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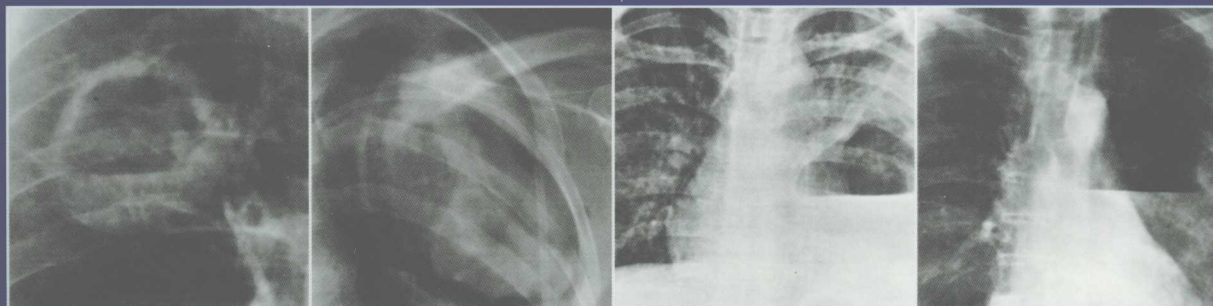
Plain Film Patterns
and Differential Diagnoses

胸部放射学

平片表现与鉴别诊断

第 5 版

James C. Reed



人民军医出版社

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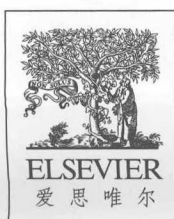
平片表现与鉴别诊断

第 5 版

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*To my wife, Sharon, and our children
James, Peter, Brent, and Cameron*

PREFACE TO THE FIFTH EDITION

The practice of chest radiology continues to evolve with rapid changes in technology and our understanding of diseases. I have continued to refer to the chest radiographic image as a plain film for simplicity. As a result of digital photography, the techniques for creating and viewing the chest radiograph are more variable than ever, but the basic principles requiring a high-quality image and careful interpretation still apply. The impact of CT on chest radiology has continued to expand with the technical advances of spiral and multi-detector CT, which have made CT angiography a reality. HRCT has also continued to have a greater impact on the diagnosis and management of diffuse lung diseases. The improved imaging of the diffuse diseases, combined with changes in the pathologic and clinical understanding of these diseases, has resulted in significant changes in the classification of diffuse lung diseases. Lung cancer detection is a continuing problem, but there are significant changes in the way lung cancer is detected, staged, and followed. Infectious diseases also remain a cause of more life-threatening complications. Since September 11, 2001, there are new threats in the form of biologic terror that have even impacted chest radiology. Anthrax previously has not been considered a likely human disease, but it is now included as an important cause of acute onset of mediastinal adenopathy and mediastinal widening. Continued study leads to ongoing improvements in the diagnosis and management of chest diseases. Chest radiology is a discipline that requires the mind of a detective and the ability to find answers to the unknown by careful review of the shadows.

James C. Reed, M.D.

PREFACE TO THE FOURTH EDITION

Progress in the diagnosis and treatment of chest diseases continues to expand the scope of chest radiology. In an effort to avoid confusing terminology I have reconsidered an old semantic concern for description of basic observations: The term *density* is correctly used to describe the mass of a substance per unit volume. The radiologist recognizes that an increase in tissue may cast a shadow or opacity that appears white on the film. Such a shadow is frequently described as a density, but density has an opposite meaning when it is used to describe film blackening or optical density. The term *density* has therefore been a recurring source of confusion. While *density* is still often used to describe a white abnormality on exams such as mammograms, the glossary of terms published by the Fleischner Society has shown a strong preference for the term *opacity*. New advances in our understanding of diffuse pulmonary diseases have also led to some updates in pathologic and radiologic descriptive terminology.

Our advancing knowledge of diseases such as AIDS continues to expand our understanding of the diversity of patterns of chest disease. Many common diseases including lung cancer, tuberculosis, and AIDS-related diseases produce a variety of plain film patterns. AIDS-related diseases are considered causes of mediastinal adenopathy, diffuse air-space disease, multifocal opacities, and hyperlucent abnormalities. The major technical advances to affect chest disease are in CT. High-resolution thin section CT has replaced bronchography for the diagnosis of bronchiectasis and has advanced our understanding of the patterns and distributions of diffuse pulmonary diseases. Single-breath hold spiral CT has reduced artifacts and provides a new area for further research. The plain film, however, continues to be the most frequently performed of all radiologic procedures, and while it appears to be simple to perform, it is often the most challenging of radiologic exams to interpret.

James C. Reed, M.D.

PREFACE TO THE THIRD EDITION

In the last decade we have seen the emergence of exciting new techniques and the appearance of new diseases. AIDS has profoundly affected many aspects of our society and the practice of medicine, including interpretation of the plain chest film. Computer technologies are changing the way we examine patients, and offer a host of new imaging options. Computed radiography is addressing some old technical problems and should provide better quality bedside plain films. High-resolution CT is very sensitive for confirming abnormalities that are only suspected from plain film or the clinical information, particularly fine reticular or nodular interstitial diseases and early emphysema. To optimize our use of these new technologies, we still need a thorough understanding of the diseases and their plain film patterns. This edition continues to emphasize plain film interpretation and uses radionuclide scans, ultrasound, CT, MR, and angiography to provide clarification of the patterns and to confirm specific diagnoses.

James C. Reed, M.D.

PREFACE TO THE SECOND EDITION

This book utilizes a unique format in order to walk the reader through the differential diagnoses of 23 common plain film patterns of chest disease.

Each chapter opens with one or more unidentified radiographs. A series of questions follow, all designed to help identify the pattern of disease presented on the film. For those desiring immediate answers, the legends for the introductory radiographs are at the end of each chapter. So, too, are the answers to the multiple choice, yes-no, and true-false questions.

Sandwiched between the presentation of the case at each chapter's beginning and the answers at the end are a tabular listing of differential considerations and a discussion of the problem case. The discussion follows a step-by-step approach to eliminating inappropriate diagnoses and arriving at the correct one or by suggesting that other radiology procedures and laboratory tests be performed, concluding with a summary. This section makes reference to several additional radiographs, all of which are fully identified and grouped after the discussion and summary.

It has been my intention to simulate within the confines of a book the radiologist's decision-making process of going from film to diagnosis. Although limitations of the format make it impossible to realistically reenact the process, it is hoped that your trip through these pages is both instructive and enjoyable.

The second edition of this book has expanded some of the differentials, and emphasized the impact of the newer modalities, particularly CT scanning, on the diagnosis of chest disease. While the role of MR appears to be limited mainly to the evaluation of the mediastinum, CT has impacted almost all of the patterns in chest radiology. While a number of cases have been added to demonstrate the use of CT, the emphasis of this text continues to be the plain film patterns and their differential diagnoses.

The reference list is also substantially expanded because of the continued rapid growth of the medical literature related to chest radiology. Since this is intended to be an introductory text, a large number of topics are considered in a simplistic manner. The reference list is intended to be used as a suggested reading list. This will provide the reader with a more comprehensive work on a particular entity.

James C. Reed, M.D.

PREFACE TO THE FIRST EDITION

This manual is designed to provide a comprehensive differential diagnosis for 23 of the most common radiologic patterns of chest disease. Each chapter is introduced with problem cases and a set of questions, followed by a tabular listing of the appropriate differential considerations. The discussion centers on the problem case and demonstrates how the radiologist can use additional radiologic procedures along with correlative clinical and laboratory data to narrow the differential diagnosis or to suggest a specific diagnosis.

The book aims to provide a thorough background in the differential diagnosis of chest disease for residents in radiology, internal medicine, pulmonary medicine, family medicine, and emergency medicine. It also offers the practicing radiologist an updated review of the radiologic patterns of chest disease and a concise reference on differential diagnosis.

ACKNOWLEDGMENTS

It is impossible to acknowledge adequately all of the sources of inspiration, background, and support for this text. It began when Captain Q. E. Crews, Jr., M.C., U.S.N., and Dr. Elias G. Theros appointed me to the faculty at the Armed Forces Institute of Pathology. Dr. Theros created a stimulating environment and inspired early interest in chest radiology. Many of the ideas in this text were developed in the rich and dynamic atmosphere of the APIP. My interaction with Drs. Theros, Madewell, Allman, Olmsted, and Korsower in radiology and Drs. Johnson, Hockholzer, Sobonya, Kagan-Hallet, and Daroca in pathology provided the framework on which this text has been built.

Preparation of the text and illustrations were accomplished during my tenure on the radiology faculty at Duke University. Special mention must be given to Dr. Charles E. Putman, who arranged for photographic support, David Page, who prepared the illustrations, Brenda Peele and Susan Morrison, who typed the text, and Dr. Lawrence Hedlund, whose editorial suggestions and proofreading were invaluable.

The list of friends providing support for a text cannot be complete, nor would enumeration express my gratitude adequately.

Finally, the completion of the text is due in no small measure to the untiring support and encouragement of my wife, Sharon.

James C Reed, M.D.

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CONTENTS

Preface to the Fifth Edition	vii
Preface to the Fourth Edition	ix
Preface to the Third Edition	xi
Preface to the Second Edition	xiii
Preface to the First Edition	xv

PART I

Chest Wall, Pleura, and Mediastinum

CHAPTER 1

Introduction / 3

CHAPTER 2

Chest Wall Lesions / 6

Questions / 7

Discussion / 8

Summary / 11

Answer Guide / 24

CHAPTER 3

Pleural and Subpleural Opacities / 25

Questions / 28

Discussion / 29

Summary / 34

Answer Guide / 46

CHAPTER 4

Pleural Effusions / 47

Questions / 50

Discussion / 53

Summary / 58

Answer Guide / 62

CHAPTER 5

Pleural Thickening and Pleural Calcification / 63

Questions / 65

Discussion / 66

Summary / 69

Answer Guide / 75

CHAPTER 6

Elevated Diaphragm / 76

Questions / 76

Discussion / 77

Summary / 80
Answer Guide / 83

CHAPTER 7

Shift of the Mediastinum / 84

Questions / 86
Discussion / 87
Summary / 90
Answer Guide / 96

CHAPTER 8

Widening of the Mediastinum / 97

Questions / 97
Discussion / 99
Summary / 102
Answer Guide / 111

CHAPTER 9

Anterior Mediastinal Mass / 112

Questions / 112
Discussion / 114
Summary / 118
Answer Guide / 130

CHAPTER 10

Middle Mediastinal Mass / 131

Questions / 133
Discussion / 135
Summary / 141
Answer Guide / 151

CHAPTER 11

Hilar Masses / 152

Questions / 153
Discussion / 154
Summary / 160
Answer Guide / 168

CHAPTER 12

Posterior Mediastinal Mass / 167

Questions / 168
Discussion / 170
Summary / 174
Answer Guide / 187

PART II

Pulmonary Opacities

CHAPTER 13

Atelectasis / 193

Questions / 194
Discussion / 196
Summary / 204
Answer Guide / 218

CHAPTER 14

Segmental and Lobar Opacities / 219

Questions / 220
Discussion / 221
Summary / 227
Answer Guide / 233

CHAPTER 15

Diffuse Air-Space Opacities / 234

Questions / 235
Discussion / 238
Summary / 249
Answer Guide / 258

CHAPTER 16

Multifocal Ill-Defined Opacities / 259

Questions / 260
Discussion / 262
Summary / 274
Answer Guide / 286

CHAPTER 17

Diffuse Fine Nodular Opacities / 287

Questions / 288
Discussion / 289
Summary / 294
Answer Guide / 303

CHAPTER 18

Fine Reticular Opacities / 304

Questions / 305
Discussion / 308
Summary / 315
Answer Guide / 325

CHAPTER 19

Coarse Reticular Opacities (Honeycomb Lung) / 326

Questions / 327
Discussion / 329
Summary / 335
Answer Guide / 341

CHAPTER 20

Solitary Pulmonary Nodule / 342

Questions / 345
Discussion / 349
Summary / 360
Answer Guide / 369

CHAPTER 21

Multiple Nodules and Masses / 370

Questions / 371
Discussion / 373
Summary / 378
Answer Guide / 383

PART III

Hyperlucent Abnormalities

CHAPTER 22

Hyperlucent Thorax / 387

Questions / 390

Discussion / 391

Summary / 396

Answer Guide / 405

CHAPTER 23

Solitary Lucent Defect / 406

Questions / 409

Discussion / 410

Summary / 418

Answer Guide / 426

CHAPTER 24

Multiple Lucent Lesions / 427

Questions / 429

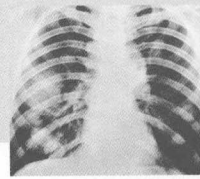
Discussion / 431

Summary / 437

Answer Guide / 445

Bibliography / 447

Index / 475



P A R T I

Chest Wall, Pleura, and Mediastinum

