

Canine “high grade – low grade” orofacial fibrosarcomas – a retrospective analysis of 70 cases



Tierklinik Hofheim

Helene Paul, Dr. Martin Kessler

Hofheim Small Animal Clinic, Katharina Kemmler-Str. 7, 65719 Hofheim, Germany

INTRODUCTION

Fibrosarcomas can be subgrouped based on their histologic grade into high and low grade tumors. In 1994, a distinctive category called “biologically high-grade, histologically low-grade fibrosarcoma” (“high grade – low grade fibrosarcoma”) was described in a series of 25 dogs by Ciekot et al. (J Am Vet Med Assoc. 1994; 204: 610–615). This tumor is characterized by histologically highly differentiated cells with only little or no pleomorphism or other cellular morphologic characteristics of malignancy, despite clinically aggressive (invasive, destructive and in some cases metastatic) behavior. A strong breed predisposition in the USA was described in the first report with more than half of the cases originating in Golden Retrievers .

MATERIAL & METHODS

70 dogs diagnosed at Hofheim Small Animal Clinic with a „biologically high-grade, histologically low-grade fibrosarcoma“ were analyzed regarding their epidemiologic, clinical, and prognostic characteristics. Computed tomography was performed in 50 patients and imaging findings were compared to „classic“ oral fibrosarcomas.



Typical high-grade low-grade fibrosarcoma on the rostralateral maxilla in a Retriever (breed predisposition)

RESULTS

80% of the cases were large breed dogs (> 25 kg BM), with 49mm and 31.5 mm, respectively). Pronounced contrast enhancement was present in the periphery of the tumor mass. The radiobiologic behavior was characterized by permeative osteolysis of adjacent jaw bone. Soft tissue mineralization was occasionally seen (25% of the cases).

In 70% of the patients the tumor presented as a tough, indolent mass, broad-based on the lateral (46%) or rostral (24%) maxilla, less frequently on the caudal maxilla, the mandible or other parts of the viscerocranium. 62 % of the patients showed an externally visible swelling in the face, predominantly laterally on the maxilla reaching up to the nasal dorsum. Primary ulceration did not occur. None of the patients had metastasis at time of diagnosis.

Therapy was chosen mainly based on tumor location and size. 15 patients were treated surgically (maxillectomy or mandibulectomy). Survival times (ST) ranged from 2 months to 5 years. 5 cases with surgery alone and 2 cases with surgery followed by radiation therapy remained tumor free throughout the rest of their lives (median documented ST 18, range 2 to 60 months). 25 patients received palliative radiation, and reached a median documented ST of 5 months (range, 2 to 36 months). 32 patients did not receive therapy, mostly due to tumor size or the owner's choice not to pursue therapy.



CT post contrast, ST-window: Broad based mass laterally on the maxilla with distinct peripheral contrast enhancement



Typical cortical permeative lysis in a high-grade low grade maxillary fibrosarcoma

CONCLUSION

This study confirms the predisposition of Golden Retrievers and potentially other Retrievers for this tumor. The tumor originates most commonly from the lateral maxilla and goes along with a typical cortical permeative lysis of the adjacent bone, which differs from the geographic bone lysis in „classic“ oral fibrosarcomas. Based on the clinical and CT characteristics it is proposed that the tumor originates from the periosteum. Surgical resection +/- adjuvant radiation therapy may provide the best prognosis, and can be curative in selected cases.