ANATOMO-CLINICAL ASPECTS OF OSTEOSARCOMAS IN DOGS AND CATS

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Summary

The authors describe 19 cases of osteosarcomas in dog and cat, presented at the Faculty of Veterinary Medicine in Bucharest between 2008-2009 for diagnosis and therapy. Clinical examination followed by radiological examination of the modified area was used. The certitude diagnosis was established after cytomorphologic exam of the biopunction achieved with a fine needle into the affected region. Following this examination were described 4 morphocytologic forms of osteosarcoma. They are:
- 5 cases of osteocitar osteosarcoma
- 8 cases of osteoblastic osteosarcoma
- 4 cases of osteoclastic osteosarcoma
- 1 case of condrosarcoma

Key words: osteosarcoma, bone tumors, dog, cat

The frequency of these neoplastic forms of malignancies is generally moderate in pets. The most frequent type is osteoblastic osteosarcoma. From the study of the two species (canine and feline), the incidence of bone cancer in canines is more prone to disease.

Data from literature are generally modest, indicating that differences primarily are relating to the primary site of neoformation. So, this neoformations are belonging especially to the long bones. Short bones, cranio-facial bones, vertebrae, sacrum, sternum and soft tissue extra bone territories are affected in a more reduce percentage. After surgical removal of a bone neoplasm, the evolution of animal to exitus is an average of about one year. Metastasis occurs in over 90% of cases, at pulmonary level.

Materials and methods

Within a year we have investigated 19 cases of osteosarcomas (17 canine and 2 feline). The general appearance of the syndrome is characterized by apathy, anorexia and weight loss, there are issues related to the clinical syndrome with focal deformation the affected region without sensitivity to palpation and instauration of a certain degree of limp.

By palpation is found that the tegumen has no deep adherence to plans. Clinical examinations were followed by X-ray examination of the bone to see the
size and the extent of injuries, and the lung to identify possible metastasis. To confirm the diagnosis, including cytomorphic shape aspirate biopsy with a fine needle of the neoformation was practiced. Fingerprints obtained were colored panoptic (MGG) and were read under a microscope.

After establishing positive and differential diagnosis and after therapeutic surgery, has continued polychemotherapy based on established protocols, which was potentate with poor water in the 60 ppm deuterium.

Results and discussions

Cytomorphologic analysis of the case has highlighted the following:

The most common form of osteosarcoma is the osteoblastic sarcoma (8 cases, approximately 50%). Proliferate cellular elements are slightly differentiated, anaplastic and atypical multiple divisions. The cells are large size > 30 µ round or ovalar shape having placed excentric nucleus with a dense cromatin allowing to view of 2-4 nucleols. Cytoplasm is broad and intense bazophil. It contains vacuola, and hidroxiapatatin inclusions.

A second cytomorphologic form of osteosarcoma as incidence is osteocytic osteosarcoma (6 cases approx. 30%). The proliferate cell is osteocyte, with small excentric nucleus, tachicrom. Nucleols are screened; cytoplasm is wide and mostly bazophil. Cells were rarely mitosis and generally there is good cell differentiation (fig.1).

The third cytomorphologic form is classified in osteoclastic osteosarcoma category (approximately 4 cases. 20%). This cell has a form of high-grade malignancy, along with condrosarcoma (fig.4). Anaplastic cell and gigantism are intensely expressed, along with cells in atypical mitosis (fig.2).

The most rare cytomorphologic form of osteosarcoma is encountered within the condrosarcoma (or osteocondrosarcoma), which along with osteoclastic osteosarcoma are the "peak" of malignancy (1 case approximately 5%). Cell proliferation is particularly polymorph with high anaplastic and gigant cell (fig.3).
Fig. 1. Osteocitar osteosarcoma

Fig. 2. Osteoblastic osteosarcoma
Fig. 3. Osteoclastic osteosarcoma

Fig. 4. Condrosarcoma
Conclusions

Osteosarcoma in canide incidence is higher than the feline. In terms of appearance cytomorphologic form of osteoblastic osteosarcoma is the most frequent.

The most malignant form of cytomorphologic bone sarcoma is condrosarcoma and osteoclastic osteosarcoma.

Condrosarcoma (osteocondrosarcoma) is the rarest form of cytomorphologic bone sarcoma.

References