

## IMAGING: WHAT IS YOUR DIAGNOSIS?

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### CASE HISTORY:

A 4-year-old spayed bitch was adopted from SPCA one year prior to presentation to the the Koret Veterinary Medicine Teaching Hospital of the Hebrew University (KVMTH). The owner complained of mildly enlarged lymph nodes during the past year which of late seemed to have increased in size. For the past few weeks she had been painting even at rest. Her appetite, urination and defecation were normal. Her demeanor was normal and she had not lost bodyweight.

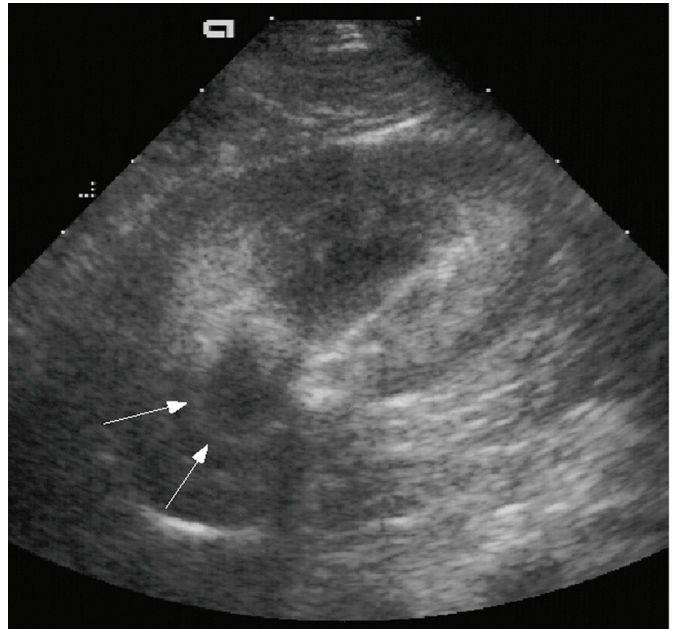
On physical examination the only significant findings were mildly enlarged lymph nodes. Vital signs were all within normal limits.

Complete blood count and blood chemistry revealed no remarkable findings.

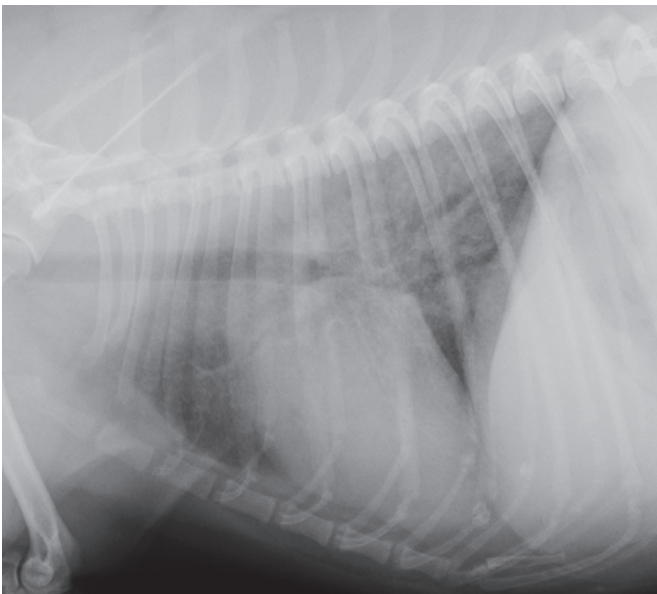
Ultrasound examination showed a very mild enlarged liver and few mildly enlarged mesenteric lymph nodes.

Thoracic radiographs and an ultrasound of the left kidney are presented in figures 1-3.

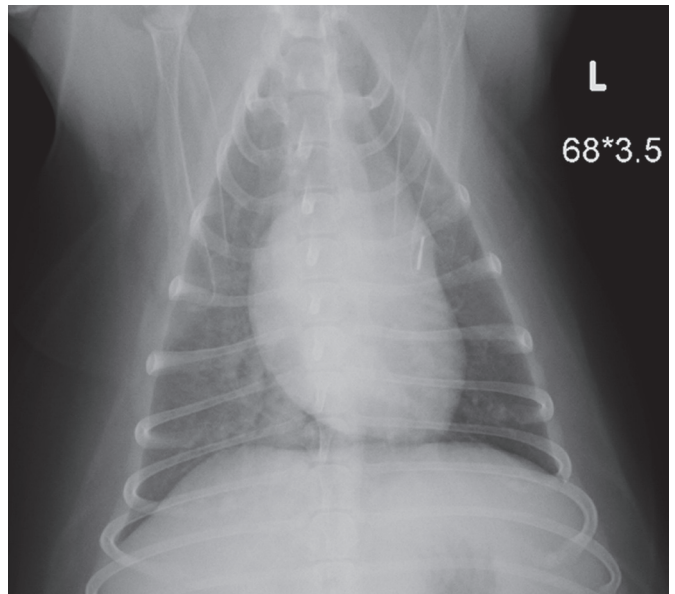
1. Describe the abnormal findings on the images attached.
2. What are the differential diagnoses for the findings?
3. What do you consider to be the diagnosis?



**Fig. 2:**  
 Ventro-dorsal thoracic radiograph of a 4-year-old spayed bitch



**Fig. 1:**  
 Lateral thoracic radiograph of a 4-year-old spayed bitch



**Fig. 3:**  
 Ultrasound of the kidney of a 4-year-old spayed bitch

For the diagnosis and interpretation turn to Page 38

**IMAGING FINDINGS AND INTERPRETATION:****Findings:**

Ultrasound image: The kidney was of normal size and contour with an echogenic line parallel to the corticomedullary junction.

Thoracic radiograph: There was a diffuse non-structural interstitial lung pattern. The heart size was normal.

**DIFFERENTIAL DIAGNOSES:****Ultrasound:**

The echogenic line is termed the “medullary rim sign”. It is imaged in cases of nephrocalcinosis, acute tubular necrosis, chronic interstitial nephritis, ethylene glycol toxicity, and often seen in cases of lymphosarcoma.

**Radiograph:**

Diffused non-structural interstitial pattern has many differential diagnoses some are not pathological like end-expiration, age related, obesity and others. Pathological changes include pneumonia, hyperadrenocorticism, prolonged steroid therapy, ARDS, coagulopathies, metastasis and lymphosarcoma.

**COMMENTS:**

Biopsies were taken from the peripheral lymph nodes and a definitive diagnosis of lymphosarcoma was made.

One of the manifestations of lymphosarcoma is a diffuse non-structural interstitial lung pattern and usually accompanies mediastinal lymphadenopathy (not in this case). Sometimes the pulmonary changes are the only manifestation of lymphosarcoma.

The “medullary rim sign” in the kidneys were bilateral and is usually a consequence of hypercalcemic nephropathy due to lymphosarcomas.

Treatment for lymphosarcoma was initiated with improvement.

**REFERENCES:**

1. Handbook of Small Animal Radiological Differential Diagnosis. Ruth Dennis , W.B. Saunders , 1st edition , 2001.
2. Diagnostic Radiology and Ultrasonography of the Dog and Cat. Kevin Kealy , Hester McAllister , W.B. Saunders, 5th edition , 2009.