

# Contents

<b>Part I: Technological Approach to Cardiothoracic Imaging . . . . .</b>	<b>1</b>
1 From Sixteen Slices to Nowadays – Cardiothoracic Imaging with CT THOMAS FLOHR and BERND OHNESORGE . . . . .	3
2 Cardiac Gating THOMAS FLOHR and BERND OHNESORGE . . . . .	23
3 Cardiothoracic Image Postprocessing THOMAS FLOHR and BERND OHNESORGE . . . . .	37
4 Contrast Medium Utilization DOMINIK FLEISCHMANN and MARGARET C. C. LIN . . . . .	53
5 Dose Reduction in Chest CT JOHN R. MAYO and JOHN ALDRICH . . . . .	65
6 Acquisition Protocols JACQUES KIRSCH, MICHAËL DUPONT, and XAVIER HAMOIR . . . . .	79
<b>Part II: Anatomical and Physiological Approach to Cardiothoracic Imaging . . . . .</b>	<b>87</b>
7 Cardiac and Coronary Artery Anatomy and Physiology JEAN-Louis SABLAYROLLES, ERIK BOUVIER, JEAN MARC TRAUTENAERE, and JACQUES FEIGNOUX . . . . .	89
<b>Part III: Heart-Lung Interactions . . . . .</b>	<b>107</b>
8 Physiological Interactions FRANCOIS LAURENT and MICHEL MONTAUDON . . . . .	109
9 Drug-Induced Respiratory Disease in Cardiac Patients PHILIPPE CAMUS, CLIO CAMUS, and PASCAL FOUCHER . . . . .	131

**Part IV: Medical Applications of Integrated Cardiothoracic Imaging**

<i>Cardiac Complications of Thoracic Disorders</i> . . . . .	159
<b>10 Diseases of the Pulmonary Circulation</b>	
MARTINE RÉMY-JARDIN, ANDREI-BODGAN GORGOS, VITTORIO PANSINI, JEAN-BAPTISTE FAIVRE, and JACQUES RÉMY . . . . .	161
<b>11 COPD and Cardiac Comorbidities</b>	
JACQUES RÉMY, ANNE-LISE HACHULLA, and JEAN-BAPTISTE FAIVRE . . . . .	175
<b>12 Immunologic Lung Diseases</b>	
DELPHINE GAMONDÈS and DIDIER REVEL . . . . .	197
<b>13 Sleep-Related Hypoventilation/Hypoxemic Syndromes (SRHH)</b>	
JACQUES RÉMY and NUNZIA TACELLI . . . . .	203
 <i>Thoracic Consequences of Cardiac Diseases</i> . . . . .	207
<b>14 Imaging Findings Associated with Left-Sided Cardiac Dysfunction</b>	
NICOLA SVERZELLATI and DAVID M. HANSELL . . . . .	209
 <i>MDCT Management of Ambiguous Symptoms</i> . . . . .	219
<b>15 Evaluation of Chest Pain, Hemoptysis and Dyspnea</b>	
SEUNG MIN YOO and CHARLES S. WHITE . . . . .	221
 <i>Evaluation of Asymptomatic Cardiac Diseases</i> . . . . .	239
<b>16 Lesions of Proximal Coronary Arteries</b>	
FILIPPO CADEMARTIRI, LUDOVICO LA GRUTTA, ANSELMO ALESSANDRO PALUMBO, ERICA MAFFEI, and NICO R. MOLLET . . . . .	241
<b>17 Myocardial Infarction</b>	
CHRISTOPH R. BECKER . . . . .	251
<b>18 Aortic Bicuspidia, Silent Ductus Arteriosus</b>	
SALAH D. QANADLI and ELENA RIZZO. . . . .	257
<b>19 Cardiac Calcifications</b>	
ANNEMARIEKE RUTTEN and MATHIAS PROKOP . . . . .	269

20	Left Superior Vena Cava THIERRY COUVREUR and BENOÎT GHAYE . . . . .	289
21	Partial Anomalous Venous Return BENOÎT GHAYE and THIERRY COUVREUR . . . . .	307
22	Pulmonary Valvular Stenosis JACQUES RÉMY and KAHIMANO BOROTO . . . . .	325
23	Right-to-Left Shunts LOIC BOUSSEL, PHILIPPE DOUEK, and BRETT ELICKER . . . . .	327
 <i>Diseases of the Pericardium</i> . . . . .		339
24	MDCT: Evaluation of Congenital and Acquired Diseases of the Pericardium PAUL STOLZMANN, BORUT MARINCEK, and HATEM ALKADHI . . . . .	341
 <i>Diseases of the Lung</i> . . . . .		361
25	Lung Perfusion ERNST KLOTZ, JACQUES RÉMY, FRANÇOIS PONTANA, JEAN-BAPTISTE FAIVRE, VITTORIO PANSINI, and MARTINE REMY-JARDIN . . . . .	363
 <i>Miscellaneous</i> . . . . .		379
26	Pulmonary Embolism from Cardiac Origin LORENZO BONOMO, ANNA RITA LARICI, FABIO MAGGI, LAURA MENCHINI, ANDREA CAULO, and MARIA LUIGIA STORTO . . . . .	381
27	Pectus Excavatum and the Heart LORENZO BONOMO, GIUSEPPE MACIS, and ANDREA CAULO . . . . .	397
28	Thoracic Surgery and Asymptomatic Coronary Artery Disease JEAN-PIERRE LAISSY . . . . .	411
29	Diseases Developing Coronaro-Bronchial Anastomoses JEAN-PIERRE LAISSY . . . . .	417
 Subject Index . . . . .		425
 List of Contributors . . . . .		439