Appendicular chondrosarcoma in cats: pathological differences from dogs, the actual animal model to human chondrosarcoma.

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Introdução

Introduction: Chondrosarcoma (CSA) is the second most common primary bone tumor in dogs (5%-10%), as in humans. In cats, it is the third, after fibrosarcoma[1,2]. Whether in dogs or cats, CSA occurs on flat bones (± 60%), with slower growth and metastatic rate than osteosarcoma (OSA). Aggressive resection provides long-term survival or cure in both species[1,2,3]. Canine CSA is similar to human CSA, considered its animal model[1-5]. However, comparison including data from feline cases, regardless of its rarity, is overlooked.

Objective: To preliminarily analyze clinical, radiographic and pathological findings in canine and feline CSA from four clinical cases, noting similarities and differences between species. Then, to compare these features with human CSA under the most adequate animal model of spontaneous disease perspective.

Casuística e Métodos

Methods: Study approved by UFF Ethics Committee in Animal Use (protocol 8541040818). Inclusion criteria was the same or most similar affected location. Hence, four appendicular CSA from two dogs and two cats were revised from LAPV-UFF archives. Canine CSA were from tibia and feline CSA from femur, comprising pelvic limb. Clinical, radiographic and pathological data was retrieved, analyzed and compared to human CSA from medical literature. Results were evaluated by descriptive statistical tools.

Resultados

Results: One dog was female and Siberian Husky; both cats and the other dog were male, of non-specific breed (NSB). Female dog was 6-year-old, male dog was 10-year-old and cats were 7 and 10-year-old. All included animals were middle-age to senior. Radiographically, all lesions presented radiolucent pattern, with cortical bone rupture and no evident extra-osseous component. All animals were treated with amputation only, according to medical records. Histological CSA section, stained with hematoxylin-eosin, were revised by the same pathologist, blindly from clinical and radiographic information. All CSA were central. Canine CSA were well-differentiated as well as one feline CSA (Figure 1 A and B). One feline CSA was poorly differentiated (Figure 1C). Feline CSA was more pleomorphic, with moderate anisocytosis and had more giant cells than canine CSA.

Resultados

According to medical records, both dogs developed pulmonary metastasis within a year after surgery. One cat had no signs of metastasis 1,5 year later. One cat was lost in follow-up, without metastasis information.

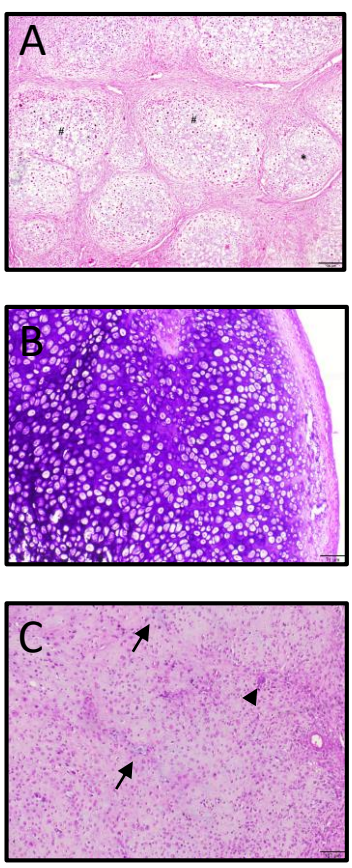

Figure 1: Photomicrography, CSA: (A) Canine, Siberian Husky, proximal tibial metaphysis: well-differentiated CSA, with islets of neoplastic chondrocytes, surrounded by connective tissue. Initial central mineralization process is noted (hashtag). (B) Feline, NSB, distal femoral metaphysis: well-differentiated CSA, presenting dispersed, malignant chondrocytes, surrounded by intensely basophilic, neoplastic chondroid matrix. (C) Feline, NSB, femur: poorly differentiated CSA, a mildly differentiated region of interest (ROI) presenting neoplastic chondrocytes surrounded by mesenchymal matrix with initial chondroid differentiation (basophilic areas, arrow). Right side presenting mesenchymal ROI. A giant cell is noted (arrow head).

Conclusões

Conclusions: Canine and feline CSA were pathologically different. In well-differentiated CSA, only dogs developed metastasis within a year. Unfortunately, the cat with poorly differentiated CSA was lost in follow-up. Despite pleomorphism and anisocytosis, high giant cell number can reflect good prognosis in feline CSA, similar to recent reports of human OSA[6]. Feline CSA pathological differences can help further studies about metastasis development, despite dogs being considered the animal model to human CSA.

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Contato

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