Preface

Perhaps more than in any other setting, the interpretation of radiological images in postoperative and intensive care patients requires an interdisciplinary exchange of information, and cooperation between the radiologist and the clinical team. The low specificity of many findings—especially in bedside chest radiographs and postoperative abdominal studies—does not diminish the value of intensive care radiology. Regular and active interdisciplinary information sharing will contribute greatly to accurate image interpretation and resulting management decisions. This book places special emphasis, therefore, on the differential diagnosis of morphologic findings and their interpretation within the clinical context, and on accurately discriminating between normal and abnormal findings.

The quality of radiographic images has improved dramatically in recent years as a result of digital technology. Computed tomography (CT) has assumed an expanding role owing to its rapid availability, short examination times, new indications, and its unrivaled diagnostic accuracy and efficiency. This efficiency results not only from short scan times, but also from the ability to image the body in arbitrary planes of section.

Consistent with my own interests, the reader will notice a particular emphasis on illustrative radiographic and CT images. I am indebted to all my friends and colleagues who contributed to this book, whether in the form of manuscripts or images. I thank the staff at Thieme Medical Publishers—especially Dr. S. Steindl and Dr. C. Urbanowicz—for their patience and help in bringing this project to completion. I am grateful to Prof. U. Moedder for his personal support. I thank my husband, and especially my children, for their support, their patience, and their understanding for the many hours of hard work.

I hope that this book will help radiologists, residents in radiology, and even clinicians to interpret the often difficult and nonspecific findings in children and adults, and that it will help to advance interdisciplinary cooperation in the diagnostic imaging of intensive care unit patients.

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Abbreviations

ALI  acute lung injury
AP   anteroposterior
ARDS adult (acute) respiratory distress syndrome
ATS  American Thoracic Society
AV   arteriovenous
BAL  bronchoalveolar lavage
BPD  bronchopulmonary dysplasia
BPF  bronchopleural fistula
CAP  community-acquired pneumonia
CAPD chronic abdominal peritoneal dialysis
CCAM congenital cystic adenomatoid malformation
CDH  congenital diaphragmatic hernia
CK   creatine kinase
CLL  chronic lymphoblastoid (lymphocytic) leukemia
CMV cytomegalovirus
COP  cryptogenic organizing pneumonia
COPD chronic obstructive pulmonary disease
CPAP continuous positive airway pressure
CPIS Clinical Pulmonary Infection Score
CR computed radiography
CT computed tomography
CTDI computed tomography dose index
CVC central venous catheter
DAD diffuse alveolar lavage
DAP dose-area product
DLP dose-length product
DR digital radiography
DSA digital subtraction angiography
EBV Epstein–Barr virus
EGG electrocardiography
ECMO extracorporeal membrane oxygenation
EPF esophagogastroduodenostomy
ETT endotracheal tube
FFD film-focus distance
FRC functional residual capacity
GI gastrointestinal
GvHD graft-versus-host disease
HFV high-frequency ventilation
HIV human immunodeficiency virus
HMD hyaline membrane disease

HPV hypertrophic pyloric stenosis
HRCT high-resolution computed tomography
IAPB intra-aortic balloon pump
ICD implantable cardioverter defibrillator
ICRP International Commission on Radiological Protection
ICU intensive care unit
IPPP intermittent positive pressure breathing
IRDS infantile respiratory distress syndrome
IVP intravenous pyelogram
LDH lactate dehydrogenase
LIS Lung Injury Score
MAS meconium aspiration syndrome
MCL midclavicular line
MPR multiplanar reformation
MRI magnetic resonance imaging
MRSA methicillin-resistant Staphylococcus aureus
NEC necrotizing enterocolitis
NOMI nonocclusive mesenteric ischemia
NSIP nonspecific interstitial pneumonia
PA posterolateral
PBB protected brush bronchoscopy
PCN percutaneous nephrostomy
PCP pneumocystis pneumonia
PD pancreaticoduodenectomy
PE pulmonary embolism
PEEP positive end-expiratory pressure
PEG percutaneous endoscopic gastronomy
PG prostaglandin
PIE pulmonary interstitial emphysema
RAO right anterior oblique
RSV respiratory syncytial virus
SDD surfactant deficiency disease
SLE systemic lupus erythmatosus
TTN transient tachypnea of the newborn
TUR transurethral resection
UAC umbilical artery catheter
UVC umbilical vein catheter
VAP ventilator-associated pneumonia
VILI ventilator-induced lung injury
VZV varicella-zoster virus