

SECTION 1 Cardiovascular Anatomy and Physiology Review 1

1 Cardiac Anatomy 2

2 Cardiac Vascular Connections, Anatomy, and Ultrasound Imaging 5

3 Cardiac Physiology 17

**SECTION 2 Handheld Echocardiography Devices and Cardiac Imaging
Techniques 21**

4 Handheld Echocardiographic Devices and Imaging Features 22

*5 How to Perform Ultrasound of the Heart and its Arterial
and Venous Connections 25*

6 Normal Echocardiogram 33

**SECTION 3 Cardiovascular Case Studies Diagnosed With Handheld
Echocardiography 43**

7 Case 1—A 70-Year-Old Man With Postoperative Atrial Fibrillation 44

*Case 2—Tight Wedding Ring on a 68-Year-Old Man With Dilated
Cardiomyopathy and New Onset Atrial Fibrillation 50*

*Case 3—Resuscitated Cardiac Arrest After Coronary Artery Bypass Graft (CABG)
Surgery and Mitral Valve Repair for Ischemic Mitral Regurgitation (MR) 56*

8 Case 1—A 72-Year-Old Man With Dysphagia, Dyspnea, and Ankle Edema 60

*Case 2—A 78-Year-Old Man With Dysphagia and Known Coronary Artery
Disease 66*

*9 Case 1—A 75-Year-Old Woman With Known Advanced Cardiomyopathy
Presents to the Emergency Department With Recurrent Dyspnea 70*

*Case 2—78-Year-Old Man With Lower Extremity Edema, Dyspnea, and Weight
Gain During a Long Cruise 76*

Case 3—A 53-Year-Old Female With New Onset Heart Failure 83

Case 4—A 56 year old woman with dyspnea and chest pain 90

10 Case 1—62-Year-Old Man for General Medical Evaluation 97

*Case 2—An 81-Year-Old Man Undergoing Workup for Transcatheter Aortic
Valve Replacement (TAVR) for Severe Aortic Stenosis Presents With Severe
Dyspnea 104*

*Case 3—Incidental Finding on CT Chest Screening for Lung Cancer in a
56-Year-Old Woman 110*

*11 Case 1—An 85-Year-Old Man With Remote Aortic Valve Replacement
Presents With Dyspnea 117*

Case 2—A 65-Year-Old Man With Dyspnea Status Post TAVR and TMVR 124

Case 3—An 86-Year-Old Man Post TAVR Presents With Dyspnea 131

12 Case 1—A 72-Year-Old Man With Fatigue After Mitral Valve Replacement 137

13 Case 1—Cardiology Consult Before Noncardiac Surgery for Brain Tumor 144

Index 150