

THE RADIOGRAPHIC NEWSLETTER FOR SMALL ANIMAL PRACTITIONERS
..... written by vets for vets

SMALL ANIMAL

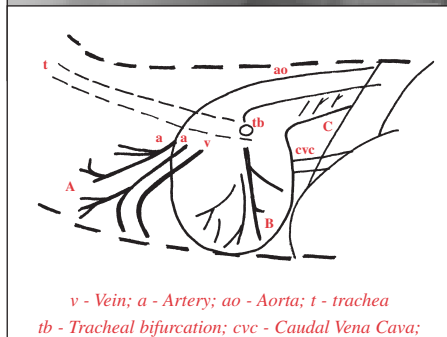
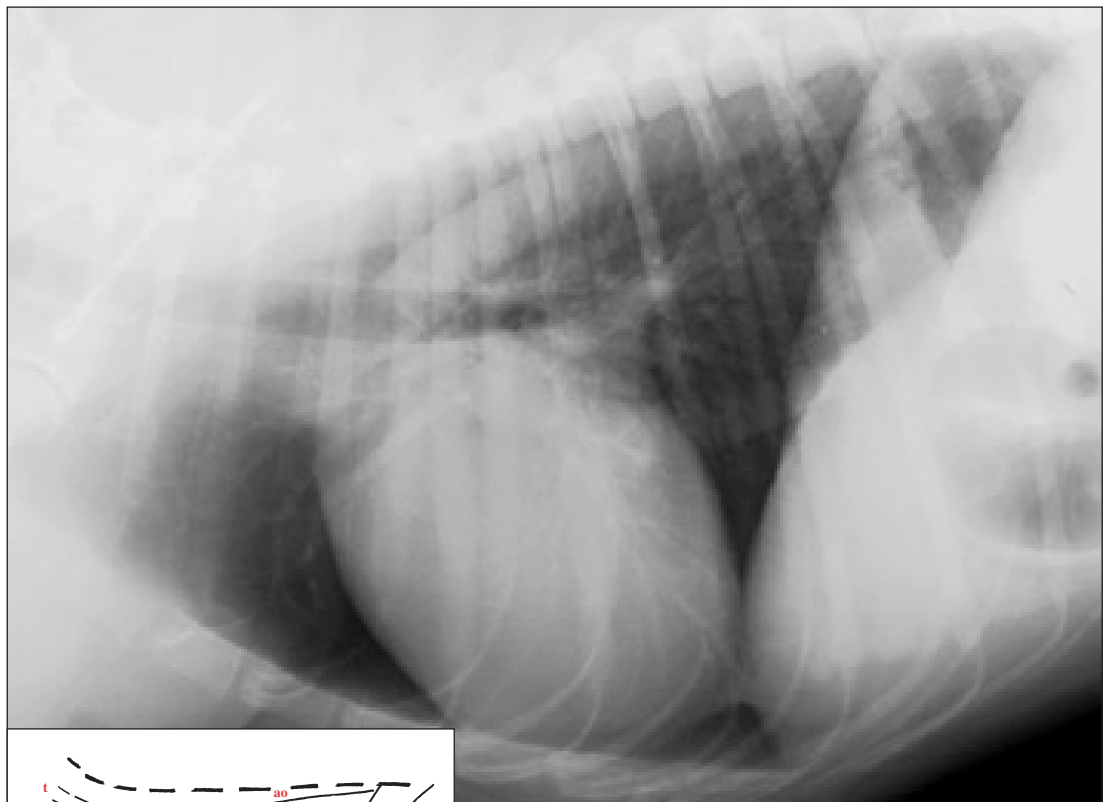
RADIOLOGICAL APPEARANCE OF LUNG PATTERNS

Normal appearance

Phase of respiration and exposure factors chosen can significantly alter the radiological appearance of normal lung tissue. Optimal radiographic technique is of paramount importance - ideally the animal should be at least sedated so that respiratory rate is minimised and the exposure made on peak inspiration. The exposure factors should be

chosen so that a high kVp technique is used allowing inherent contrast to be made more uniform and a low exposure time to be set.

In the normal dog and cat the pulmonary vessels are seen as branching, linear soft tissue opacities flanking the air filled bronchi. The normal bronchial wall which is also of soft tissue opacity, cannot be differentiated from



v - Vein; a - Artery; ao - Aorta; t - trachea
tb - Tracheal bifurcation; cvc - Caudal Vena Cava;

Diagram 1

Fig. 1
Normal Lateral Projection.

the vessels. The edges of the vessels are sharply outlined as they contrast with the surrounding air filled lung. The interstitial connective tissue is too fine to be seen. The lateral and the dorsoventral/ ventrodorsal projection differ in their appearance.

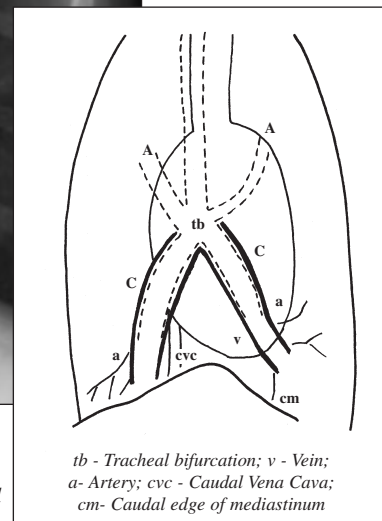


Fig. 2 and Diagram 2

Fig. 2 and Diagram 2 show that on this dorsoventral projection the bronchi are less readily visualised with the exception of the left caudal lobar bronchus. Several swollen bronchi are seen in the right middle lobe as doughnuts.

Diagram 2

Lateral projection (Fig. 1 and Diagram 1): two pairs of cranial lobar vessels are seen coursing in a cranio-ventral direction. The artery and the vein should be equal in size and their diameter should be less than $\frac{3}{4}$ of the width of the proximal third of the fourth rib. The vessels are wider in the perihilar region and taper as they extend into the periphery of the lung. In the middle lobar region the bronchus is often not visualised although the pulmonary vessels are seen superimposed on the cardiac silhouette. In the caudodorsal lung field a single, tapering, linear soft tissue opacity represents the caudal lobar vessels which are superimposed.

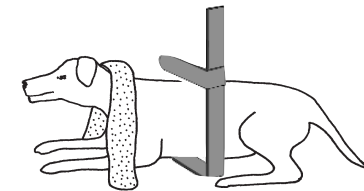
Ventrodorsal projection (Fig. 2 and Diagram 2): the trachea is seen as a slightly curved, air filled, tubular structure running just to the right of midline. At the tracheal bifurcation, superimposed on the cardiac silhouette, the main stem bronchi can usually be identified. The caudal mainstem bronchii extend on either side of midline in a slightly divergent fashion and are flanked by the artery laterally and the vein medially. Although the cranial lobar bronchii may be seen in some cases the accompanying vessels are rarely seen. As this is a ventrodorsal projection the caudal vena cava and the edge of the caudal mediastinum are also seen.

- A The paired cranial lobar vessels extend cranially and ventrally beyond the cardiac silhouette. One of the lobar veins is obscured due to super-imposition of the vessels of the opposite lobe.
- B The vessels of the right middle lobe are seen superimposed on the cardiac silhouette.
- C The caudal lobar vessels are represented by a single, linear soft tissue opacity extending caudodorsally from the heart base.

- A The air-filled cranial lobar bronchi are identified extending cranially on either side of the mediastinum. The adjacent pulmonary vessels are not identified.
- B Not shown on this diagram. The middle lobar vessels are not easily seen on this projection.
- C The caudal lobar structures are seen. The artery lies lateral and the vein lies medial to the air filled bronchus. These branch as they extend into the periphery of the lung.

The trachea lies just to the right of midline (T).

CHEST AND ABDOMINAL X-RAY EXPOSURE WALL CHART AND MEASURE



The chest and abdominal wall chart has been developed to be used in conjunction with the chest/abdominal measure to help practices achieve consistent results when carrying out radiography of these structures.

Tissue thickness of the chest and abdomen can be measured and recorded on the chart, along with the exposure settings that give you the optimum results for that thickness of tissue. This will help to standardise exposures in your practice. This chart has been developed with the help of Ruth Dennis MA VetMB DipECVDI DVR MRCVS (The Animal Health Trust).

For further information please contact:
Celtic Vet - Tel: 0800 279 9050

AUTOMATIC PROCESSORS

Advanced Technology for the Veterinary Profession

OPTIMAX

The optimum 35 x 43 cm processor that fits your budget as neatly as it fits your surgery

Ideal for Veterinary use:

- 90 seconds dry to dry
- Film sizes up to 35 x 43 cm
- Economical to use
- Automatic replenishment
- Easy to clean, moulded plastic roller system
- Lightbox available
- Consistent results

Finance available



This is the first article in a series of 5 to be run in Vet Images on the radiological appearance of lung patterns. **COLLECT ALL 5.**

1. Radiological Appearance of Lung Patterns
2. Bronchial Lung Pattern
3. Alveolar Lung Pattern
4. Vascular Lung Pattern
5. Interstitial Lung Pattern

HIGH FREQUENCY X-RAY UNITS

Advanced Technology for the Veterinary Profession

A range of high frequency X-ray units is available, from lightweight portable units to the high output Galaxy unit. All units are CE marked and government quality assured ISO 9002. The servicing is carried out by fully qualified radiographic engineers.

The Galaxy high frequency units are built with the latest technology, offering advanced performance for small animal and equine radiography. All units can be run from domestic power supplies.

There are three units to choose from.

- **Galaxy 3.5kW** - 125mA at 100kV - fixed anode 1.5 focal spot
- **Nova 6kW** - 155mA at 100kV - rotating anode 0.3 focal spot
- **Galaxy 30kW** - 750mA at 150kV - rotating anode 0.6 - 1.3 focal spot



THE NEW NOVA 6

The latest high frequency static unit for small animal and equine radiography. Available as a table mounted or mobile unit.

N.B. All Galaxy units can be run from a domestic power supply.

0800 279 9050

AGFA'S ADVANCED ORTHO HTG

The latest high definition green rare earth system from Agfa

- Ideal for small animal and equine radiography
- High definition
- Unbeatable value

See what you have been missing.

For a free trial contact Celtic Vet 0800 279 9050