WHAT IS YOUR DIAGNOSIS?

An eight year old, male entire Boxer dog was presented to the R(D)SVS Internal Medicine Service for investigation of lethargy, reluctance to move, weight loss and pyrexia of one months’ duration. Clinical examination revealed a stiff gait and body weight of 22kg, with a body condition score of 3/9. There was generalised discomfort when handling the legs but no joint effusions were palpated and no specific joint pain except on full extension of the hips. Radiographs were taken of the forelimbs and revealed the following abnormalities.

1) Describe the changes seen and what is your imaging diagnosis?

2) What is your next step?
1. The changes seen are most obvious on the lateral aspect of the metacarpal bone of digit five where periosteal new bone formation can be seen. This forms nodular periosteal proliferation which is perpendicular to the cortex. The cortex itself is unaffected. Smooth periosteal proliferation is seen on the lateral aspect of the distal ulna. These changes are consistent with a diagnosis of **Hypertrophic Osteopathy** (a.k.a. hypertrophic pulmonary osteopathy, Maries disease).

2. Since hypertrophic pulmonary osteopathy occurs most commonly secondary to intra-thoracic disease, the next step when seeing these bony changes is to perform thoracic radiography. In this case, a mass was evident (see below) in the cranial thorax which proved to be a carcinoma on fine needle aspiration.
Discussion:

Hypertrophic osteopathy is a syndrome characterised by increased peripheral blood flow, overgrowth of vascular connective tissue overlying the periosteum with consequent osteoneogenesis of bone spicules on the periosteum. Typically this occurs secondary to primary lung tumours or metastases. However, it has also been recorded secondary to intra-abdominal neoplasia such as rhabdomyosarcoma of the urinary bladder, transitional cell carcinoma of the kidney and Sertoli cell tumour. Hypertrophic osteopathy has also been recorded secondary to various non-neoplastic conditions such as infective endocarditis, oesophageal granulomas secondary to Spirocerca lupi, and inflammatory lung disease so the finding of the typical limb radiographic finding is not always synonymous with neoplasia. Treatment of the underlying conditions (if treatable) can lead to quick resolution of the pain, lameness and swelling associated with hypertrophic osteopathy but the bony lesions themselves can take several months to regress.

References:

2. Peeters D, Clercx C, Thiry A, Hamaide A, Snaps F, Henroteaux M, Ogilvie GK, Day MJ. Resolution of paraneoplastic leukocytosis and hypertrophic osteopathy after resection of a renal transitional cell carcinoma producing granulocyte-