# TREATMENT OF CANCER IN CLINICAL PRACTICE

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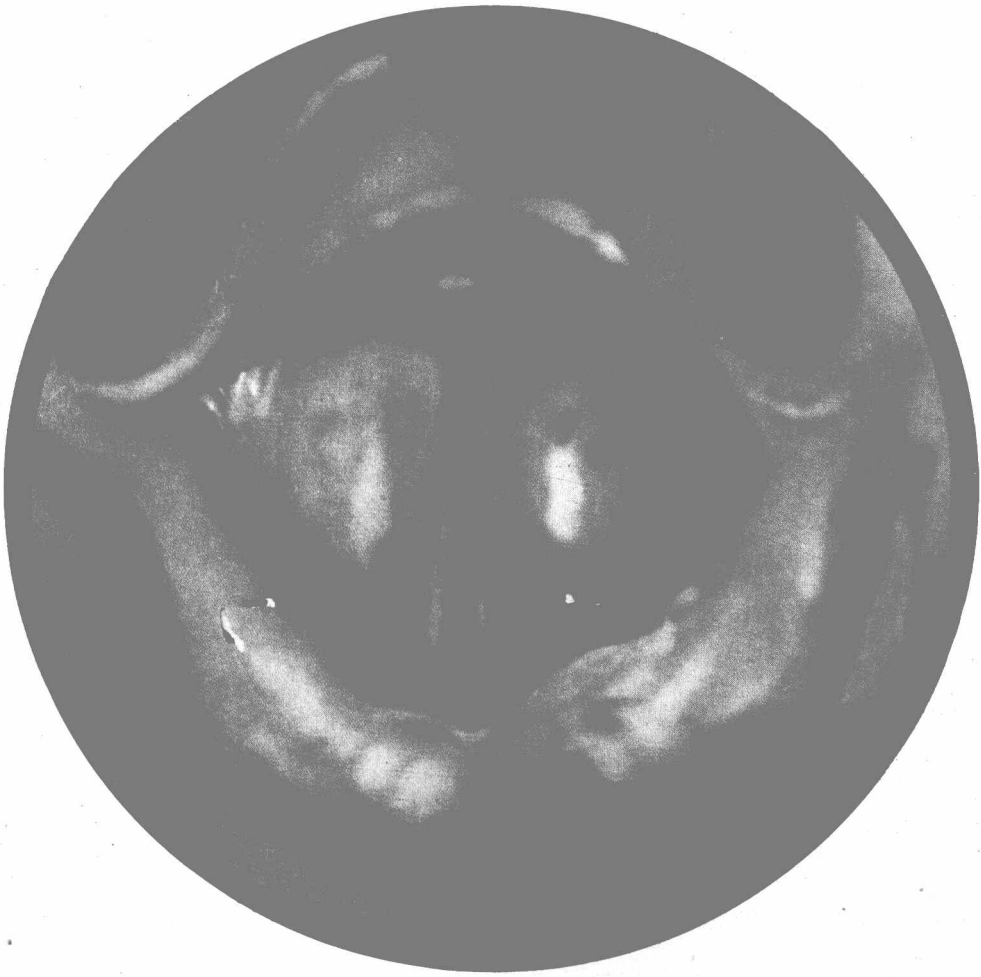

Subsiding fibrinous reaction in larynx following radiotherapy for a carcinoma of the arytenoid region in an elderly patient. The vocal cords are shown in position for phonation to demonstrate supra-glottic oedema. Acute post-radiation oedema of the glottis which worried early workers in this field is no longer a problem following the development of fractionated high quality radiation therapy. However, where there is obstruction at the outset it may be advisable to provide an adequate airway surgically before radiotherapy is begun. See page 450. Sometimes 'preparatory treatment' with measures to reduce sepsis and small daily doses of radiation may improve the airway past an infected tumour and avoid the necessity for tracheotomy.

# PREFACE

THERE have been substantial developments in all fields of cancer therapy in recent years, and to-day there would seem to us to be a need for the assessment of new techniques and integration of new knowledge. This book is an attempt to bridge some of the gaps which have threatened to develop between physicians, surgeons, gynaecologists and radiotherapists as a result of the inevitable specialisation which follows growth in the body of knowledge.

Larger operations, more powerful radiotherapeutic apparatus and a plethora of pharmaceutical agents do not in themselves confer better treatment. If improved results are to be obtained the desirability of collaborative effort in the determination of the plan of treatment in many forms of malignant disease is becoming obvious. The selection of the contributors to this book has, where appropriate, been based on their concentrated experience as working members of such teams at teaching centres in the United Kingdom. Firmly basing their opinions on the results obtained in practice at their own hospitals or elsewhere, the contributors have emphasised that vital details of technique depend on the clinical assessment of the biological potential and anatomical relationships of the cancer in each individual patient. The applications of surgery, radiotherapy, chemotherapy and hormone therapy have been linked together by commonsense principles. Immediate 'progress' in treatment has not been included unless this is supported by objective records of facts or results: chemotherapeutic agents and new techniques should not be publicised unless supported by clinical trials of adequate duration. Working hypotheses which form the basis of individual treatment have, however, been stated freely.

Although the editors hope that this work will appeal to general practitioners as well as specialists, they have had mainly in mind the interests of men and women preparing for postgraduate examinations, such as the F.R.C.S., M.R.C.O.G. and F.F.R. In addition, much of the book will be of great interest to those dental surgeons preparing for the F.D.S. The whole work has been planned to supplement and not to replace the standard works on operative surgery and radiotherapy. Medical textbooks rightly devote much of their space to the clinical features and diagnosis of disease, while discussion and reasoned argument on treatment may be, by contrast, superficial. Unfortunately it is often difficult to obtain a balanced view of the various therapeutic procedures applicable to a form of cancer from esoteric articles in the specialised journals. Our contributors have therefore discussed the clinical features of malignant disease in a particular site only in so far as these have a direct bearing on the problems involved in treatment. The preliminary chapters aim to make the later topographical chapters readily comprehensible

and may serve to introduce the interested undergraduate to the subject. The references, which in some chapters would be more accurately described as bibliography, have however been selected with the needs of the postgraduate student in mind.

When the contributions were brought together, setting down experience from different fields, it was gratifying to find a reasonably cohesive philosophy emerging. Nevertheless it would be indeed surprising if any one contributor were able to agree with all the views expressed by his fellow authors. We trust, however, that a representative synthesis of the evolving views of British physicians, surgeons, gynaecologists and radiotherapists has been achieved.

With the death of Mr. George Seed this country has lost one of its leading otolaryngologists. Mr. Seed had completed the text of the chapter on carcinoma of the larynx a few days earlier. He had done much to further that spirit of trust and good-fellowship amongst surgeons and radiotherapists which made possible the enthusiastic collaboration of our distinguished contributors.

We hope that this volume will be of interest to all those involved in the treatment of cancer and that it will help to dispel that sterile fatalism which heretofore has affected those qualifying to practice medicine.

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In addition to the medical, scientific and nursing staff, cancer treatment now requires an increasing number of other professional and technical staff. Many of the moulds and shells illustrated in this book are the work of Mr. Brian Jarvis.

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CHAPTER 1

# THE EVOLUTION OF CLINICAL PRACTICE

WITH the introduction of anaesthesia by Morton in 1846 and of the antiseptic theory by Lister in 1867, the foundations of modern surgery were laid almost fifty years before those of radiotherapy. Also in 1867, while the germ theory was beginning the great revolution in medicine and surgery, Cohnheim was placing before the world a scientific explanation of the phenomena of inflammation. The highways of surgical approach and the advances in technique were thus enlarged and there was a surge forward of surgical achievement. In the treatment of cancer as in inflammatory diseases these achievements would not have been possible without the simultaneous development of revolutionary techniques in histopathology and microscope construction. Thus we find a man like Theodore Billroth quick to avail himself of all such assistance, being a surgeon with training and interests in pathology and bacteriology. Wherever the boundaries of surgery were to be extended he was particularly prominent and by the time of his death in 1894 most of the operations in use today in the treatment of cancer were being tried out (or had been firmly established) by men with similar attributes in other countries.

Such advances were, of course, to have their effects mainly in the larger centres in Europe and North America. The morbidity and mortality following operations was still formidable even after the change-over from antisepsis to asepsis. Surgical aspirations to the operative approach to cancer as well as to many other diseases were forced to await the introduction of the modern era of anaesthesia, resuscitation and antibiotics. Yet in some centres without our present-day aids surgery could claim results in the treatment of certain types of cancer which set the standard for many years, and in this respect the results of surgery in cancer of the tongue by Butlin or in cancer of the uterus by Wertheim spring straight to the mind.

The turn of the century also saw the firm entrenchment of the carefully planned radical excision in one whole block of primary tumour with surrounding tissues and the lymphatic field of drainage, such as practised by Halsted for breast cancer. In addition, extended radical and exenteration operations had been thought out and practised by a few, and it has been claimed that Lister was the first surgeon to amputate at the shoulder joint for recurrent carcinoma of the breast. To such lengths did the enthusiasts of that time go that at the Philadelphia Academy of Surgery in 1897 a surgeon advocated amputation in every case of axillary recurrence after carcinoma of the breast! Following Beatson's lead in 1896, oöphorectomy was being performed by a few surgeons as an adjunct to operation for carcinoma of the


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breast on patients in whom the prognosis was regarded as hopeless. Surgeons had at last, by their capacity for hard work and devotion to their patients' interests, rightly begun to occupy that pinnacle of attainment—that pride of place from which they were to look down upon the rude and humble beginnings of radiotherapy: beginnings, the eventual development or applications of which could not have been foretold.

In 1895 Roentgen discovered x-rays, 'a new kind of ray', while working with a Hittorf-Crookes vacuum tube, and in the years that immediately followed, the nature of ionising radiations which form the basis of modern radiotherapy was intensely investigated.

Becquerel presented to the Paris Academy of Sciences the results of his discovery of the radioactive radiations emitted by uranium compounds. Thompson deflected cathode rays with a magnet and concluded that they were made up of discrete particles of negative electricity, and Rutherford identified alpha and beta particles. In 1898 Marie and Pierre Curie announced the discovery of radium.

In the first years of the present century the effects of x-rays and radium on malignant growths were appreciated. Tor Stenbeck in Sweden in 1900 cured a carcinoma on the tip of the nose by x-ray therapy. From the United States in 1902 Margaret Cleaves described the use of x-rays in the treatment of a patient with cancer of the uterine cervix, and Nicholas Senn published a paper in 1903 on x-rays for leukaemia. In 1912 Forssell published the results of treatment by filtered radium of forty cases of carcinoma of the cervix and soon evolved the method which was developed further by Heyman and which became known as the Stockholm Technique.

During and following World War I in Germany, Seitz and Wintz, unable to acquire radium, pioneered the development of higher voltage x-ray therapy with multiple field techniques. In France Regaud, Lacassagne and Coutard proceeded to lay the foundations of modern fractionated radiotherapy and emphasised its control by clinical observation and judgement. In Belgium too, with supplies of radium from the Congo, the clinical application of radium was well advanced.

In Britain, surgeons, while appreciating the possibilities of this new line of therapy, tended to allow their cases to be treated only after they had performed what they thought to be the necessary operation. Most, if not all, cases were sent to a surgeon who, full of hope, instructed the radiologist to shine on his rays after the knife had done its work. Employed in this manner the results of radiotherapy were not encouraging.

Britain meanwhile produced its golden age of surgeons—Arbuthnot Lane, Bland Sutton and Bonney, McEwen and Moynihan, Treves and Trotter amongst many others. These men not only made surgery less hazardous for their patients and passed on their knowledge to their assistants, but were ever ingeniously perfecting technical minutiae and pushing back the boundaries which enclosed surgical enterprise. Of the regions of the body, only