



Chondrosarcoma in A Non- Descript Dog

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ABSTRACT

A five and half year old male Non-descript dog was brought with a history of swelling on the right elbow joint. Gross examination revealed hard swelling of about 24 x 12 cm in size was seen at the level of neck of the scapula to the whole humerus bone. Upon incision, multiple small to medium sized gray white firm nodules and central gray coloured areas were seen. Irregular chalky white foci of calcified neoplastic matrix were seen. Microscopical examination revealed that the mass contained pleomorphic chondrocytes with mitotic figures and hyalinized chondroid basophilic matrix. The eosinophilic round to oval nuclei was enlarged with prominent nucleoli and some of the cells contained double nuclei.

KEYWORDS: Non-descript dog, Chondrosarcoma, Scapula, Humerus, Radiography, Pathology

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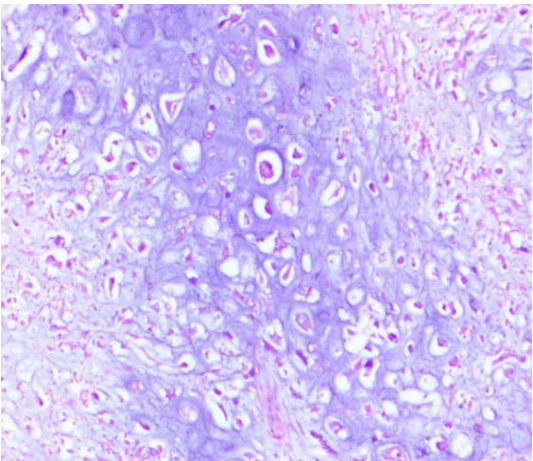
INTRODUCTION

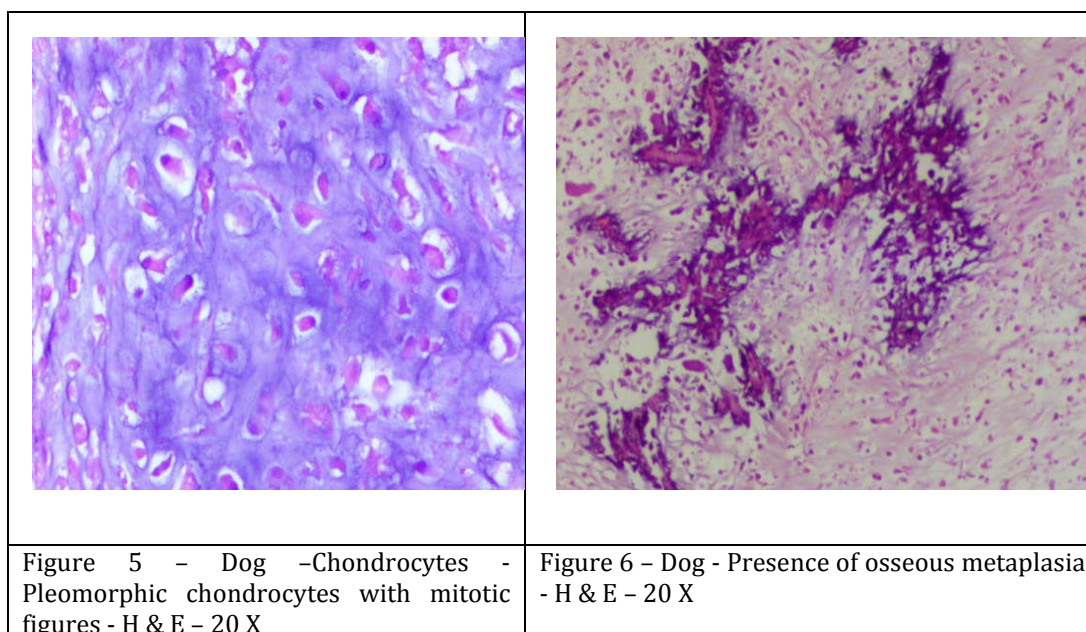
Primary bone tumors are common in dogs when compared to the other domestic animals. Osteosarcoma has the highest incidence, followed by chondrosarcoma which is the second most common accounts for approximately 10% of all primary bone tumours. They are most common in middle-aged to old aged large-breed dogs [2]. Chondrosarcoma is a malignant tumor classified under cartilage forming tumors. They are not infrequent in dogs. No age predilection has been reported so far. But breed predisposition can be attributed to Boxers and German Shepherds [4]. Most commonly, the flat bones and the metaphyseal portion of the long bones are involved. Chondrosarcomas are differentiated by the presence of cellular ad pleomorphic tumor tissue and cells with plump, large or double nuclei. Sometimes, it becomes difficult to differentiate from osteosarcoma and chondroma due to cartilaginous differentiation. The diagnosis of bone tumors by and large aided by clinical, radiological and pathological techniques. Correlation of the results obtained from the above said techniques greatly aid in the differential diagnosis among the various bone tumors described in dogs [1]. Hence, the present paper reports the occurrence of chondrosarcoma in the scapula and humerus bone in a non-descript dog.

CASE PRESENTATION

A five and half year old male Non-descript dog was presented with a history of swelling on the right elbow joint (Fig.1). Radiographic examination of the right shoulder revealed moth eaten appearance with loss of bone contour. There was periosteal reaction with cortical remodeling in the proximal humerus (Fig.2). Gross examination revealed hard swelling of about 24 x 12 cm in size was seen at the level of neck of the scapula to the whole humerus bone. Upon incision, multiple small to medium sized gray white firm nodules and central gray colored areas were seen with slimy in consistency. Irregular chalky white foci of calcified neoplastic matrix were seen (Fig.3). Blood clots and haemorrhages were also observed. The mass was collected in 10 per cent formalin for histopathological examination.

Microscopical examination revealed that the mass contained pleomorphic plump chondrocytes with hyperchromatic nuclei and mitotic figures. Hyalinized chondroid basophilic matrix was observed. Trabecular structure was seen within the sheets of chondroid tissue. Chondroid matrix was surrounded by stromal spindle shaped cells. The eosinophilic round to oval nuclei was enlarged with prominent nucleoli and some of the cells contained double nuclei (Fig. 4,5,6). Neoplastic foci were surrounded by blood clots and haemorrhages.

	
<p>Figure 1 - Dog -Chondrosarcoma - Swelling on the right elbow joint - 24 x 12 cm size.</p>	<p>Figure 2 -Dog - Chondrosarcoma - Radiograph - Moth eaten appearance and loss of bone contour in proximal humerus</p>
	
<p>Figure 3 - Dog -Chondrosarcoma - Multiple grey white firm nodules</p>	<p>Figure 4 - Dog -Chondrosarcoma - Pleomorphic chondrocytes with hyalinized chondroid basophilic matrix - H & E - 10 X</p>



DISCUSSION AND CONCLUSION

Chondrosarcoma was recorded in a 5½ year old dog is in agreement with early reports of mean age of tumour occurrence of about 5.9 to 8.7 years. Chondrosarcoma was observed in medium to large breeds particularly boxer, German shepherds, Golden Retriever and various mixed breeds but it was rare in small and giant breeds while in the present case, it is reported in a Non-descript dog. The tumour was usually recorded in flat bones while in another study, the tumour was recorded in the appendicular skeleton of dogs. In the present case, the tumour was recorded in scapula and humerus bones. No metastasis was observed as in case with the previous reports stating the metastatic rate of chondrosarcoma to be only 20 percent. The presence of pleomorphic plump chondrocytes with hyperchromatic single to binuclei and mitotic figures in the present case is in agreement with the earlier reports [3].

Based on the gross and histopathological examination, the bone mass was confirmed as chondrosarcoma. Chondrosarcoma occurrence could be due to the multiple cartilaginous growths or protuberance which might have developed to a tumour.

To summarise, the chondrosarcoma was recorded in the scapula and humerus bone of non-descript dog and its pathology is presented.

REFERENCES

1. Popovitch, C.A., Weinstein, M. J., Goldschmidt, M. H. and Shofer, F.S. (1994). Chondrosarcoma: A retrospective study of 97 dogs (1987-1990). *J.Amer.Anim.Hosp.Assoc.*, 30: 81-85.
2. Schmid, T., Hilbe, Ohlert, M. S. and Nuss, K. (2010). Chondrosarcoma in the humerus of a goat. *Vet Comp.Orthop.Traumatol.*, 4: 273-276.
3. Thompson, K.G. and Pool, R.P. (2002). Tumors of Bones. In: *Tumors in Domestic Animals*. Ed. D.J.Meuten, 4th Edn. Wiley India Private Ltd., New Delhi, pp: 283-294.
4. Thompson, K.G. and Pool, R.P. (2014). Tumors of Bones. In: *Tumors in Domestic Animals*. Ed. D.J.Meuten, 4th Edn. Wiley India Private Ltd., New Delhi, pp: 283-294.

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