

1. Record Nr.	UNINA9910502664303321
Titolo	Imaging of inflammation and infection in cardiovascular diseases // edited by Federico Caobelli
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-81131-X
Descrizione fisica	1 online resource (274 pages)
Disciplina	616.12075
Soggetti	Heart - Imaging Heart - Infections Malalties cardiovasculars Malalties del cor Diagnòstic per la imatge Infeccions Inflamació Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Preface -- Contents -- Part I: Challenges in Patient Preparation -- 1: Challenges in Patient Preparation -- 1.1 Introduction -- 1.2 Prolonged Intervals of Fasting -- 1.3 Dietary Modifications -- 1.4 Pharmacologic Approaches -- 1.5 Conclusion -- References -- Part II: Non-ischemic Diseases -- 2: Cardiac Sarcoidosis -- 2.1 Introduction -- 2.2 Screening for Cardiac Sarcoidosis -- 2.3 Diagnosis -- 2.4 Endomyocardial Biopsy: Imaging Guidance -- 2.5 CMR for Diagnosis/CMR Imaging Protocol -- 2.6 Late Gadolinium Enhancement (LGE) -- 2.7 Imaging Myocardial Inflammation and Quantitative Tissue Characterization with CMR T1 and T2 Mapping -- 2.8 Additional CMR Findings Suggestive of Cardiac Sarcoidosis -- 2.9 Differential Diagnosis -- 2.10 Treatment: Anti-Inflammatory Therapy -- 2.11 CMR for Arrhythmogenic Risk Stratification/ICD -- 2.12 Positron Emission Tomography -- 2.13 Positron Emission Tomography with Tracers Other than 18F-FDG -- 2.14 Prognosis --

2.15 Follow-up and Monitoring of Anti-Inflammatory Response --
2.16 Hybrid PET-CMR Imaging -- 2.17 Outlook -- 2.18 Conclusion
-- References -- 3: Cardiac Amyloidosis -- 3.1 Introduction -- 3.1.1 Different Phenotypes of Cardiac Amyloidosis -- 3.1.1.1 AL Amyloidosis -- 3.1.1.2 ATTR Amyloidosis -- 3.1.2 Screening for Cardiac Amyloidosis -- 3.2 Diagnosis -- 3.2.1 Endomyocardial Biopsy -- 3.2.2 Cardiac Magnetic Resonance (CMR) Imaging -- 3.2.2.1 CMR Diagnosis and Imaging Protocol -- 3.2.2.2 Late Gadolinium Enhancement (LGE) -- 3.2.2.3 Quantitative Tissue Characterization with CMR Native T1, T2 and ECV Mapping -- 3.2.2.4 Differential Diagnosis of AL vs. ATTR Amyloid -- 3.2.3 Scintigraphy -- 3.2.3.1 Bone Avid Radiotracers -- Imaging Protocols and Interpretation -- Diagnostic Accuracy -- 3.2.3.2 Innervation Radiotracers -- 3.2.4 Positron Emission Tomography (PET).
3.2.5 Hybrid Imaging: PET/MRI -- 3.2.6 Diagnostic Algorithm for Diagnosis and Sub-Typing of Cardiac Amyloidosis -- 3.3 Treatment -- 3.4 Prognosis -- 3.5 Conclusion -- References -- Part III: Ischemic Diseases -- 4: Molecular Imaging of Vulnerable Plaque -- 4.1 Introduction -- 4.2 Biology and Pathogenesis of Atherosclerosis -- 4.2.1 History -- 4.2.2 Mechanisms of Atherosclerosis -- 4.2.2.1 Initiation of Atherosclerosis -- Vascular Endothelium and Atherosclerosis -- Hemodynamics Forces in Atherosclerosis -- Low-Density Lipoprotein Cholesterol -- Surface Adhesion Molecules -- Foam Cells Formation -- Progression of Atherosclerosis -- Smooth Muscle Cells and Atherosclerosis -- Calcification -- Plaque Neoangiogenesis -- Innate Immunity Cells in Atherosclerosis -- Adaptive Immunity in Atherosclerosis -- 4.2.3 Complication of Atherosclerosis -- 4.2.3.1 Inducible Ischemia -- 4.2.3.2 Plaque Rupture -- 4.2.3.3 Plaque Erosion -- 4.3 Metabolism of Glucose in Atherosclerosis -- 4.3.1 Glucose and Immune Cells -- 4.3.2 Imaging Inflammation in Atherosclerosis Using Glucose Metabolism -- 4.4 Targeting Chemokine Receptor Expression in Vulnerable Plaque -- 4.4.1 Technological Advancements: PET/MRI and Chemokine Receptor -- 4.4.2 Radiopharmaceutical Agents Advancements: Theragnostic and Chemochine Receptor -- 4.5 Targeting Microcalcification in Atherosclerosis -- 4.5.1 Atherosclerotic Plaque Calcium Deposition -- 4.5.2 Cardiovascular Risk Quantification -- 4.5.3 High/Risk Coronary Plaque Evaluation -- 4.5.4 Atherosclerotic Plaque Composition/Activity Assessment -- 4.6 Targeting Neovascularization in Atherosclerosis -- 4.7 Targeting SSRT-2 Receptor Expression in Atherosclerosis with DOTA-Derivatives-PET -- 4.8 Summary -- References -- 5: Post-Infarction Inflammatory Alterations -- 5.1 General Introduction.
5.2 Biology of Ventricular Remodeling -- 5.2.1 Pathobiology of Ventricular Remodeling Post-MI -- 5.2.2 The Inflammatory Response -- 5.2.2.1 Resident Inflammatory Cells -- Mast Cells -- Macrophages -- 5.2.2.2 Infiltrating Inflammatory Cells -- Polymorphonuclear Leukocytes -- Monocytes and Macrophages -- Dendritic Cells -- T and B Lymphocytes -- 5.2.2.3 Cardiomyocytes and ECM -- 5.2.3 Animal Models to Study Post-AMI Inflammation -- 5.2.3.1 Small Animal Models -- Open Chest -- Coronary Artery Ligation -- Topical Application of FeCl3 -- Closed Chest -- Isoproterenol Injection -- 5.2.3.2 Large Animal Models -- Open Chest -- Coronary Artery Ligation -- Gradual Constriction -- Hydraulic Occluder -- Topical Application of FeCl3 -- Closed Chest -- Balloon Inflation -- Embolization -- Endothelial Electrical Injury -- 5.3 The Role of Molecular Imaging -- 5.3.1 Cardiac MRI -- 5.3.2 Single-Photon Emission Computed Tomography -- 5.3.3 Positron Emission

Tomography -- 5.4 Imaging Targets -- 5.4.1 Metabolic Activity --
5.4.2 Labeled Cells -- 5.4.3 Membrane Receptors -- 5.4.4 Somatostatin Receptors -- 5.4.5 Mannose Receptor -- 5.4.6 Folate Receptor -- 5.4.7 Translocator Protein -- 5.4.8 Glucagon-like Peptide-1 Receptor (GLP-1R) -- 5.4.9 Chemokine Receptors -- 5.4.10 Lymphocyte Markers -- 5.4.10.1 Adhesion Molecules -- 5.4.10.2 Extracellular (Matrix) Components -- 5.5 Hybrid Imaging: The Added Value of Hybrid Imaging -- 5.6 Concluding Remarks -- References -- Part IV: Infection -- 6: Infection: Pericarditis -- 6.1 Pericardial Anatomy -- 6.2 Pericardial Pathologies -- 6.3 Aetiology and Pathophysiology -- 6.4 Clinical Manifestations and Diagnosis -- 6.5 Computed Tomography -- 6.6 Cardiovascular Magnetic Resonance (CMR) -- 6.6.1 Typical CMR Protocol for the Evaluation of Pericardial Disease -- 6.6.2 CMR and Acute Pericarditis.
6.6.3 CMR and Pericardial Effusions -- 6.6.4 CMR and Pericardial Constriction -- 6.6.5 Constrictive-Effusive Pericarditis -- 6.7 Molecular Imaging -- 6.8 Basics of Treatment -- 6.9 Conclusion -- References -- 7: Infection: Myocarditis -- 7.1 Introduction -- 7.2 Aetiology and Pathogenesis -- 7.3 From Acute Myocarditis to Chronic Inflammatory Cardiomyopathy and Heart Failure -- 7.4 Clinical Presentations and Diagnosis -- 7.5 Endomyocardial Biopsy -- 7.6 Cardiovascular Magnetic Resonance (CMR) -- 7.7 Infectious Inflammatory Cardiomyopathy -- 7.7.1 Idiopathic/Post-Viral Myocarditis -- 7.8 Coronavirus Disease-2019 (COVID-19) and Myocarditis -- 7.9 Non-Infectious Inflammatory Cardiomyopathy -- 7.9.1 Connective Tissue Disease -- 7.9.1.1 Systemic Lupus Erythematosus -- 7.9.1.2 Rheumatoid Arthritis -- 7.9.1.3 Systemic Sclerosis/Systemic Scleroderma -- 7.9.1.4 Behçet's Disease -- 7.9.1.5 Polyarteritis Nodosa -- 7.10 Eosinophilic Myocarditis/Endomyocardial fibrosis -- 7.10.1 EGPA -- 7.10.2 Infectious Endomyocarditis and Endomyocardial Fibrosis -- 7.10.3 Haematological -- 7.11 Drug-Induced or Toxic Myocarditis -- 7.12 Inflammatory Myositis -- 7.13 Giant Cell Myocarditis -- 7.14 Genetic Causes -- 7.15 Molecular Imaging -- 7.16 Hybrid Imaging -- 7.17 Summary -- References -- 8: Cardiac Devices Infection -- 8.1 Introduction -- 8.2 Scintigraphy in Cardiac Devices Infection -- 8.2.1 Radiolabelling of White Blood Cells with ^{99m}Tc -HMPAO or ^{111}In -oxine -- 8.2.2 Image Acquisition -- 8.2.3 Image Interpretation -- 8.2.4 Radiolabelled WBC Scintigraphy of CIED Infection -- 8.2.5 Radiolabelled WBC Imaging of Left Ventricular Assist Devices Infection -- 8.2.6 Merits and Limitations of Radiolabelled WBC Scintigraphy in Cardiac Devices Infection: Alternative SPECT Tracers -- 8.3 FDG PET/CT Imaging of Cardiac Devices Infection.
8.3.1 Patient Preparation -- 8.3.1.1 Suppression of Myocardial FDG Uptake -- 8.3.1.2 Withdrawal of Medications -- 8.3.2 Image Acquisition and Interpretation -- 8.3.3 FDG PET/CT Imaging of CIED Infection -- 8.3.4 FDG PET/CT Imaging of LVAD Infection -- 8.3.5 FDG PET/CT for Extra-Cardiac Disease in Patients Assessed for Cardiac Devices Infection -- 8.4 Comparative Performance of Radionuclide WBC Scintigraphy and FDG PET/CT in Cardiac Devices Infection -- 8.5 Conclusion -- References -- 9: Endocarditis -- 9.1 Introduction -- 9.2 Single Photon Emission Tomography (SPECT) -- 9.2.1 ^{67}Ga -citrate Scintigraphy -- 9.2.2 Labelled Leukocytes Scintigraphy -- 9.2.3 Other SPECT Tracers -- 9.3 Positron Emission Tomography (PET) -- 9.4 Concluding Remarks -- References.