EXTRASKELETAL OSTEOSARCOMA IN DOGS: PRESENTATION OF TWO CASES

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Summary

Two cases of extraskeletal osteosarcoma are presented with different localization. A neoplastic form localized in the peritraheal area was emphasized in a six years German shepherd male dog and another one at the mammary gland of a thirteen years old Teckel female dog. The radiographic images were emphasized in the areas of high radioopacity at the level of soft tissues in the areas mentioned, but histologically is the extraskeletal osteosarcoma.

Key words: extraskeletal osteosarcoma, dog

Osteosarcomas are malign tumors of the bony tissue with a higher degree of metastasis (1, 4). Histologically they are classified into: osteosarcoma with fibroblastic difference, osteosarcoma with condroblastic difference, fibroblastic and telangiectatic difference. Considering the radiographic aspect, there are: osteoclastic sarcoma (destroyers), osteogenic (productive) or mixed. Considering the place they develop, they classify into: skeletal osteosarcoma and extraskeletal osteosarcoma (6, 7).

Extraskeletal osteosarcoma represents a histologic entity which generally affects aged animals (the medium age is 10.6 - 11.5 years) (5). Whereas skeletal osteosarcoma present a certain breed idiosyncrasy affecting frequently large size dogs, the extraskeletal ones can be met in small size animals. From the histologic point of view extraskeletal osteosarcoma are neoplastically modified. Cytologically they can be considered pure forms consisting only from bony type cells either mixed containing also besides bony cells, condrocytes, fibrocytes and adipocytes presenting differentiated aspects.

The lowest frequency of extraskeletal osteosarcoma among the bony tumors found in the clinics of our faculty represented the reason of this paper.

Materials and methods

Two cases clinically, radiologically and histopathologically evaluated were discussed in the Clinics of the Faculty of Veterinary Medicine Bucharest: a six years old dog, male, German shepherd breed, and another one, thirteen years old female, Teckel breed.

The radiological examination was performed under lateral incidence but later, for the histological exam, samples were prelevated from modified tissues and
set in paraffin. 4-6µ sections were taken and stained by blue-methyl hematoxiline-eozine method.

Results and discussions

Case number one: German shepherd male dog, six years old with a tumefaction in the fore third and middle part of the vertebral cervical region.

At anamnesis the animal presented pharyngeal dysphagia and breathing dyspneea at effort. At palpation, high sensitivity and firmness at the level of the tumefied area was found out.

The radiographic examination pointed out the radioopaque peritracheal in the fare and middle ventral cervical region (fig. 1). Later on, at the owner’s request, the animal was euthanased the necropsy followed and histologic examination for certifying the diagnosis. Numerous osteoclastes and disseminated condrocytes were histologically found in the tumoral stroma (fig. 2) certifying the diagnosis of osteosarcoma and extraskeletal osteoblastic.

![Fig. 1. Peritracheal radioopaque milliary areas (arrows)](image1)

![Fig. 2. Disseminated osteoclastes (arrow) in the tumoral stroma - osteoclastic extraskeletal osteosarcoma (HEA, x10)](image2)

Case number two: Teckel female, thirteen years old, presented tumors at M2, M3 and M4 level of the left mammar chain. Milliar zones with high radioopacity at the level of the left mammar chain in the tumor mass (fig. 3). At the owner’s request the tumor mass was taken out and samples were taken for the histologic exam for a certain diagnosis. Histologically walls bony with gaps and osteocytes were found out alternating with areas of epithelial cell hyperplasia with anisocitosis. The diagnosis was extraskeletal osteosarcoma at the level of the mammary gland (fig. 4).
Fig. 3. Radioopaque milliary areas at the level of the left mammary chain (arrows)

Fig. 4. Osteosarcoma giant cell type - extraskeletal osteosarcoma (HEA; x20)

Extraskeletal osteosarcoma has a low frequency especially met in dogs and very rarely in cats. A study carried out by Meuten (2002) within ten years pointed out the presence of extraskeletal osteosarcoma in 1% of diagnosed cases (4).

The localization of this lesional type can be extremely different (skin, subcutaneous tissue, spleen, urinary duct, liver, muscle, eyes, thyroid gland) but the data in the speciality literature point out a greater frequency of mammary extraskeletal sarcoma (64%) (2). The biologic behavior of those two forms of osteosarcoma (skeletal and extraskeletal) also records other differences, so though the phenomena of metastasis of extraskeletal osteosarcoma are common, the lungs do not represent the favorite organs for metastases as in the skeletal osteosarcoma (3).

The histological examination permitted the differential diagnosis between verruca extraskeletal osteosarcoma and the forms of bony metaplasis were typical unmodified neoplastic bony cells are pointed out.

Conclusions

The radiographic and histological examinations allowed the diagnosis the diagnosis of extraskeletal osteosarcoma in two dogs of different breeds and ages representing a very rare form of neoplastic process of the hard tissue.

References
