

IT'S YOUR CASE

Species: Feline Breed: Domestic Shorthair (DSH) Sex: Male Entire Age: 3 month

Clinical History:

He is an 11 weeks MI DSH presenting with dyspnoea.

He was adopted 3 weeks ago with a littermate. There are other animals in the house, but kittens are in separate room.

Starting a week ago, he was lethargic, not eating, not moving much, and he had change in the quality of his breathing which appeared as a bump on his ribs. Trauma is not known but cannot be explicitly excluded. There was also spray painting in the room where kittens were (would have been < 2 hr). He continued to worsen. No vomiting, not eating. No diarrhea. Barely touched any food. Client got canned a/d has not eaten it.

He presents in respiratory distress.

IV cath placed, IVF started, Chem10/CBC/prBNP. Oxygen provided.

Weight 1.1 kilograms

Temp 97.4

HR 187

RR 160, 180, 120

Resp Effor Dyspneic

Mentation QAR

BP 142/113 (123),

Hydration: Dehydrated, in shock

EENT: Upper respiratory congestion, referred sounds to chest

Oral Cavity: NSF rostral mouth

Heart/Lungs: NSR, muffled by harsh lungs sounds.

Abdomen: Tense in association with ascutaiton

Integument: NSF

Urogenital: MI, soft bladder

Musculoskeletal/Neuro: Patient ambulates normally with normal mentation. No apparent neurologic deficits noted. Orthopenic

Lymph Nodes: Lymph nodes are appropriate in size.

Pain Assessment: 5/10 dyspne

BCS (1-9)/MCS (1-3): 4/9, mcs 2/3

Prognosis: Guarded



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Chem 10: NSF, PCV/TS: 40% and 6.2 g/dL

CBC: Hct 48.1 %, normal wbc 16.7, normal platelet 656

Chem: BG 74, SDMA 17 (r/o growth), creatinine low (0.5), NSF

ProBNP: High normal (102) - n 0.-100 pmol/L

Dyspnoea has improved down to 85 rpm with oxygen therapy. Ate kitten food with good appetite.

Anatomic regions: Thorax

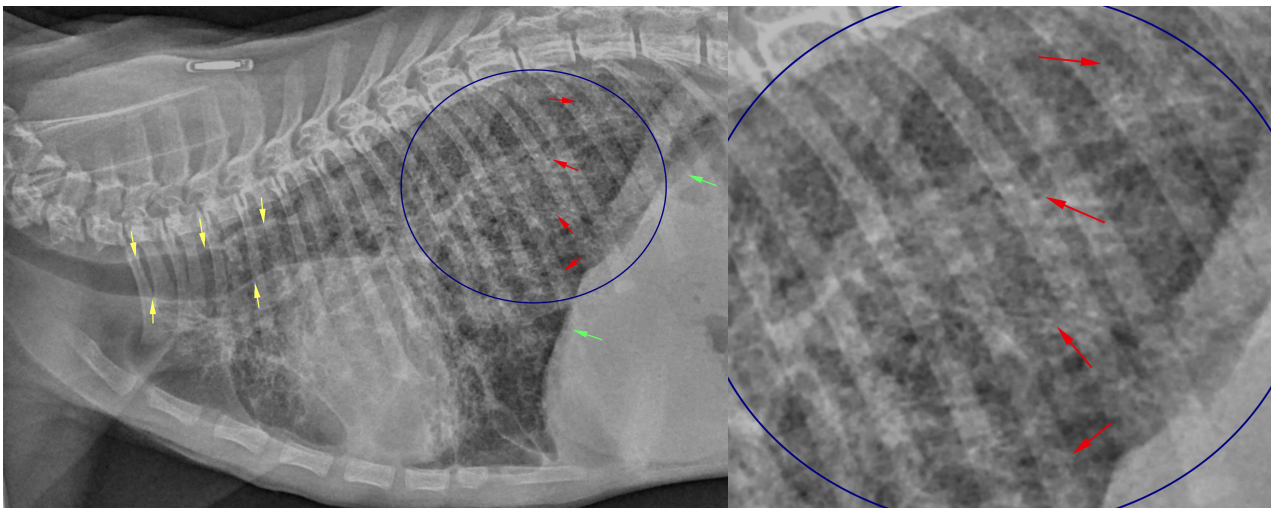
Details of study and technical comments: Three radiographic projections of the thorax

Diagnostic interpretation:

There is a severe, generalised, mixed unstructured interstitial (blue circle) and bronchial lung pattern (red arrows) with a reticular appearance. This is associated with partial border effacement of the pulmonary vessels, making them challenging to assess.

The lungs are moderately overinflated, demonstrated by an increased size between the cardiac silhouette and the diaphragm, flattening of the diaphragm (green arrows) and mild horizontalization of the ribs on the DV view.

The cardiac silhouette is generally enlarged without clear specific chamber enlargement. The thoracic part of the trachea is displaced dorsally, mildly dilated and has an uneven and irregular diameter and irregular borders (yellow arrows). There is no visible intraluminal material.



Conclusions:

- Severe interstitial and bronchial lung pattern
- Cardiomegaly: age-related, congenital cardiac disease, pericardial effusion, cor pulmonale
- Tracheal flaccidity: probably secondary to the age and dyspnoea

Additional comments:

The pulmonary pattern is evocative of a severe interstitial lung disease and/or small airways disease (bronchiolitis).

These comprise multiple aetiologies including toxic pneumopathy (a concern considering the history), but also infectious causes (viral, bacterial or fungal); the latter seems less likely given the normal white blood count.



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Both scenarios can lead to irreversible fibrotic lung lesions. Unfortunately, a lung biopsy is often necessary to confirm the type of lesion and may not determine the cause. Computed tomography of the chest can also be useful to better assess the pulmonary lesions but is unlikely to lead to a specific diagnosis.

A cardiac ultrasound could also be considered to further assess the cardiomegaly, although the pulmonary lesions are not typical of cardiogenic pulmonary oedema.

Comments about the unstructured interstitial pattern:

Interstitial patterns encompass a large range of manifestations from unstructured to structured. The reason for this is that the pulmonary interstitium is comprised of alveolar wall, basement membrane, pulmonary capillary endothelium and perivascular and perilymphatics. Pathologies implicating these areas can generate disease that will be classified as interstitial pattern.

Unstructured interstitial pattern commonly refers to increased opacification that incompletely obscures the margins of the vessels. The vessels are still visible as structures but may have diminished sharpness of their margins. The distribution in conjunction with other pulmonary patterns helps prioritise the differential list.

Caudodorsal distributions are typical of pulmonary oedema. This can be cardiogenic or non-cardiogenic (ARDS, SIRS, electrocution, near drowning, seizure, etc). Cardiogenic pulmonary oedema would be favoured with a concurrent hypervascular pattern.

Cranioventral distributions are more commonly observed with pathologies introduced via the airway (i.e. bronchopneumonia). One might expect a concurrent bronchial pattern in these cases.



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