Drainage of all four pulmonary veins into the LA is also referred to as the “crab” view (Fig. 2.42). From this view, the aortic arch is transected in its short axis and the RPA is seen in its long axis, coursing from right to left across the image display and inferior to the arch. The right pulmonary veins appear to the left of the image with the right upper vein superior to the right lower vein while the left pulmonary veins appear to the right of the image with the left upper vein superior to the left lower vein.

### Additional Acoustic Windows

Additional windows that can be employed in the transthoracic examination include the right parasternal window and the posterior chest wall.

#### Right Parasternal Window

The right parasternal window is also valuable in the evaluation of the aortic root and ascending aorta; especially when the aortic root and ascending aorta are dilated. This window may also be used to image the IAS and the SVC/IVC drainage into the RA.

**Patient Position**

The patient is placed in a steep right lateral decubitus position with the patient’s right arm extended over their head.

**Probe Position and Orientation**

The probe is placed in the second or third intercostal space with the patient’s right arm extended over their head; imaging from this window may also be obtained with the patient in a sitting position (Fig. 2.46). The probe should be manipulated to obtain a recognisable imaging plane of the heart. The image planes that can be obtained are usually those of a long axis or short axis of the heart.

**Sector Orientation**

The sector orientation is such that structures seen at the top right of the sector are superior while structures seen at the bottom left of the sector are inferior; structures seen to the top left of the image are anterior while structures seen to the bottom right of the image are posterior.

**Structures Visualised and Normal Echocardiographic Appearances**

From this window and with the probe angled approximately 45° to the chest wall, the proximal ascending aorta may be seen in its long axis (Fig. 2.44). Other structures seen from this view include those seen from the suprasternal LAX view.

### Posterior Chest Wall

In the presence of a large left pleural effusion, pleural fluid can be used as an acoustic window to the heart. This window can display high quality images of the heart and descending thoracic aorta. In fact, this window may provide better images of the heart than the standard transthoracic windows where the lungs and other overlying organs and tissue and the patient body habitus inhibit imaging.

**Patient and Probe Position**

The patient is placed in a steep right lateral decubitus position with the patient’s right arm extended over their head; imaging from this window may also be obtained with the patient in a sitting position (Fig. 2.46).

The probe should be varied; the probe should be manipulated to obtain a recognisable imaging plane of the heart. The image planes that can be obtained are usually those of a long axis or short axis of the heart.

**Patient Position**

The patient is placed in a steep right lateral decubitus position with the patient’s right arm extended over their head; imaging from this window may also be obtained with the patient in a sitting position (Fig. 2.46).

The probe should be manipulated to obtain a recognisable imaging plane of the heart. The image planes that can be obtained are usually those of a long axis or short axis of the heart.