



Bronchial Carcinoma

An Integrated Approach
to Diagnosis and Management

Edited by
Michael Bates

Foreword by Sir Thomas Holmes Sellors

With 104 Figures, including 8 in colour

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Preface

In a condition of such complexity as bronchial carcinoma and at a time when the scientist's understanding of malignant disease is still incomplete, it is inevitable that views within the medical profession will proliferate. This book is an attempt to assemble these views in the light of 33 years of surgical experience and is intended for those specialists who will be concerned with the diagnosis and treatment of lung cancer in the foreseeable future.

The wide clinical experience of the contributing authors has enabled every aspect of this disease to be considered, with emphasis being placed on diagnostic techniques such as CT scanning and fine needle transpleural biopsy, as well as on the latest method of treatment by lasers.

Bronchial carcinoma remains the major cause of cancer death in the United Kingdom, accounting for 6% of all deaths. While the incidence has decreased slightly in the male population, there has been an equivalent increase in the female population.

For the last 40 years surgical removal has been advised as the treatment offering the best hope of a cure. During this time, excision by radical pneumonectomy has gradually given way to more conservative surgical procedures with improved long-term results. There has also been a growing realisation of the importance of the patient's own immunity to the disease. Artificial means of stimulating this immunity have been tried; however, recent studies using intrapleural injection of BCG both in America and in the United Kingdom have failed to confirm any improvement in the survival rate.

Since the introduction of the cobalt unit, and more recently of linear accelerators, many of the disadvantages and the morbidity previously associated with radiotherapy have been removed. The results of treatment with radiotherapy alone and in combination with surgery have been more encouraging. Oat or small cell carcinoma, in particular, has been resistant to successful treatment by surgery, radiotherapy or chemotherapy alone, but considerably improved results have been obtained by combining these methods of treatment. The success achieved with chemotherapy in the treatment of Hodgkin's disease and other lymphomas is being extended into the field of therapy for bronchial carcinoma.

Improved diagnostic techniques have greatly changed the management of this disease. The demonstration of subclinical metastases in

the brain, liver or bones by isotope scanning has helped to avoid surgery when other treatment would be more appropriate. Computerised axial tomography can reveal mediastinal node involvement and small pulmonary or pleural tumours not detected on routine tomography.

In 1974 pre-operative TNM staging became a routine assessment of the size of the primary tumour and the presence of metastases in intrathoracic lymph nodes and in distant organs.

The introduction of the flexible endoscope extended the limits of the rigid bronchoscope. The rigid instrument remains essential for assessing the state of the carina and the mobility of the main bronchi, while the flexible instrument allows a histological diagnosis to be made from peripheral and subsegmental lesions. If not obtained at bronchoscopy, sufficient material to effect a diagnosis can often be provided by transpleural biopsy under radiographic control.

Techniques of cell identification are improving, and individual cell types can be isolated with increasing accuracy from the neoplastic cells found in sputum and pleural fluid. There is the added advantage that this investigation can be carried out in the out-patient department. The routine screening of middle-aged males who are also smokers can result in a management problem when neoplastic cells are found in the sputum and yet the chest radiograph remains clear.

All these methods of investigation have significantly increased our appreciation of the need for different treatments for tumours of different cell types.

Mediastinoscopy has been performed as a routine procedure concurrent with bronchoscopy in many units. However, non-invasive CT scanning now can provide much of the information previously obtained at mediastinoscopy.

There has been little or no change in the common thoracic mode of clinical presentation of bronchial carcinoma, but there is now a wider appreciation of the extrathoracic manifestations, particularly of hormone disturbances shown by patients suffering from small cell carcinoma.

During recent years laser beams have been directed along the biopsy channel of a flexible endoscope to burn a path through a malignant bronchial obstruction. Potentially exciting work is being done with two types of laser: the Nd-YAG laser, which kills tumour cells through heat; and the argon rhodamine dye laser, used to activate haematoporphyrin given intravenously to label tumour cells and increase their absorption of laser energy.

Probably 60% of all thoracotomies for pulmonary conditions are performed on patients suffering from bronchial carcinoma. Now that secretions and suppuration are no longer major problems, the anaesthetic management of thoracic resection is relatively straightforward. However, post-thoracotomy pain remains a source of distress in the recovery period. Considerable success in relieving this pain is reported to follow the epidural injection of methadone and the application of a cryoprobe to the intercostal nerves adjacent to the thoracotomy incision. Less dramatic but more generally applicable is the use of

intercostal or paravertebral blocks, and continuous parenteral infusion of narcotic analgesics.

The chapters in this book deal with these subjects in detail, and because of the many disciplines represented it is hoped that they will provide a comprehensive study from which further progress against lung cancer can evolve.

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Foreword

Bronchial carcinoma has, within the last few decades, been increasing with alarming frequency until it has gained the unenviable reputation of being the most common form of cancer in man. Of the many predisposing and possible factors, cigarette smoking stands out as a major cause, though hormonal and immunological influences are receiving consideration.

This present work brings together all facets of the disease with each section being contributed by an experienced and recognised expert in his or her field and has been edited by a distinguished and highly experienced thoracic surgeon in Mr. Michael Bates. In a multi-disciplinary field, the balance and authority that has been achieved will make this a 'classic' for all those interested in and practising in the subject.

Bronchial carcinoma is not a single cell disease; its behaviour varies with the predominant cell involved, and when it comes to treatment, the course of action varies. Some cell forms give rise to early invasion of regional glands while others remain localised; it is these latter cases which can respond to excisional surgery. In the past the standard and early treatment was pneumonectomy when an absence of distant metastases and only local invasion could be proved, but unhappily only a small proportion of the patients diagnosed as having the disease could meet these criteria. The trends in surgical practice and results are fully described with the Editor's wide experience and show a tendency towards a more conservative approach where possible – lobectomy rather than pneumonectomy. Radiotherapy, alone or in conjunction with surgery, has generally proved disappointing except in palliation, but recent experiences with radiation combined with chemotherapy are showing promise.

When one thinks of the accounts given in text books of not too many years ago – a few paragraphs expressing little hope – the present work is a credit to those authors who have contributed so successfully to the understanding of the many problems that face us in contending with this unhappy disease.

Aylesbury, Buckinghamshire
August, 1984

Sir Thomas Holmes Sellors

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