

RADIOGRAPHY OF THE THORAX: CARDIAC

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Technique

- ▣ High kVp, Low mAs
 - Times $\leq 1/60$ or $1/120$ decrease artifact from respiratory and cardiac motion
 - Less contrast and more latitude
 - ▣ (more shades of gray)
 - Pulmonary vessels should be seen in periphery. **Lungs should not be black.**





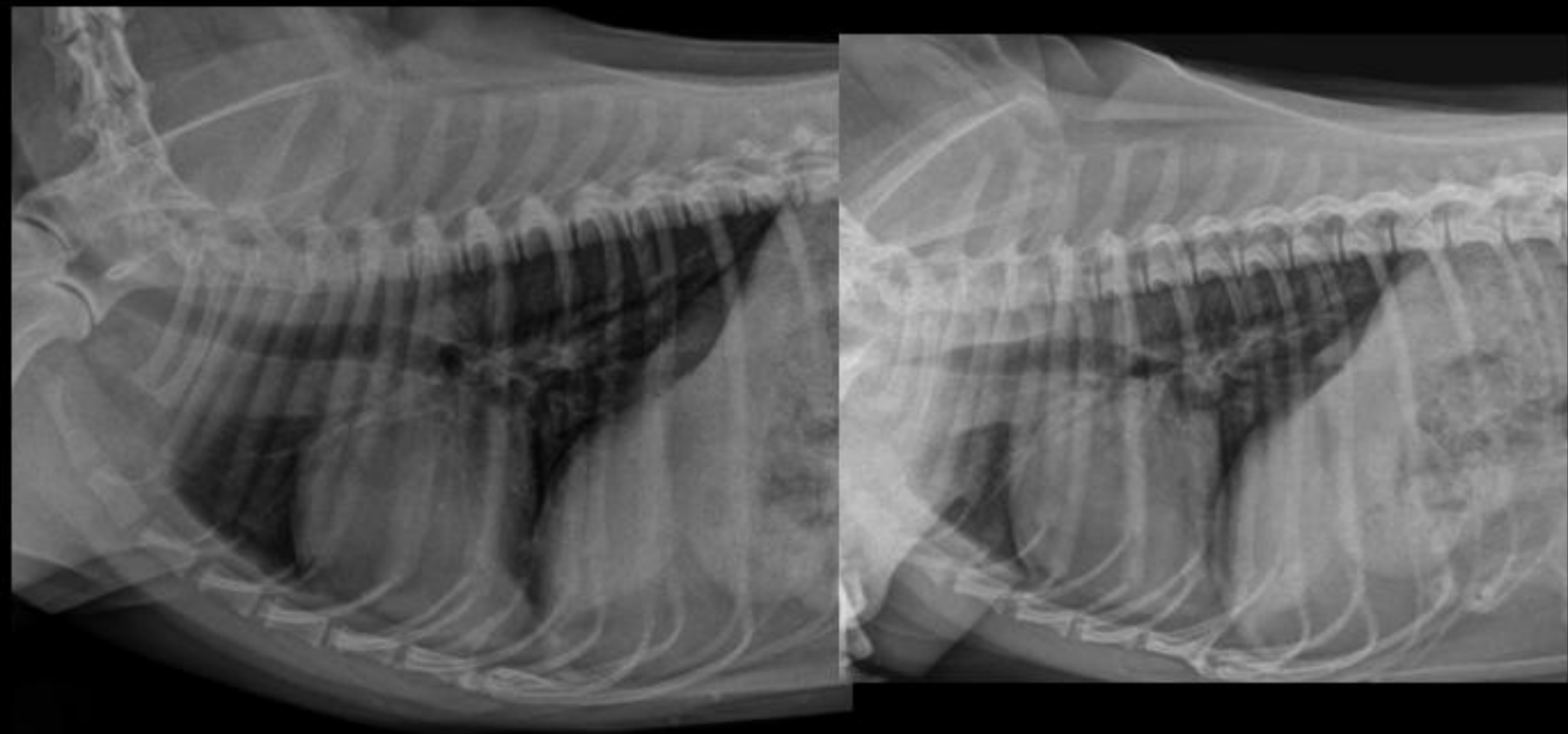






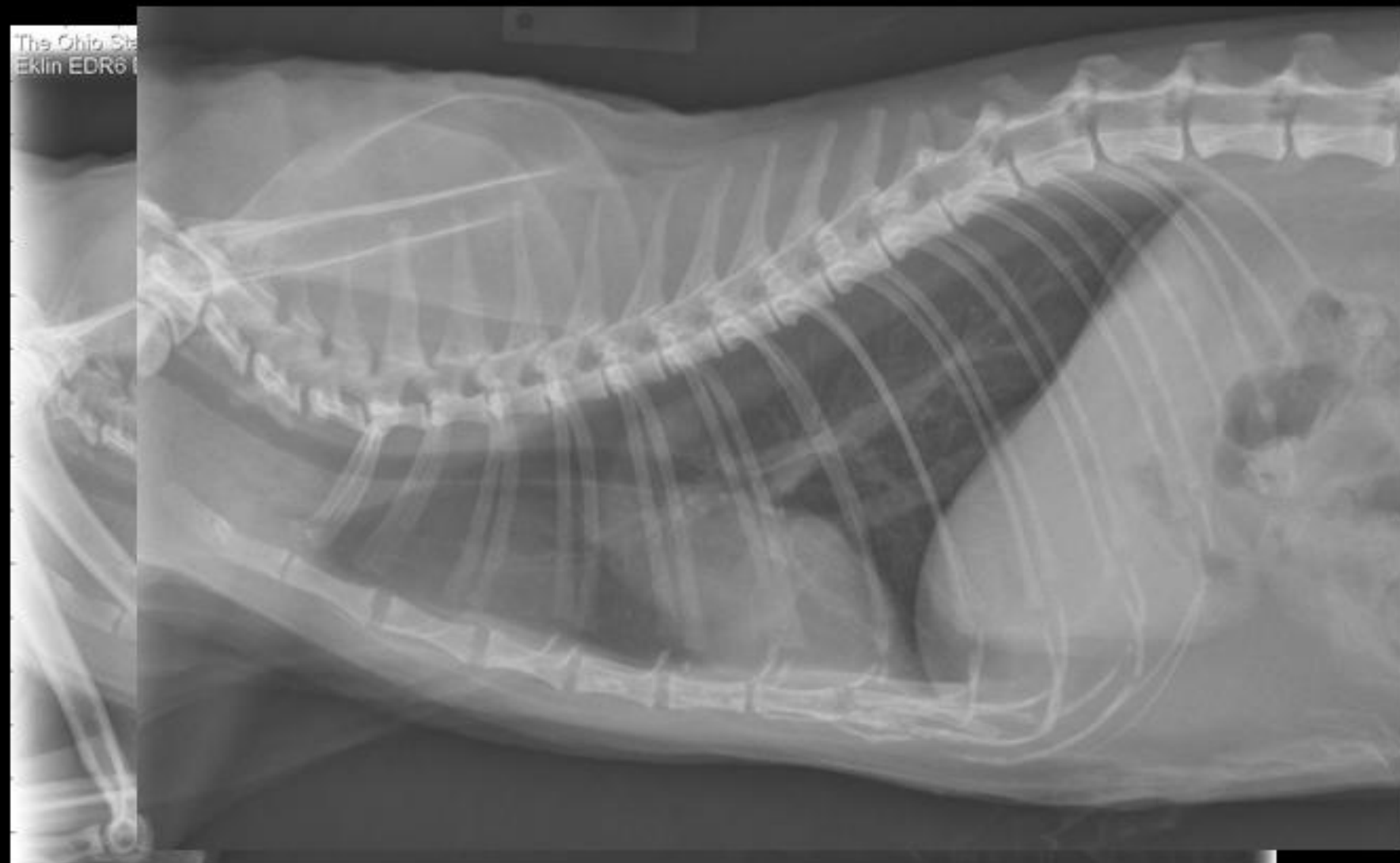


Positioning- Rotation





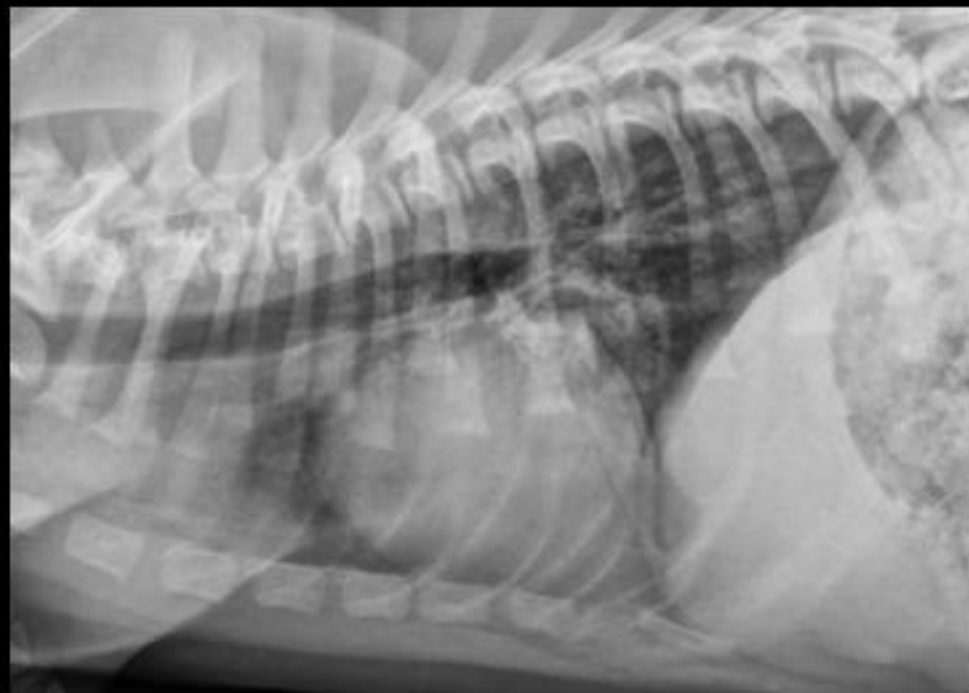
Positioning



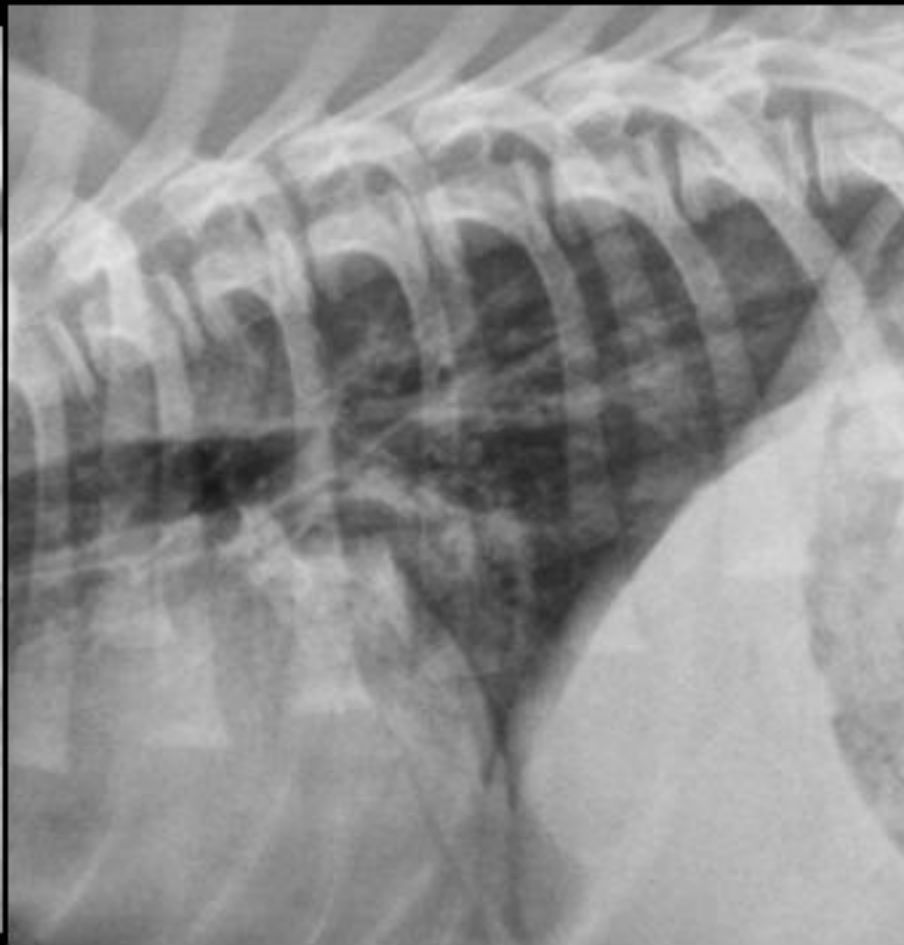
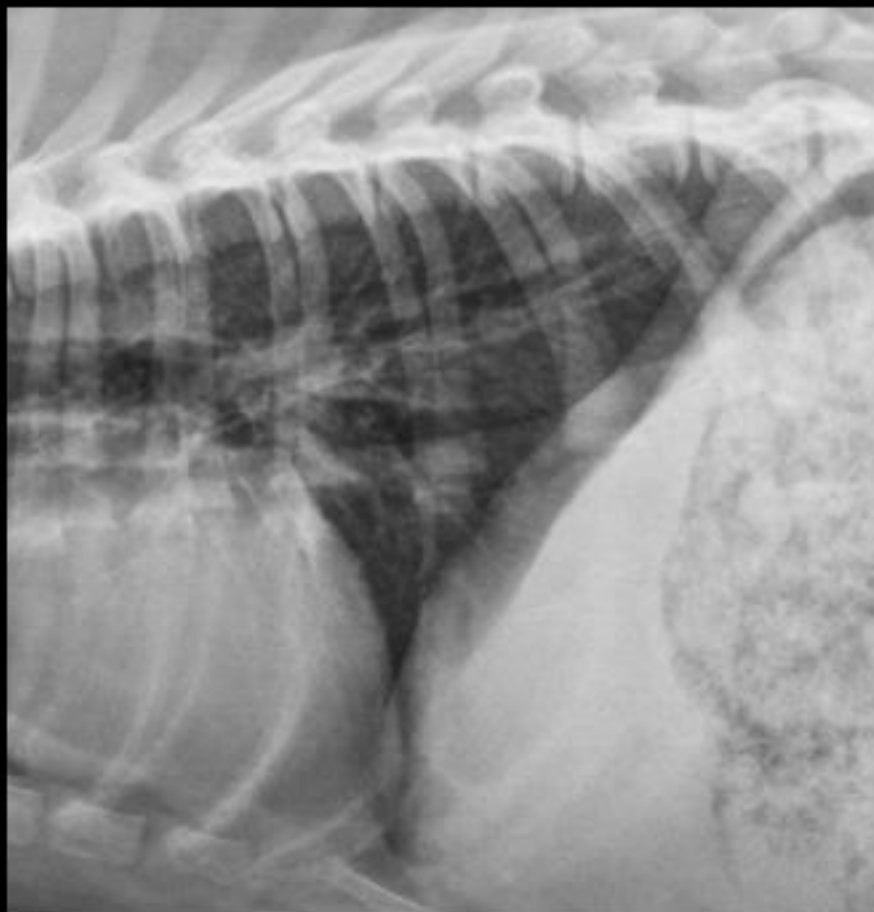
INSPIRATION



EXPIRATION



Inspiration v Expiration

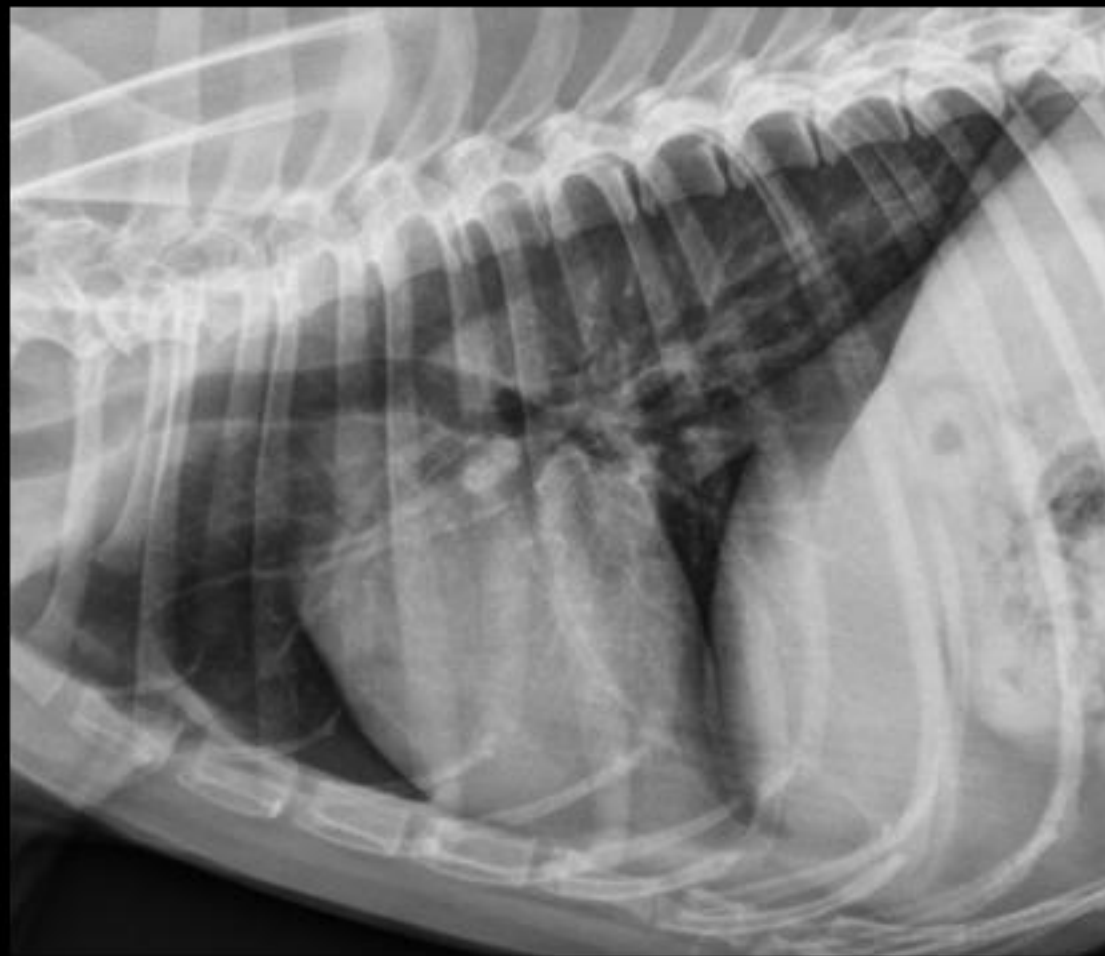


Cardiac Normals

Heart Size:

- ▣ Height (lateral): 60-70% of intrathoracic height
- ▣ Width (lateral)
 - Cat: 2-3 intercostal spaces (lat)
 - Dog: 3-3.5 intercostal spaces (lat)
- ▣ Width VD: 50% of intrathoracic width at R9

Normal Cardiac Silhouette

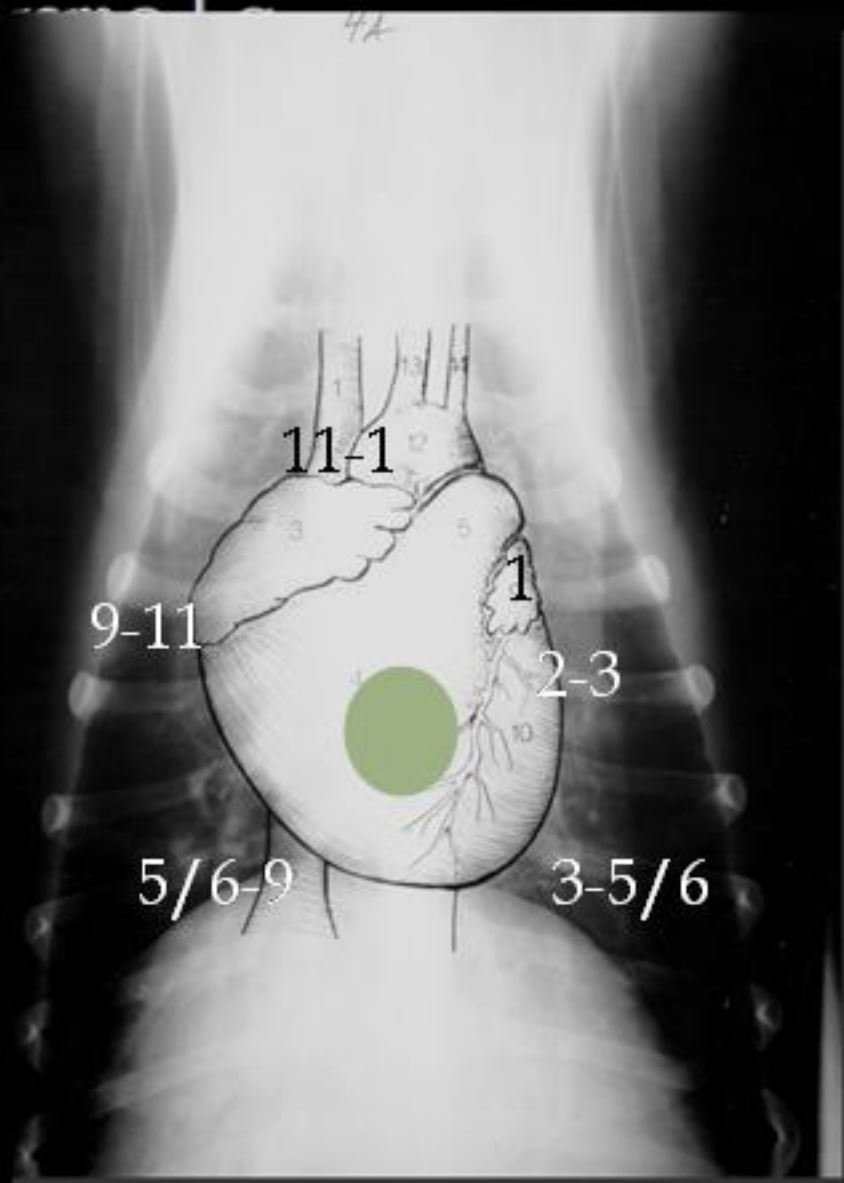
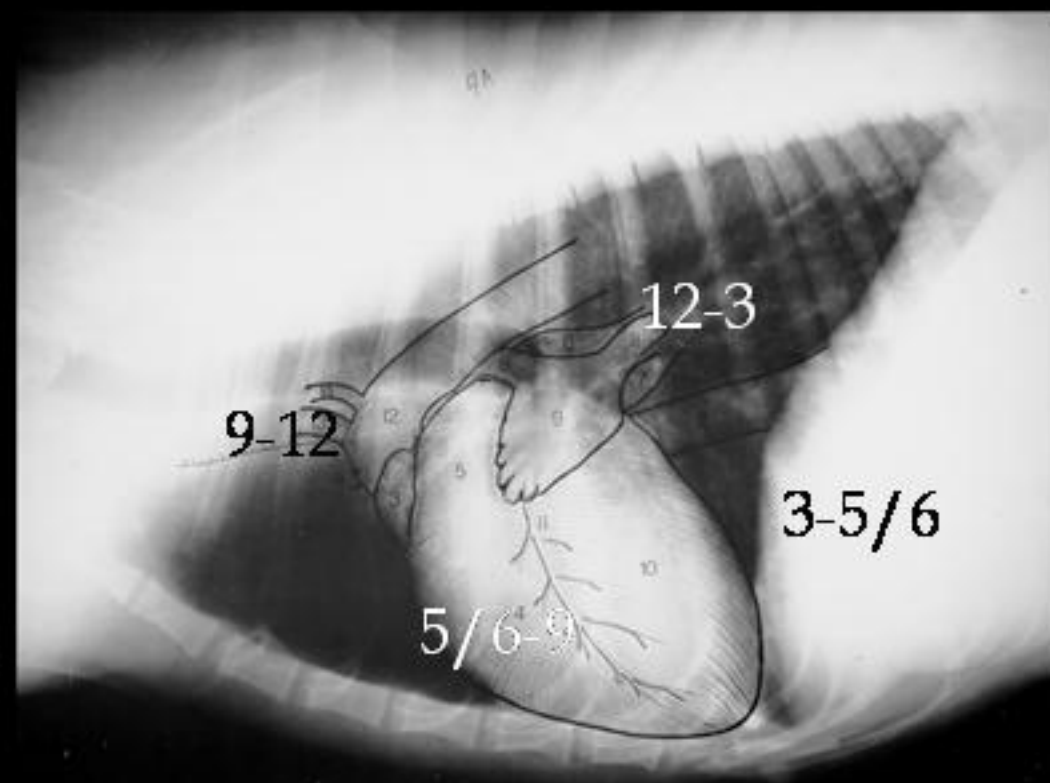


Cardiac Abnormalities

- ▣ Overall heart size
- ▣ Individual chambers
- ▣ Pulmonary vessels
- ▣ Lung and pleural space

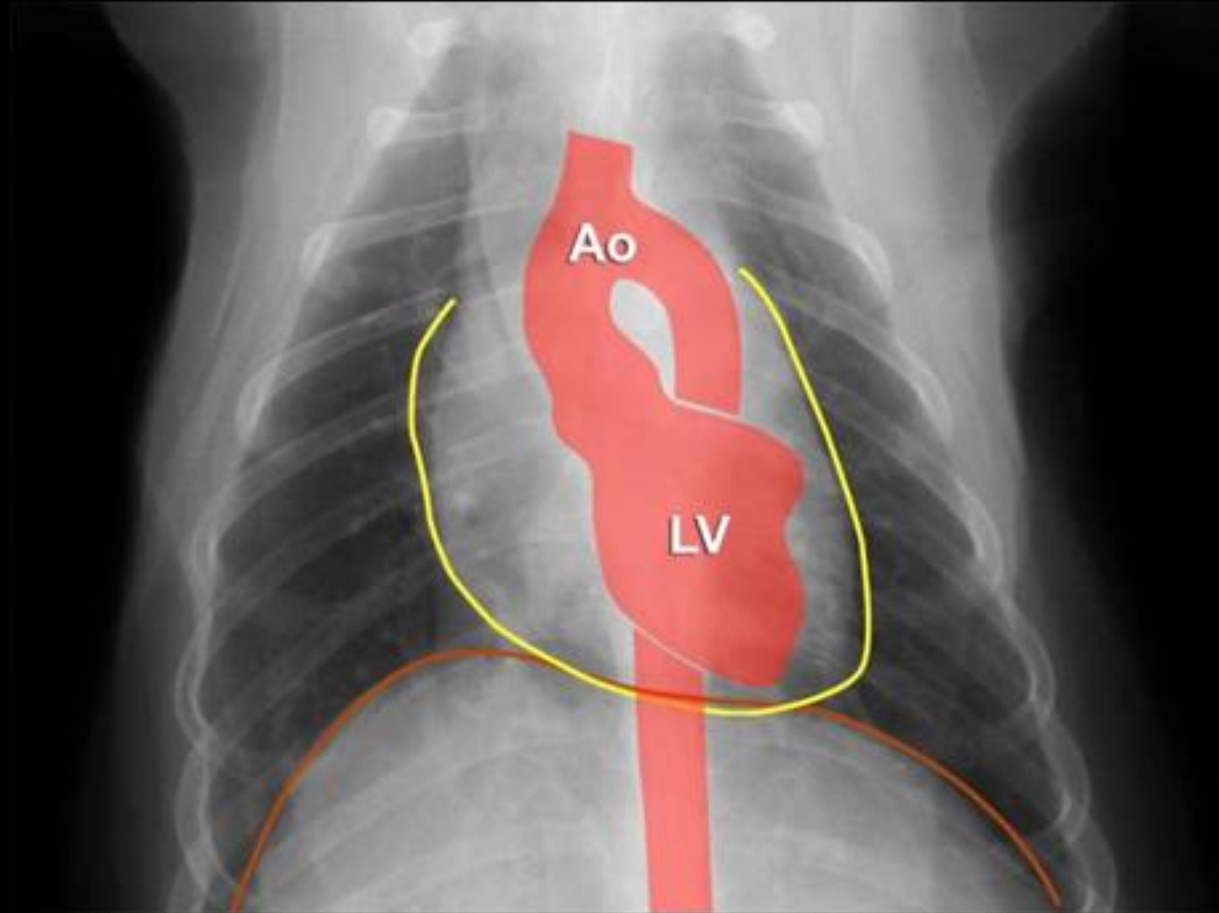
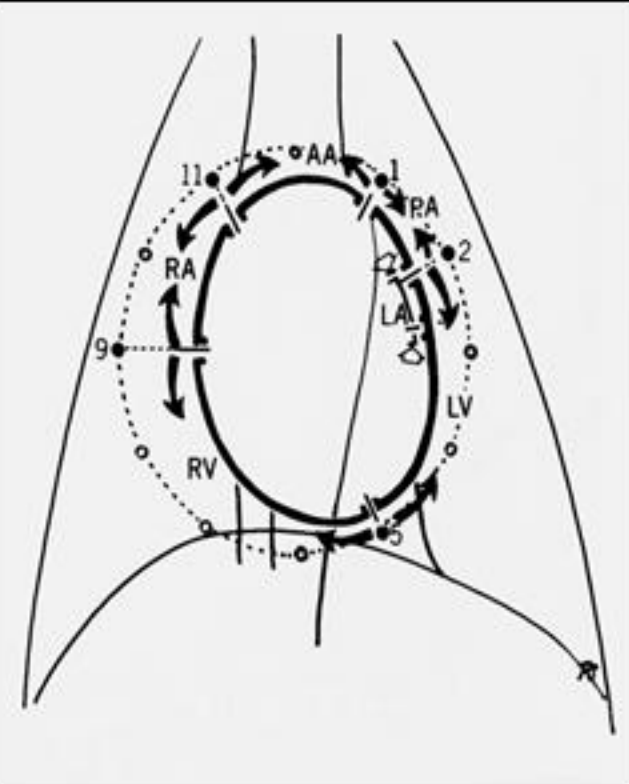
Thorax Normal

▣ Clock-Analogy



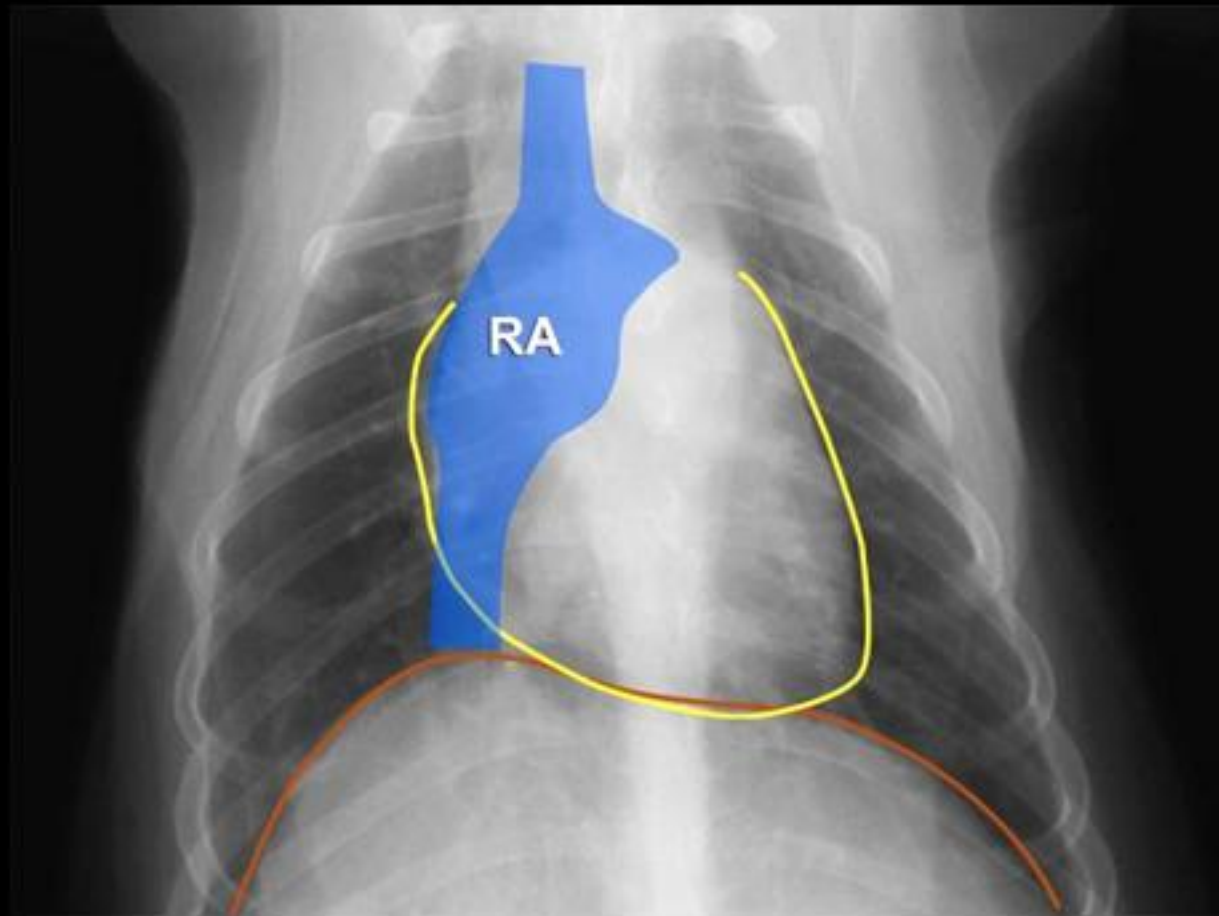
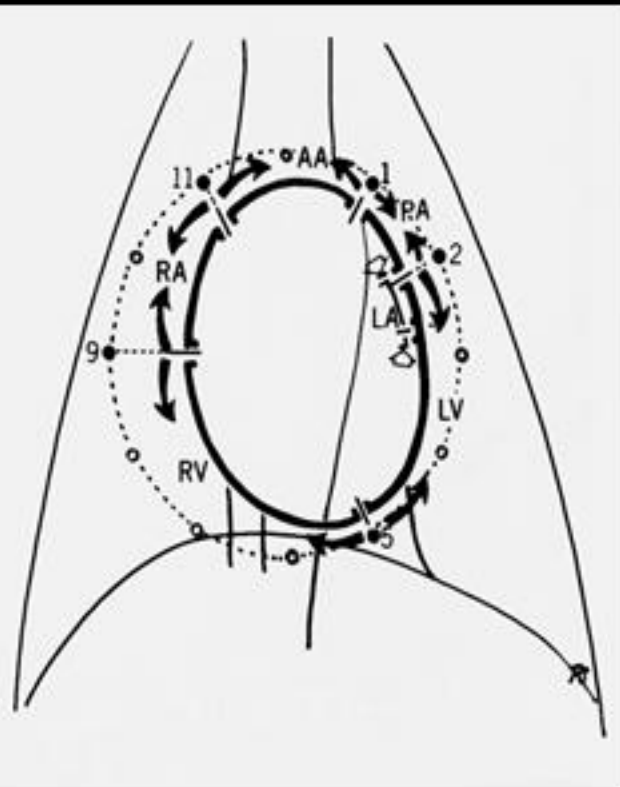
Clock Face Analogy

Aorta and Left Ventricle



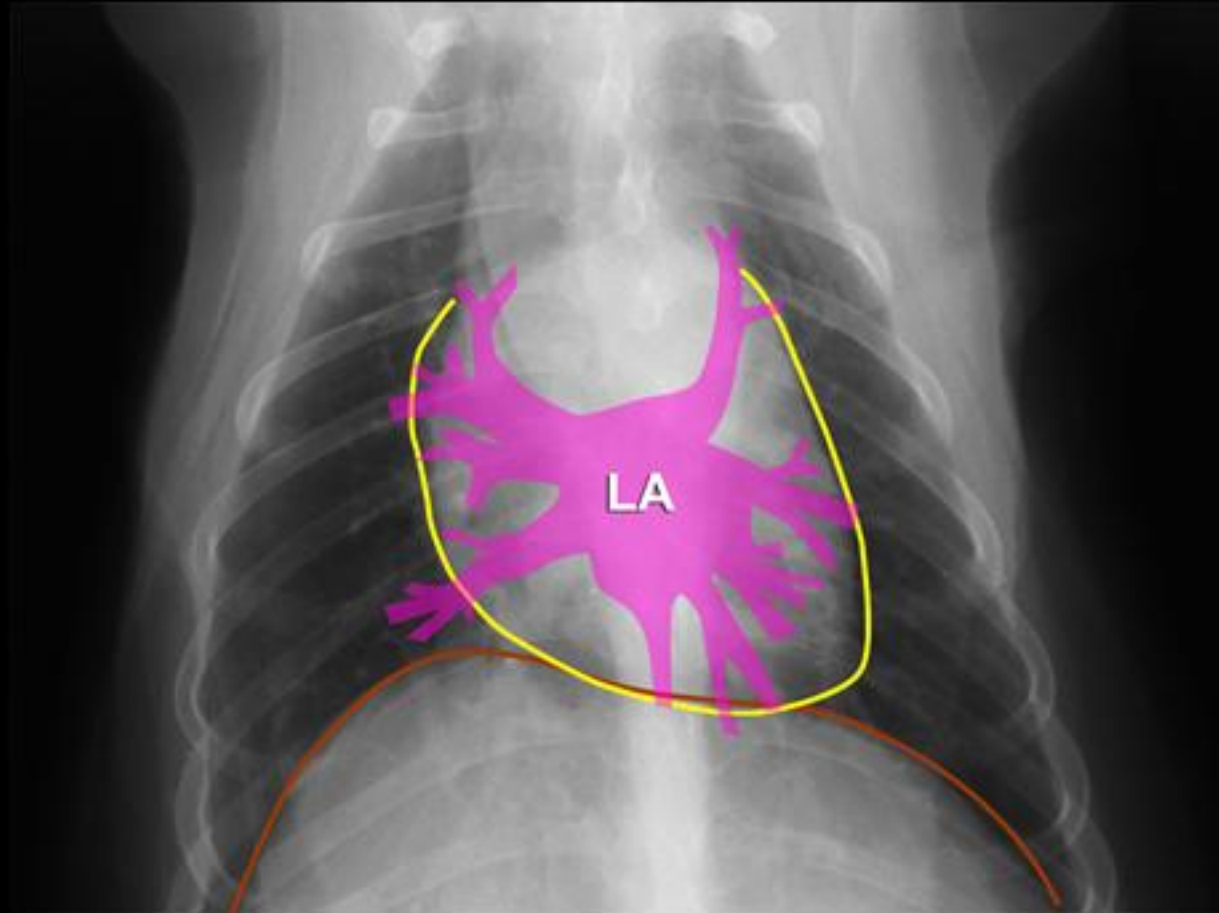
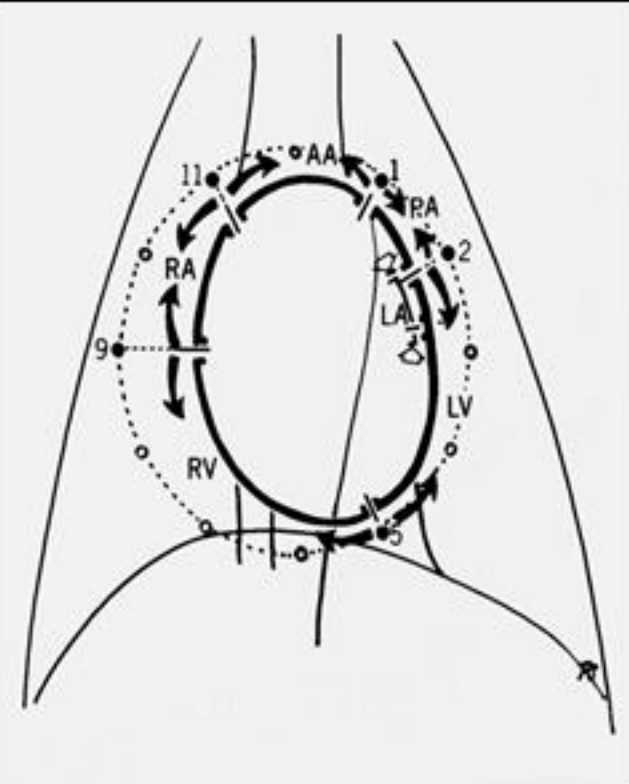
Clock Face Analogy

Right Atrium



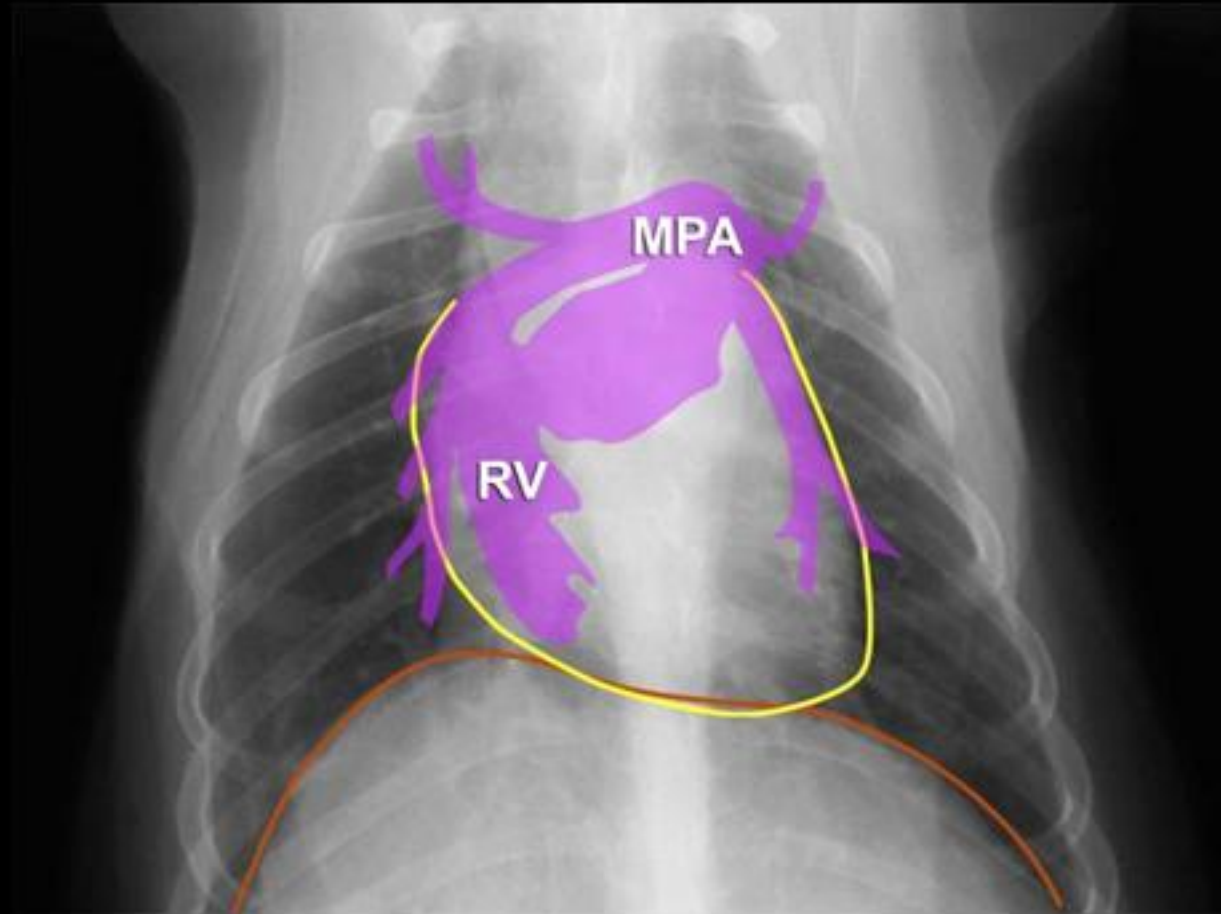
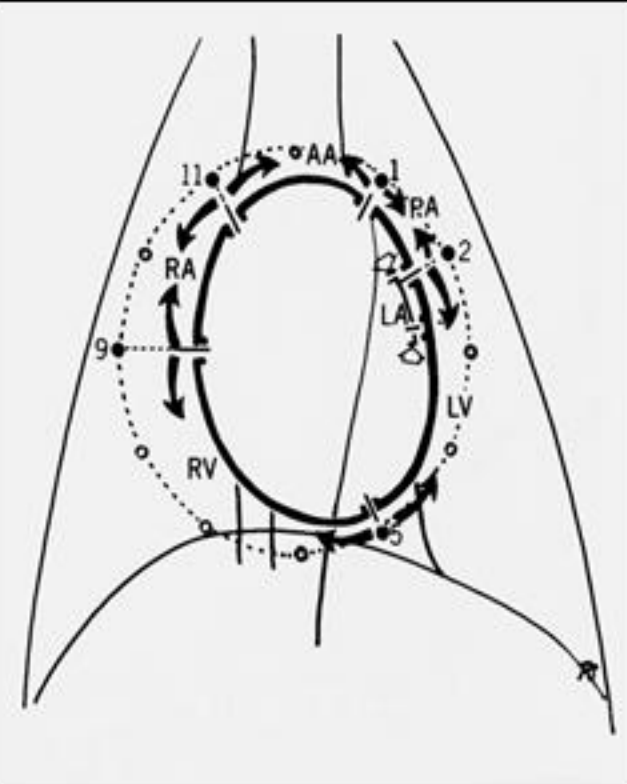
Clock Face Analogy

Left Atrium and Auricle



Clock Face Analogy

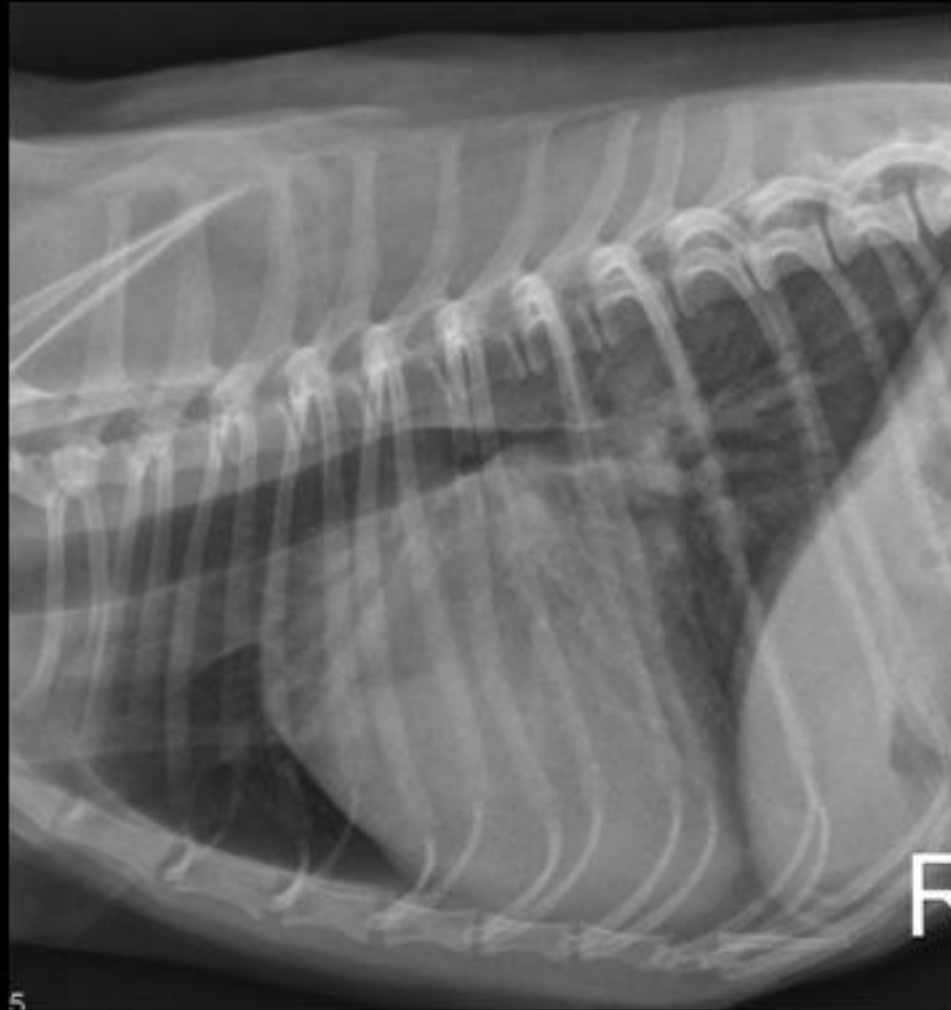
Right Ventricle and MPA



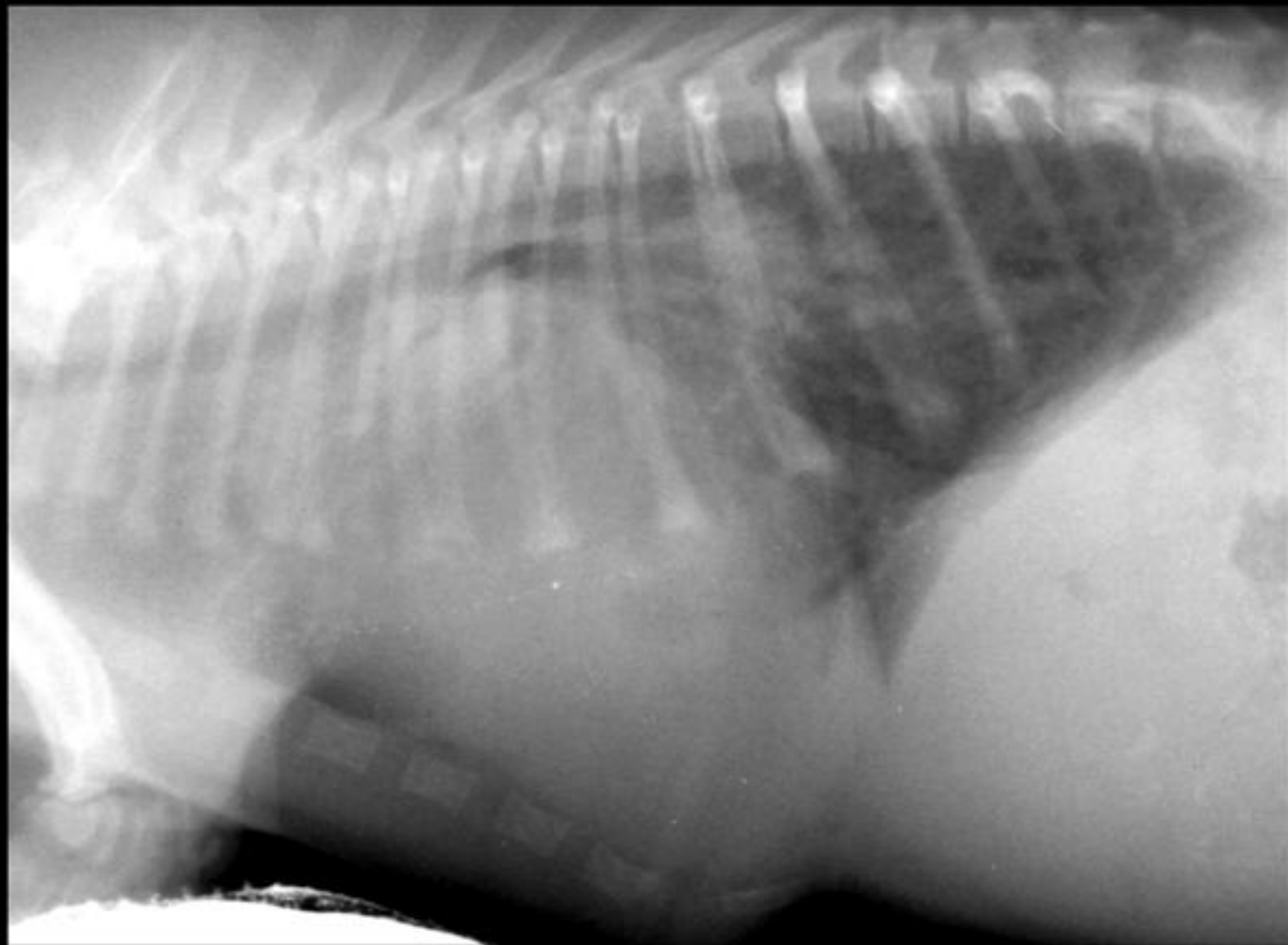
Left Ventricular Enlargement

- ▣ Dorsal displacement of the trachea
- ▣ Greater than 2/3 (70%) of thorax on lat view
- ▣ Long cardiac silhouette on VD view

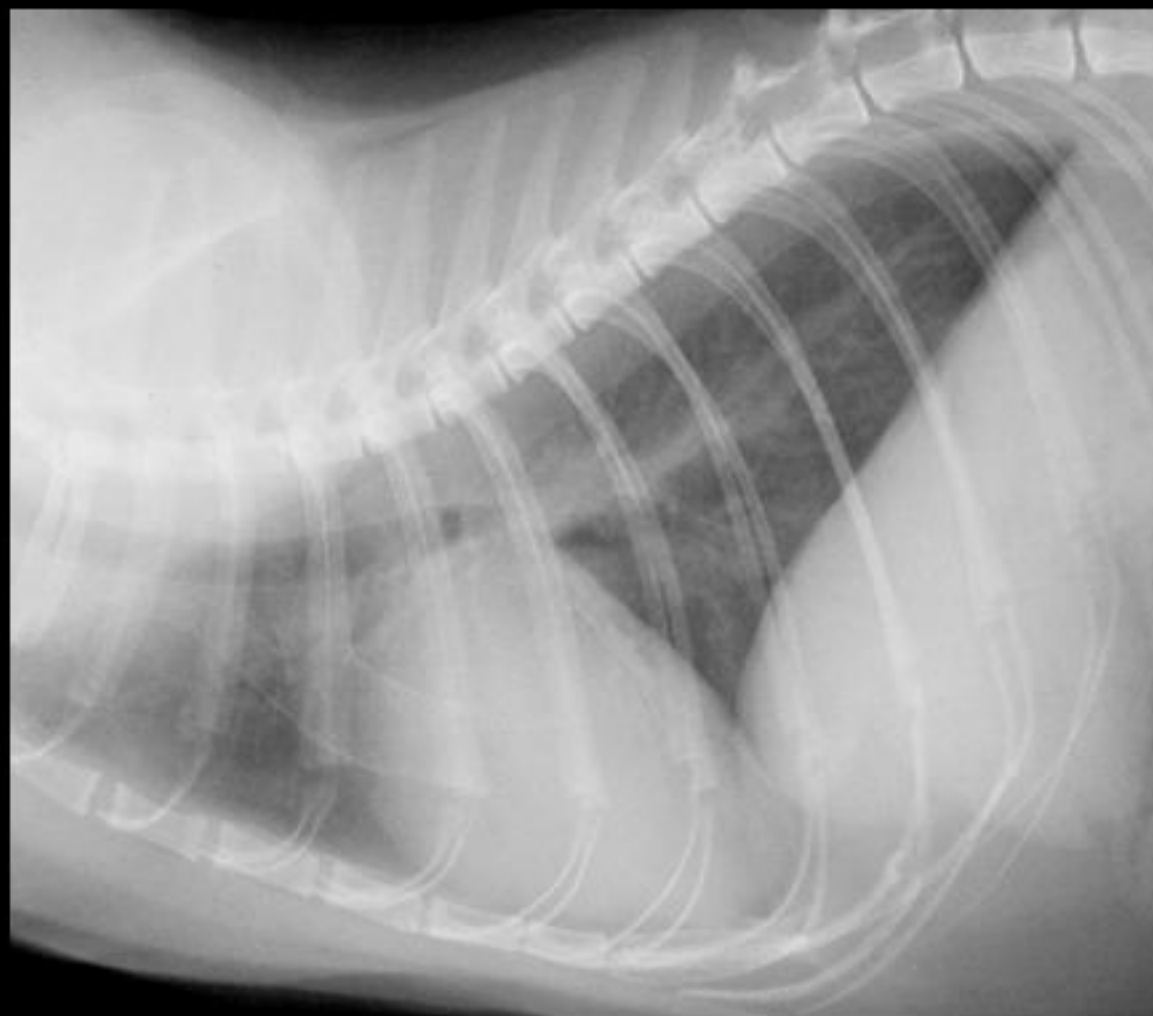
LV Enlargement



LV Enlargement



LV Enlargement



LV Enlargement

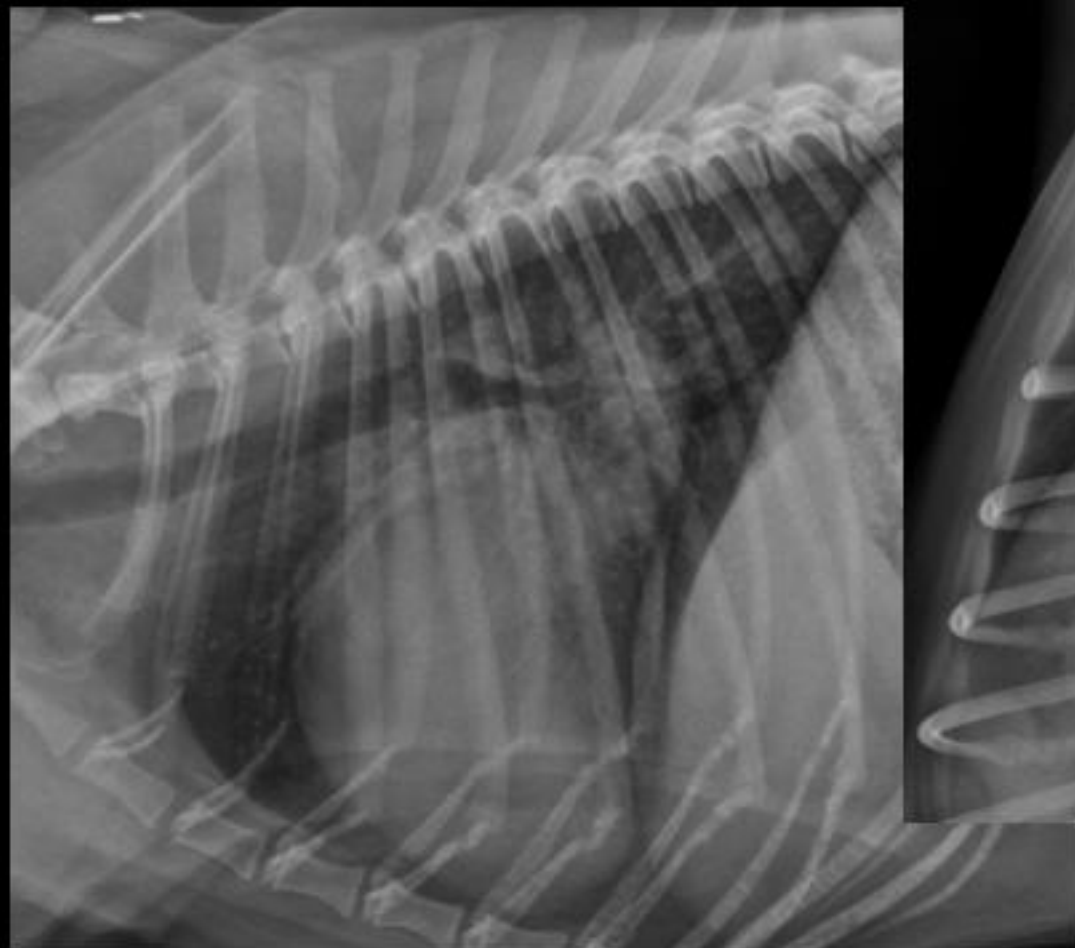
▣ Causes:

- Mitral Valve Insufficiency
(with Left Atrial enlarg.)
- Subaortic Stenosis
- Left-to-Right Shunts
 - ▣ PDA, VSD, ASD
- Hypertrophic Cardiomyopathy (cats)
- Dilated Cardiomyopathy (mostly dogs)

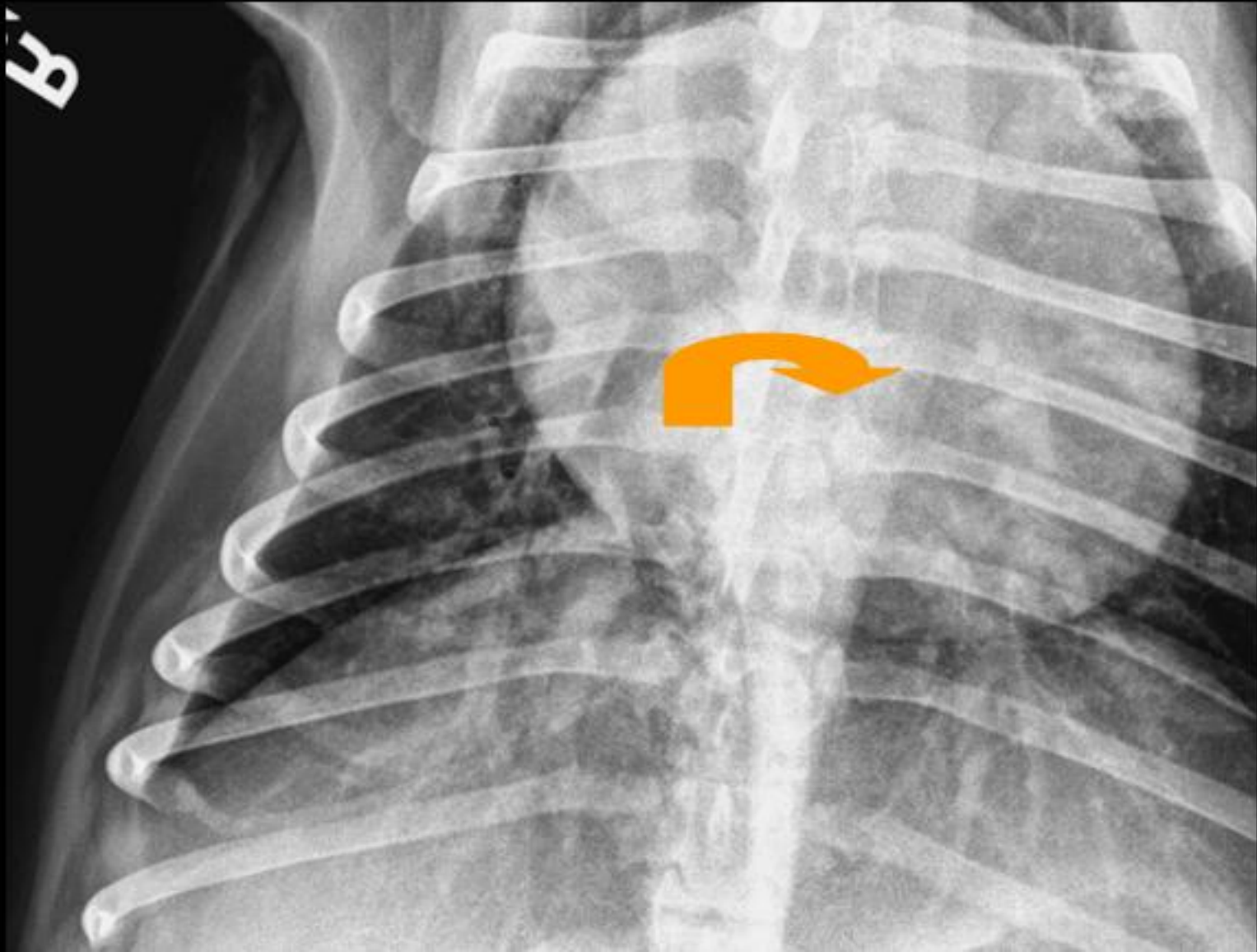
LA Enlargement

- ▣ Increased soft tissue opacity at carina
- ▣ Pushes caudal main stem bronchi dorsally
- ▣ Bowing/splaying of the mainstem bronchi on VD/DV view
- ▣ Summation over caudal cardiac silhouette
- ▣ Can see compression of left main stem bronchus

Left Atrial Enlargement



LA Enlargement



Left Auricle

- ▣ Bulge at 2-3 o'clock
- ▣ Overflow from LA enlargement

