

CHAPTER ONE

THE NORMAL CHEST 1

- The Airways and Pulmonary Ventilation 1
- The Pulmonary Vascular System 31
- The Bronchial Circulation 49
- Pulmonary Defense and Other Nonrespiratory Functions 50
- Development and Growth of the Lung 53
- Innervation of the Lung 56
- The Pleura 57
- The Lymphatic System 63
- The Thoracic Inlet 73
- The Mediastinum 73
- Control of Breathing 79
- The Respiratory Muscles 82
- The Chest Wall 86
- The Normal Lung: Radiography 88
- The Normal Lung: Computed Tomography 89

CHAPTER TWO

METHODS OF RADIOLOGIC INVESTIGATION 97

- Radiography 97
- Computed Tomography 99
- Magnetic Resonance Imaging 103
- Radionuclide Imaging 105
- Ultrasonography 109

CHAPTER THREE

RADIOLOGIC SIGNS OF CHEST DISEASE 111

- Increased Lung Density 111
- Decreased Lung Density 130
- Atelectasis 134
- Pleural Abnormalities 144

CONTENTS

CHAPTER FOUR

DIAGNOSTIC METHODS IN CHEST DISEASE 161

- The Clinical History 161
- Physical Examination 166
- Pathologic and Endoscopic Investigation 169
- Functional Investigation 176

CHAPTER FIVE

DEVELOPMENTAL AND METABOLIC LUNG DISEASE 188

- Bronchopulmonary Anomalies 189
- Anomalies of the Pulmonary Arteries 199
- Anomalies of the Pulmonary Veins 201
- Anomalies of Both Arteries and Veins 202
- Anomalies of the Pulmonary Lymphatics 204
- Miscellaneous Vascular Anomalies 205
- Metabolic Pulmonary Disease 206

CHAPTER SIX

INFECTIOUS DISEASE OF THE LUNGS 222

- General Considerations 223
- Aerobic and Facultative Bacteria 236
- Gram-Negative Bacteria 240
- Spirochetes 247
- Anaerobic Bacteria 248
- Mycobacteria 249
- Fungi and Actinomyces 267
- Viruses 292
- Mycoplasmas, Chlamydiae, and Rickettsiae 304
- Protozoa 309
- Helminths 312

CHAPTER SEVEN

PULMONARY NEOPLASMS 337

- Pulmonary Carcinoma 338
- Neuroendocrine Neoplasms 366
- Miscellaneous Epithelial Tumors 371
- Lymphoproliferative Disorders and Leukemia 377
- Mesenchymal Neoplasms 393
- Neoplasms of Uncertain Histogenesis 400
- Non-neoplastic Tumor-like Lesions 401
- Secondary Neoplasms 402

CHAPTER EIGHT

PULMONARY MANIFESTATIONS OF HIV INFECTION 423

- Pulmonary Infection 423
- Pulmonary Neoplasia 435
- Miscellaneous Pulmonary Abnormalities 438

CHAPTER NINE

CHRONIC INTERSTITIAL LUNG DISEASE 445

- Sarcoidosis 445
- Langerhans Cell Histiocytosis 456
- Lymphangiomyomatosis 459
- Neurofibromatosis 461
- Idiopathic Interstitial Pneumonia 462

CHAPTER TEN

IMMUNOLOGIC LUNG DISEASE 481

- Connective Tissue Disease 481
- Vasculitis 495
- Organic Dust Pulmonary Disease 505
- Eosinophilic Lung Disease 511
- Pulmonary Hemorrhage 514

CHAPTER ELEVEN

TRANSPLANTATION 525

- Lung and Heart-Lung Transplantation 525
- Bone Marrow Transplantation 534
- Liver Transplantation 537

CHAPTER TWELVE

EMBOLIC AND THROMBOTIC DISEASES OF THE LUNGS 542

- Pulmonary Thrombosis 542
- Pulmonary Thromboembolism 543
- Septic Thromboembolism 564
- Pulmonary Manifestations of Sickle Cell Disease 564
- Emboli of Extravascular Tissue and Secretions 565
- Emboli of Foreign Material 569

CHAPTER THIRTEEN

PULMONARY HYPERTENSION 581

- General Features of Pulmonary Hypertension 581
- Pulmonary Arterial Hypertension 587
- Pulmonary Venous Hypertension 592
- Pulmonary Hypertension Caused by Diseases of the Respiratory System and/or Hypoxemia 595
- Pulmonary Hypertension Caused by Chronic Thrombotic and/or Embolic Disease 596
- Pulmonary Hypertension Caused by Disorders Directly Affecting the Pulmonary Vasculature 598

CHAPTER FOURTEEN

PULMONARY EDEMA 603

- General Pathogenetic Features 603
- Pulmonary Edema Associated with Elevated Microvascular Pressure 607
- Pulmonary Edema Associated with Normal Microvascular Pressure 614

CHAPTER FIFTEEN

DISEASE OF THE AIRWAYS 627

- Obstructive Disease of the Upper Airways 628
- Obstructive Sleep Apnea 636
- Asthma 643
- Chronic Obstructive Pulmonary Disease 660
- Cystic Fibrosis 676
- Bronchiectasis 680
- Broncholithiasis 687
- Bronchial Fistulas 687
- Bronchiolitis 687

C H A P T E R S I X T E E N

PULMONARY DISEASE CAUSED BY INHALED INORGANIC DUST 714

- International Classification of Radiographs of the
Pneumoconioses 715
- Silica 716
- Coal and Carbon 720
- Asbestos 724
- Other Silicates 733
- Inert Radiopaque Dust 735
- Miscellaneous Inorganic Dust 736

C H A P T E R S E V E N T E E N

PULMONARY DISEASE CAUSED BY ASPIRATION AND INHALED GASES 744

- Aspiration Lung Injury 744
- Toxic Gas- and Aerosol-Induced Lung Injury 754
- Bronchopulmonary Disease Associated with
Burns 759

C H A P T E R E I G H T E E N

PULMONARY DISEASE CAUSED BY DRUGS, POISONS, AND IRRADIATION 764

- Drugs 764
- Poisons 780
- Irradiation 782

C H A P T E R N I N E T E E N

TRAUMATIC CHEST INJURY 792

- Effects of Nonpenetrating Trauma on the
Lungs 792
- Effects of Nonpenetrating Trauma on the
Pleura 795
- Effects of Nonpenetrating Trauma on the
Mediastinum 796
- Effects of Nonpenetrating Trauma on the Chest
Wall and Diaphragm 799
- Effects of Penetrating Trauma on the Thorax 802
- Complications of Thoracic Surgery 803
- Complications of Nonthoracic Surgery 809
- Complications of Therapeutic Procedures 810

CHAPTER TWENTY

PLEURAL DISEASE 819

- Pleural Effusion 819
- Specific Causes of Pleural Effusion 821
- Chylothorax 828
- Pneumothorax 828
- Pleural Fibrosis 830
- Pleural Neoplasms 835

CHAPTER TWENTY-ONE

MEDIASTINAL DISEASE 848

- Mediastinitis 848
- Pneumomediastinum 852
- Mediastinal Hemorrhage 856
- Mediastinal Masses 856

CHAPTER TWENTY-TWO

**DISEASE OF THE DIAPHRAGM AND
CHEST WALL 897**

- The Diaphragm 897
- The Chest Wall 903

CHAPTER TWENTY-THREE

**RESPIRATORY DISEASE ASSOCIATED WITH A
NORMAL RADIOGRAPH 912**

- Pulmonary Parenchymal, Airway, and Vascular
Disease Associated with a Normal
Radiograph 912
- Pleural Disease Associated with a Normal
Radiograph 913
- Alveolar Hypoventilation 913
- Alveolar Hyperventilation 921
- Methemoglobinemia 922
- Carbon Monoxide Poisoning 922

INDEX 925