of prevention of rectal cancer are negligible.

GEOGRAPHICAL VARIATIONS IN INCIDENCE

Age-standardized mortality rates for cancer of the rectum vary between countries. According to calculations made by Case (1960), the mortality in both sexes in the United Kingdom is approximately five times that in Japan and Italy, and among the non-white population of the United States of America. Up to two-fold differences exist between different areas within England and Wales, and mortality in urban areas seems to be higher than in rural areas in both males and females.

ECONOMIC AND SOCIAL EFFECTS

In males, there is a slight but definite gradient for mortality from cancer of the rectum in relation to social class: the disease being most common in the poorest social class (Registrar General, 1958).

Case (1960) pointed out that, so far, no effective survey of the relation between occupation and mortality from cancer of the rectum has yet been carried out. Therefore, the existence of an association remains an open question.

USE OF ALCOHOL, COOKED FOODS, PURGATIVES AND OINTMENTS

Consumption of Alcohol

Haenszel (1961) compared mortality from cancer of various sites among immigrants to the United States of America from other countries. Male immigrants from Ireland experienced high rates for cancer of all parts of the gastro-intestinal tract, including the rectum. It is possible that high alcohol consumption is a causative factor.

Consumption of Cooked Foods

The possibility that factors present in food, particularly in cooked foods, play a role in the aetiology of cancer is considered in Chapter 3. Although to date the evidence that the consumption of cooked foods predisposes to cancer of the rectum is entirely equivocal (Dukes, 1960), the fact that man appears to be unique among the mammalian kingdom in experiencing a high mortality from cancer of the rectum suggests that more serious studies of the effects of the cooking of foodstuffs are overdue.

CANCER OF THE RECTUM

Use of Purgatives

Boyd and Doll (1954) found a much higher incidence of exposure to liquid paraffin medication among patients suffering from gastro-intestinal cancer than among various control populations. It is not clear from their report the extent to which the rectum shared the excessive cancer incidence. Medication with other purgatives was unassociated with gastro-intestinal cancer.

The authors were careful to point out that the incidence of gastro-intestinal cancer in the population as a whole, had not increased since the introduction of medicinal paraffin in the first decade of the century, and that cancer of the colon and rectum are more frequent in men, while medicinal paraffin is used more commonly by women. Twort and Ing (1928) and Wood (1930) failed to induce cancer in animals with liquid paraffin.

Use of Rectal Ointments and Suppositories

The introduction of anti-pruritic preparations based on anti-histaminics or cortisone for the treatment of pruritus ani has led to the less frequent use of preparations containing crude coal tar. Nevertheless, some such preparations are still marketed (*see British Encyclopaedia of Medical Practice*, 1961). It is possible that many cases of cancer of the rectum are attributable to the use of tar-containing ointments and suppositories. According to Rook, Gresham and Davis (1956) the use of tar in aqueous or alcoholic solution, or in water miscible bases may involve a greater carcinogenic risk than the use of tar in paste or ointment bases. An epidemiological study of the possible cancer hazard from the use of tar preparations for pruritus ani is overdue. In the meantime, the use of coal tar is ill-advised.

Other pharmaceutical preparations intended for rectal application should, where the relevant information is lacking, be tested for carcinogenicity by the rectal route in animals.

FACTORS WHICH PREDISPOSE TO CANCER OF THE RECTUM

A priori, by analogy with the established association between chronic inflammation and cancer in other tissues (such as the gall bladder), it might have been expected that the presence of internal haemorrhoids and chronic inflammation would predispose to cancer at this site. In fact, most authorities agree that if there is such association, it is extremely weak, except in the case of ulcerative colitis (Dukes, 1958; Gabriel, 1952). The association between familial polyposis and cancer has been discussed elsewhere (*see Chapter 20*). According to Thompson (1958), at least 25 per cent of malignant tumours of the rectum or anus arise in pre-existing adenomas or papillomas. Clearly, the surgical removal of them, or at least, the frequent examination of patients with such lesions is desirable (*see Chapter 22*).

A PLEA FOR MORE EPIDEMIOLOGICAL AND EXPERIMENTAL STUDIES

Much of our ignorance of the possible ways of preventing cancer of the rectum stems, not from our failure to find causative mechanisms, but from our failure to look for them. A strong plea for more epidemiological and experimental studies is therefore entered.

REFERENCES

REFERENCES

- Boyd, J. T. and Doll, R. (1954). *Br. J. Cancer* **8**, 231
- British Encyclopaedia of Medical Practice (1961). Second Edition. See 'Pruritus' in Conditions Index p. 35
- Case, R. A. M. (1960). In *Cancer of the Rectum*. Edinburgh; Livingstone
- Dukes, C. E. (1958). In *Cancer*, Vol. 2, ed. by R. W. Raven. London; Butterworths
- (1960). In *Cancer of the Rectum*. Edinburgh; Livingstone
- Gabriel, W. B. (1952). In *The British Encyclopaedia of Medical Practice*, Second Edition, Vol. 10, p. 566
- Haenszel, W. (1961). *J. natn. Cancer Inst.* **26**, 37
- Registrar General (1958). The Registrar General's Decennial Supplement, England and Wales 1951, Occupational Mortality Part II, Vol. 1. Commentary p. 12, Vol. 2; Tables, pp. 306, 316, 326. London; H.M. Stationery Office
- Rook, A. J., Gresham, G. A. and Davis, R. A. (1956). *Br. J. Cancer* **10**, 17
- Thompson, H. R. (1958). In *Cancer*, Vol. 4, ed. by R. W. Raven. London; Butterworths
- Twort, C. C. and Ing, R. H. (1928). *Lancet* **1**, 752
- Wood, F. C. (1930). *J. Am. med. Ass.* **94**, 1641