

OSTEOSARCOMA OF DISTAL ULNA IN A GREAT DANE DOG - A CASE REPORT

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Introduction

Osteosarcoma is a malignant tumor of mesenchymal origin that produces osteoid. It accounts for approximately 85 % of all primary canine bone tumors and is almost exclusively observed in large or giant breeds (Ru *et al.*, 1998). Male dogs are more predisposed for osteosarcoma. The median age of onset of clinical signs ranges from 8 to 10 years, although it also occurs in younger dogs (Evans, 1983). Dogs are often presented with a history of lameness or in some cases with a pathologic fracture of the affected bone. Predilection sites are the weight-bearing regions of the long bones (humerus, femur, radius, tibia and ulna) with approximately 25 % of tumors arising in the axial skeleton including the flat bones of the skull, ribs, vertebrae, sternum, and pelvis (Dickerson *et al.*, 2001). Signalment, history and radiographic appearance of the lesion can be used to make tentative diagnosis. The definitive diagnosis is made by histological examination. Dogs with Osteosarcoma are treated by amputation, adjuvant therapy, chemotherapy and radiotherapy (Ru *et al.*, loc. cit.). Present paper reports the osteosarcoma of distal Ulna.



Figure 1: Swelling in the left forearm.

Case history and clinical findings

A five year old male intact Great Dane dog was presented to Department of Veterinary Surgery & Radiology, Veterinary College, KVAFSU, Bangalore with the history of swelling in the left distal forearm (Fig. 1). Swelling was increased gradually for last one month and limping was observed by the owner. On examination of the affected region, palpation of the swelling evinced pain and non weight bearing of the affected leg. Radiography of the left radius and ulna revealed combined destructive and lytic lesions of distal metaphyseal ulna which appeared as sun burst (Fig. 2). Survey radiography of the lateral thorax showed no evidence of pulmonary metastasis. A fine-needle aspiration and cytology of lesion revealed polygonal to spindloid cells with pleomorphic oval nuclei and bone matrix with cells with lacunae confirmed it to be Osteosarcoma. Haematology and biochemical analysis revealed severe anaemia (6.3 g%), leucocytosis ($18,400/\text{mm}^3$) with absolute lymphocytosis ($6300/\text{mm}^3$). Serum Alkaline Phosphatase (SALP) activity was 180 U/L. Other biochemical parameters were within the normal range.



Figure 2: Radiography of the left distal radius and ulna showing lytic lesions of distal ulna.

Treatment and discussion

Amputation of the affected limb was advised to owner but the owner declined. A combination of Cisplatin (60mg/m², IV) and Doxorubicin hydrochloride (15mg/m², IV) were given once in three weeks for five treatments along with Piroxicam (0.3mg/kg orally every 24 hours interval) and Clindamycin (11mg/kg, orally, every 12 hour interval) for 21 days. Canine osteosarcoma develops in large breeds, and body weight gain, constitutes the highest risk factor for osteosarcoma (Thompson and Pool 2002). The present case was Great Dane of 52 kg body weight. In dogs, about 75% of canine osteosarcomas arise in limb bones, about 2 times more frequently in the forelimbs than hindlimbs. Pulmonary metastases occur in most dogs with osteosarcoma of the limbs (Slayter *et al.*, 1994). In this case there was no pulmonary metastasis which was suggestive of early stage of disease. Serum ALP levels are often elevated in dogs with osteosarcoma (Thompson and Pool 2002). The serum ALP level in the present case (180 U/L) was much higher than the normal (4 to 49 U/L). Combination of cisplatin and doxorubicin provides better survival time than cisplatin/doxorubicin alone (Boerman *et al.*, 2012). There was no increase in the swelling for the follow up period of five months.

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