

# HYPERTROPHIC OSTEOPATHY IN A DOG SECONDARY TO INTRA-THORACIC LESION: A CASE REPORT

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[Received: 26.6.2014; Accepted: 29.11.2014]

Hypertrophic osteopathy was initially described by Marie and Bambergerand and the disease has been reported to be common in humans and dogs (Lenehan and Fetter, 1985). Hypertrophic osteopathy is a rare pathologic disease process and is secondary in nature, which commonly occurs due to neoplastic or infectious masses in the thoracic cavity or less often, a mass in the abdominal cavity. In response to the presence of mass (es), bilaterally symmetrical, non oedematous soft tissue swelling affect the distal portions of all forelimbs (Hara *et al.*,1995).These are soon accompanied by a characteristic diffuse periosteal new bone formation on the outside of the diaphysis of the long bones of the limbs, without destruction of cortical bone leading to severe lameness in dogs (Makungu *et al.*, 2007).Because the masses associated with the disease generally occur in the thorax the disease is also known as hypertrophic pulmonary osteopathy. This clinical



**Fig.1: Photographs showing oedematous forelimb and hind limbs**

The mechanism of development of hypertrophic osteopathy is not completely understood (Makungu *et al.*, 2007) and several theories have been proposed to explain the pathology (Dunn *et al.*, 2007). It occurs secondary to intra thoracic lesions that

communication reports clinical case of hypertrophic osteopathy secondary to Thoracic lesion in a dog.

A seven year old Pomeranian dog was presented to the Department of Surgery and Radiology, Veterinary College Shivamogga, with the main complaint of loss of body condition, anorexia, lameness and swollen limbs (all four limbs). On examination bilaterally symmetrical non oedematous soft tissue swelling observed on both hind limbs and lameness were observed (Fig. 1) and no other abnormality was detected. Radiographic examination of the limbs and the thoracic cavity revealed periosteal new bone formation along the shafts of most of the long bones(Fig. 2 and 3) and an oval-shaped radio dense caudal mediastinal mass(Fig.4). Based on history, clinical signs and radiographic findings the condition was diagnosed as hypertrophic osteopathy secondary to thoracic lesion.



**Fig. 2: Radiograph of elbow and below showing periosteal reactions**

are either pulmonary or non pulmonary in origin (Lenehen and Fetter, 1985). Increase in peripheral blood flow in the distal half of the extremities and subsequent formation of excessive amount of highly vascular connective tissue is responsible for periosteal

bone formation (Palmer, 1993). Hypertrophic osteopathy also been reported in dogs



**Fig. 3: Radiograph of Stifle and below showing Periosteal reactions**

associated with bronchial foreign body (Caywood *et al.*, 1985). The clinical signs



**Fig. 4: Radiograph of Thorax showing radiopaque mass at the caudal mediastinum**

observed in this case, and the periosteal new bone formations observed radiographically, have also been reported in other dogs with hypertrophic osteopathy (Makungu *et al.*, 2007). As reported by Dunn *et al.*, (2007) and Makungu *et al.*, (2007), hypertrophic osteopathy has been reported in different species and is generally associated with primary or secondary neoplasms in the lung or thoracic cavity. Reports of hypertrophic osteoarthropathy associated with non-neoplastic thoracic lesions are less frequent and may include inflammatory lung disease, heart-worm disease, bacterial endocarditis, oesophageal disease secondary to *Spirocercalupi* infestation, eosinophilic bronchitis, pulmonary abscess and congenital megaesophagus (Watrus and Blumenfeld, 2002). Hypertrophic osteopathy in dogs may be treated by removal of the primary underlying cause (Lenehan and Fetter, 1985). Although successful surgical management of hypertrophic osteopathy has been described (Hara *et al.*, 1995), treatment in this case was not considered because of the deteriorated body condition of the dog. It is believed that early diagnosis and removal of the foreign body might have assisted in the successful management of this case.

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