Contents

Section–A Approach to the Patient 1–17

Chapter 1 The cardiac history 3

- Chief complaints 3
- Dyspnea 3
- Orthopnea 4
- Paroxysmal nocturnal dyspnea (PND) 4
- Angina pectoris 5
- Palpitation 6
- Syncope 7
- Hemoptysis 8

Chapter 2 General examination in relation to cardiovascular system (CVS) 9

- Head to foot examination 9

Chapter 3 Examination proforma 11

- General examination 11
- Examination of the cardiovascular system 11

Chapter 4 Anatomy of heart and coronary circulation 14

- Embryology of the heart 14
- Anatomy of the heart 14
- Coronary circulation 15
- Venous drainage of the heart 16
- Lymphatic drainage of the heart 16
- Nerve supply of the heart 16

Section–B Cardiovascular System 19–63

Chapter 5 Arterial pulse 21

- Importance 21
- Method of palpation of the right radial artery 21
- Assessment of arterial pulse 21
- Rhythm 23
- Pulse volume 24

- Pulse character 24
- Pulsus bisferiens 26
- Pulsus alternans 26
- Pulsus bigemini 27
- Pulsus trigemini 27
- Pulsus paradoxus 27
- Reverse pulsus paradoxus 28
- Condition of vessel wall 28
- Examination of peripheral pulses 29
- Radiofemoral delay 29
- Grading of the arterial pulsation 29

Chapter 6 Blood pressure 30

- Examination of blood pressure 30

Chapter 7 Jugular venous pulse and jugular venous pressure 32

- Jugular venous pressure 32
- Prerequisites in examination of JVP 32
- JVP as indicator of mean right atrial pressure 32
- Causes of elevated JVP 33
- Causes of fall in JVP 33
- Jugular venous pulse 34

Chapter 8 Inspection of precordium 37

Chapter 9 Palpation 39

- Apical impulse 39
- Causes of right ventricular enlargement 41

Chapter 10 Percussion of the heart 43

Chapter 11 Auscultation 44

Chapter 12 First heart sound (S_1) 46

Chapter 13 Second heart sound (S_2) 48

- Loud S_2 48
- Soft S_2 may be due to soft A_2 or soft P_2 48
- Single S_2 49

- Splitting of S_2 49
- Types of split S_2 50

Chapter 14 Third heart sound (S_3) 51

Chapter 15 Fourth heart sound (S_4) 52

- S_4—atrial contraction sound 52

Chapter 16 Ejection clicks 54

Chapter 17 Heart murmurs 56

- Systolic murmurs 57
- Diastolic murmurs 58
- Continuous murmur 59
- To and fro murmur (biphasic murmur) 61
- Systolic–diastolic murmur 62
- Innocent murmurs 62
- Functional murmurs 62
- Pansystolic murmur (PSM) 63

Section–C Cardiovascular system and related diseases 65–212

Chapter 18 Acute rheumatic fever (ARF) 67

Chapter 19 Infective endocarditis 72

- Acute endocarditis 72
- Prosthetic valve endocarditis (PVE) 73
- Endocarditis occurring among injection drug users 73

Chapter 20 Mitral stenosis (MS) 77

- Juvenile mitral stenosis 78
- Pulmonary edema 79
- Auscultation 79
- Atrial myxoma 82

Chapter 21 Mitral regurgitation (MR) 84

- Mitral regurgitation 84

Chapter 22 Aortic stenosis (AS) 88
- Bicuspid aortic valve disease 88
- Silent AS 90

Chapter 23 Aortic regurgitation (AR) 93
- Aortic valve involvement 93
- Murmur 95

Chapter 24 Tricuspid stenosis (TS) and tricuspid regurgitation (TR) 98
- Tricuspid stenosis (TS) 98
- When to entertain the diagnosis of TS 98
- Tricuspid regurgitation (TR) 99

Chapter 25 Pulmonary stenosis (PS) and pulmonary regurgitation (PR) 101
- Pulmonary stenosis (PS) 101
- Pulmonary regurgitation (PR) 102

Chapter 26 Pulmonary hypertension 104

Chapter 27 Mitral valve prolapse (MVP) 107
- Synonyms 107

Chapter 28 Atrial septal defect (ASD) 109

Chapter 29 Ventricular septal defect (VSD) 112
- Ventricular septal defect (VSD) 112

Chapter 30 Patent ductus arteriosus (PDA) 115

Chapter 31 Tetralogy of Fallot (TOF) 117

Chapter 32 Eisenmenger's syndrome 121

Chapter 33 Coarctation of the aorta 123
- Investigations 124
- Chest radiograph 125
- Doppler echocardiography 125

Chapter 34 Other congenital heart diseases 127
- Malpositions of the heart 127

- Total anomalous pulmonary venous connection (TAPVC) 128
- Partial anomalous pulmonary venous connection (PAPVC) 128

Chapter 35 Heart failure (HF) 132

- Classification of cardiac failure 132
- Right and left-sided heart failure and congestive cardiac failure 133
- Forward and backward heart failure 133
- Systolic and diastolic failure 133
- Left ventricular remodeling 134
- Paroxysmal nocturnal dyspnea (PND) 134
- Cheyne-stokes respiration 134
- Drugs for heart failure 138

Chapter 36 Pulmonary thromboembolism (acute cor pulmonale) 140

- Risk factors for deep vein thrombosis 140

Chapter 37 Cor pulmonale (pulmonary heart disease) 144

Chapter 38 Systemic hypertension 148

- Hypertensive crises 148
- Clinical presentation 150

Chapter 39 Ischemic heart disease 154

- Stable angina pectoris 154
- Asymptomatic (silent) ischemia 158

Chapter 40 ST-segment elevation myocardial infarction (STEMI) 159

- Serum cardiac biomarkers 161

Chapter 41 Unstable angina and non-ST-segment elevation myocardial infarction 168

- NSTEMI 168
- Prinzmetal's variant angina 171

Chapter 42 Arrhythmias 172
- Tachyarrhythmias 172
- Bradyarrhythmias 181

Chapter 43 Conduction disorders of the heart 185
- Right bundle branch block (RBBB) 185
- Left bundle branch block (LBBB) 186
- Hemiblocks (fascicular blocks) 187

Chapter 44 Pericardial diseases 189
- Pericarditis 189
- Cardiac tamponade 192
- Chronic constrictive pericarditis 193

Chapter 45 Myocarditis 195

Chapter 46 Cardiomyopathy 198
- Types of cardiomyopathy 198
- Dilated cardiomyopathy 198
- Restrictive (obliterative) cardiomyopathy 200
- Hypertrophic obstructive cardiomyopathy (HCM) 201

Chapter 47 Diseases of the aorta 203
- Aortic aneurysm 203
- Classification aneurysms 203
- Thoracic aortic aneurysms 204
- Abdominal aortic aneurysms 205
- Aortic dissection 206
- Aortitis 206

Chapter 48 Cardiac manifestations of systemic disease 209

Chapter 49 Neoplastic diseases of the heart 211
- Primary tumors 211
- Other benign tumors 212

Section–D Investigations in Cardiovascular System (CVS) 213–229

Chapter 50 The electrocardiogram 215
- ECG waveforms and intervals 215

Chapter 51 Noninvasive cardiac imaging 221

- Echocardiography 221
- Radionuclide imaging 222
- MRI/CT imaging 222

Chapter 52 Stress tests 224

Chapter 53 Cardiac catheterization 226

- Cardiac catheterization 226

Index 231