VETCT
CONSULTANTS IN TELEMEDICINE

IT'S YOUR CASE

Species: Canine Breed: Pit Bull Sex: Female Neutered Age: 4 years, 1 month

Clinical History:

Historical coughing and waxing waning appetite. From the Midwest USA.

Details of study and technical comments:

Three orthogonal views of the thorax.

Diagnostic interpretation:

An alveolar pattern, evidenced by air bronchograms, is present in the cranial subsegment of the left cranial lung lobe (red arrows); there is lobar margination/lobar sign caudally (pink arrows). Less severe changes are in the dorsal aspect of the caudal subsegment of the left cranial lung lobe. There is a diffuse, moderate to marked bronchial and unstructured interstitial pattern in the remaining pulmonary parenchyma (orange arrows). In some areas, this appears as miliary nodules (yellow arrows).

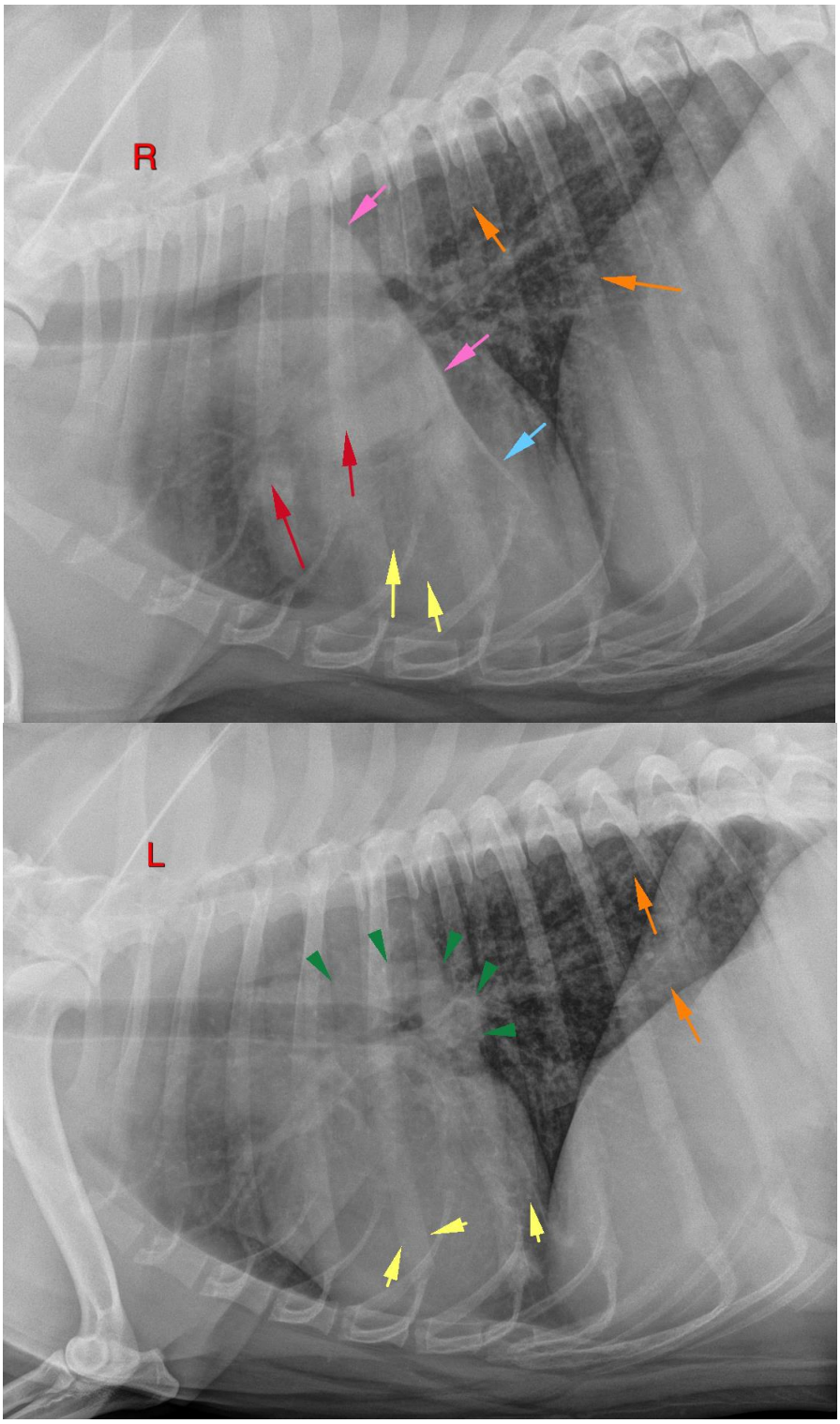
Increased soft tissue in the perihilar region (green arrowheads) obscures the margins of the aorta and main pulmonary artery on the ventrodorsal view. Widening of the caudal part of the cranial mediastinum is noted on the ventrodorsal view (purple arrows). There is no evidence of compression of the principal or main stem bronchi. Thin pleural fissure lines are present in the left pleural space (light blue arrows).

The cardiac silhouette, pulmonary vasculature, trachea, oesophagus and cranial mediastinum are within normal limits. The osseous structures are within normal limits.

t. +44 (0)1223 422251 www.vet-ct.com **e.** info@vet-ct.com

Co Number 6955449 Registered Office St John's Innovation Centre Cowley Road Cambridge CB4 0WS UK

ABN 24601862220 Registered Office in Australia Suite 11, 185-187 High Street Fremantle WA 6160 Australia

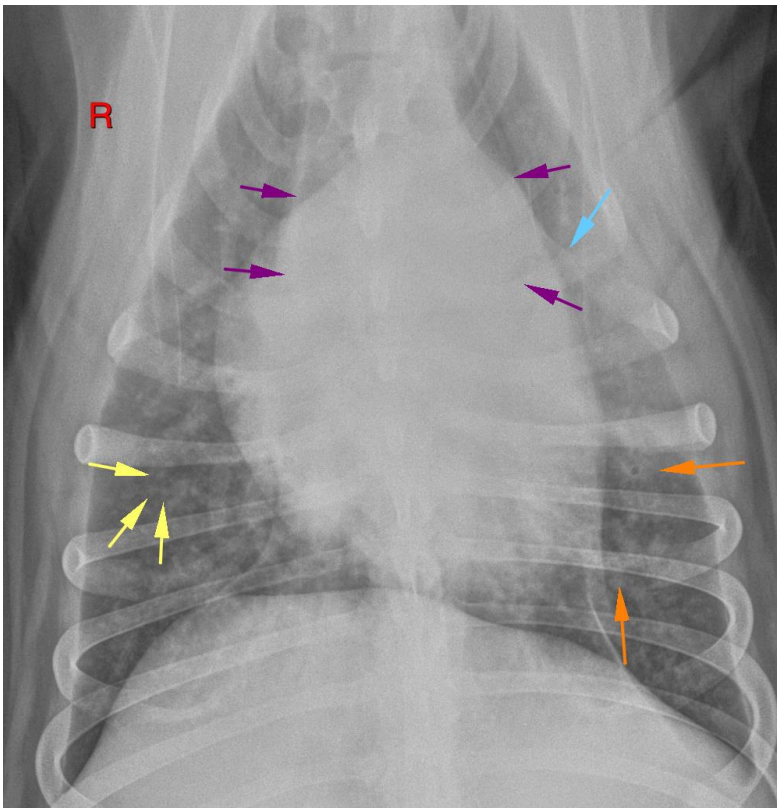


Reported by VetCT

t. +44 (0)1223 422251 www.vet-ct.com **e.** info@vet-ct.com

Co Number 6955449 Registered Office St John's Innovation Centre Cowley Road Cambridge CB4 0WS UK

ABN 24601862220 Registered Office in Australia Suite 11, 185-187 High Street Fremantle WA 6160 Australia



Conclusions:

Alveolar pattern left cranial lung lobe with scant pleural effusion and diffuse bronchial and interstitial pulmonary pattern with intermittent miliary nodules.

Perihilar lymph node enlargement.

The constellation of radiographic findings with geographic location of the patient is most consistent with pyogranulomatous infection, such as fungal disease (i.e. blastomycosis or histoplasmosis). Neoplasia (i.e. lymphoma) is considered much less likely.

Additional comments:

The increased soft tissue at the perihilar location is consistent with lymph node enlargement (lymphadenectasis or lymphadenopathy) of the tracheobronchial and/or cranial mediastinal lymph nodes in particular.

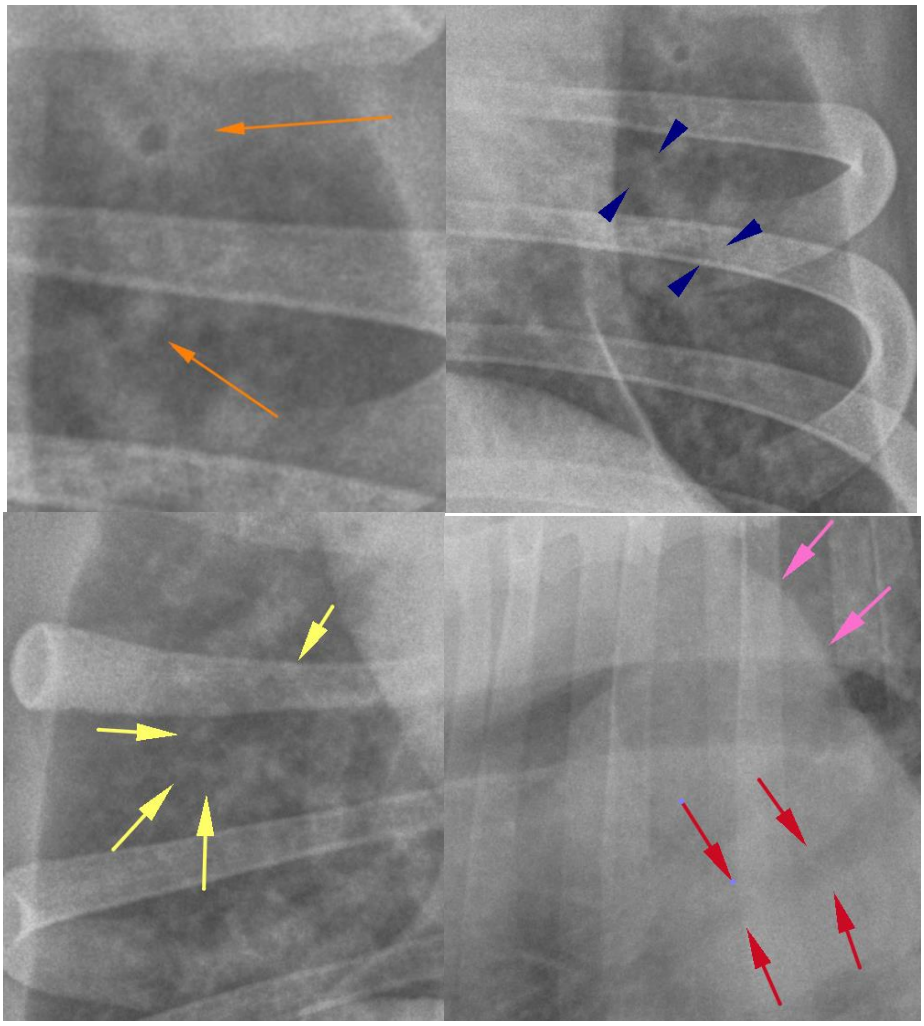
This case provides a great opportunity to consider the various presentations of pulmonary pathology. There are four main classifications of pulmonary patterns (vascular, bronchial, interstitial and alveolar).

- The vascular pattern in this patient is partially obscured by the diffuse pulmonary pathology but there is no overt enlargement of the lobar arteries and veins.
- Bronchial pattern is evidenced by increased conspicuity of the airways in the periphery. Although not sharply defined, the wall of the bronchus is more apparent (orange arrow).
- Interstitial changes can be unstructured or structured.
    - In this case, unstructured interstitial pattern is indicated by the poor visibility of the vascular margins. In other words, the vessels are usually sharply marginated due to air filled lung providing inherent contrast with the soft tissue of the vessel. When there is increased soft

tissue opacity of the lung (oedema, cells, haemorrhage), a fine-tipped pencil cannot delineate the vessel margins. The dark blue arrows estimate the boundaries of the left caudal pulmonary artery, but they are hard to truly define.

- Structured interstitial patterns can be further divided into nodular or miliary. Miliary is a subset of nodular as these are soft tissue nodules, usually less than 2 mm (yellow arrows) but can increase in size with time. Miliary nodules are most commonly associated with fungal infections and certain neoplasms.

- Alveolar pattern is defined by the presence of air bronchograms (red arrows). In this pattern, there is effacement of the vessel margins by soft tissue and the only anatomical structure noted is air-filled airway. When this change extends to the lung lobe margin (pink arrows), thereby defining the margin of the lobe, it is called lobar margination or lobar sign. In this circumstance, the vessel margin cannot be defined even with a blunt-tipped pencil.



Follow up: This patient was diagnosed with Blastomycotic pneumonia and responsive to antifungal therapy.