WHAT IS YOUR DIAGNOSIS?

A 13 year old female neutered domestic short hair cat presented to the R(D)SVS Feline Medicine Clinic for investigation of a suspected lung mass. The cat first presented for investigation of coughing. The cough seemed to respond to treatment with antibiotics. The owner was now most concerned about the cat’s weight loss and partial anorexia. The owner had also noticed a difference in the size of the cat’s pupils over the last 3 days.

![Image of a cat with anisocoria](image)

**FIGURE 1:** Anisocoria was evident on the initial clinical exam.

Physical examination revealed the cat to be quiet, alert and responsive. Mucous membranes were pink with capillary refill time 2 seconds. Heart rate was 200 beats per minute with no murmurs detected. Heart sounds were muffled bilaterally. Respiratory rate was 32 breaths per minute with no adventitious lung sounds. Abdominal palpation was unremarkable. Rectal temperature was 38.0°C with peripheral lymph nodes within normal limits. Anisocoria was observed with the right pupil larger than the left. No direct PLR was present in the right eye; however a consensual response was present when light was shone in the left eye. Large wedges of chorioretinal necrosis were seen as grey/black discoloured areas of fundus. These extended out from the optic disc.
1. What are the main differential diagnoses for chorioretinitis?

- Parasites (e.g. Toxocariasis)
- Fungal infections (e.g. Cryptococcus)
- Bacterial infection (e.g. Bartonella)
- Viral infections (e.g. feline leukaemia and feline infectious peritonitis)
- Protozoal infection (e.g. Toxoplasmosis)
- Autoimmune disease
- Metabolic
- Neoplasia
- Systemic infection
- Toxicity
- Physical trauma

2. What diagnostic tests would you perform?

- Routine haematology: Total WBC 25 x10^9/l (ref range 7 - 20 x10^9/l); neutrophils 22.56 x10^9/l (ref range 2.5 – 12.8 x10^9/l) and lymphocytes 0.24 x10^9/l (ref range 1.5 – 7 x10^9/l). The white blood cell changes may have been due to inflammation, infection or partly due to a stress response.

- Biochemistry and coagulation profile: No significant abnormalities.

- CT scan: A moderate volume pleural effusion was identified. This was drained during the scan to aid visualisation of the lungs. 70mls of serosanguinous fluid was drained from the right
hemi-thorax. A mass lesion was identified occupying the left lung lobes. There was suspicion of early metastatic disease within the right lung. Mass lesions were also identified within the stomach and the hind limb musculature.

FIGURE 3: CT scan of the thorax revealed a soft tissue involving the majority of the left lung. A moderate amount of pleural effusion was detected.

Ultrasound guidance was used to obtain FNA samples from the lung and hind limb masses. Cytology of the lung mass was consistent with epithelial neoplasia with features of malignancy (carcinoma, highly likely). Suppurative inflammation was also seen. Malignant epithelia neoplasia was detected in the samples from the hind limbs.
FIGURE 4: These ultrasound images demonstrate the cavitating lesions in the lung and hind limb muscles.
FIGURE 5: Amidst this population of neutrophils there were multifocal discrete clusters of oval cells. These had distinct cell borders and some had a slightly angular profile. They have a high nucleus to cytoplasmic ratio, a thin rim of mid blue cytoplasm and an oval, euchromatic nucleus, often containing multiple nucleoli. Some nucleoli were large and slightly bizarre. Within this population, there was moderate anisocytosis and mild to moderate anisokaryosis.

3. What is your diagnosis?

Our investigations were consistent with angioinvasive pulmonary carcinoma with posterior segment metastasis. The primary origin of the carcinoma was confirmed or strongly suspected to be of the lung in this case. Primary lung neoplasia is uncommon in the cat. A recent multicentre retrospective study revealed that 65 of 86 cats with primary lung tumours had evidence of metastasis. Ischemic chorioretinopathy and necrosis of the distal extremities, associated with primary bronchogenic carcinoma, appears to be a unique neoplastic syndrome in the cat. Primary pulmonary neoplasia should be considered in cats with evidence of chorioretinal infarctive lesions. Conversely, cats with suspected lung neoplasia, and/or distal extremity swelling or necrosis should routinely receive a critical ophthalmoscopic examination for evidence of lesions associated with vascular occlusion from metastasis.

Due to the disseminated nature of the disease along with the cat’s anorexia and weight loss, the owner opted for euthanasia.

Reference