EPIDEMIOLOGICAL ASSESSMENT OF PERIODONTAL DISEASE IN DOGS AND CATS, AND ANALYSES OF THE MORPHOLOGICAL STRUCTURE AND INORGANIC COMPONENTS OF SUPRAGINGIVAL CALCULI IN DOGS

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Dental examinations were carried out on 85 dogs and 17 cats treated for periodontitis at the Veterinary Hospital of Hokkaido University between September 1988 and September 1990. The obtained data were statistically analyzed to assess the level of periodontal disease in dogs and cats. At the same time, 48 supragingival calculi were collected from 27 dogs. The morphological structure and the inorganic components of the dental calculi were analyzed by visible inspection, powder X-ray diffraction, polarizing microscopy and electron probe microanalysis.

1). There were more critical cases of gingivitis, stomatitis, calculus deposition and pocket formation in small and purebred dogs compared with those of large size or mixed breeds.

2). Clinical signs of gingivitis, stomatitis, calculus deposition and pocket formation in dogs became more severe with age.

3). Dogs which were given soft diets showed more severe gingivitis, stomatitis, calculus deposition and pocket formation than dogs on hard diets.

4). In dogs and cats calculus deposition was heavier on the posterior teeth than on the anterior teeth. Heavy calculus deposition was observed on the maxillary fourth premolar in dogs and on the maxillary third premolar in cats.

5). Pocket formation was remarkable around cuspid teeth, followed by the premolar teeth in dogs and cats.

6). Morphologically the supragingival calculi in dogs were usually rough and porous. Involvement of hairs, adhesion of streptococci, the existence of sheet-like protein structures and calcified micro-organisms were observed microscopically on the surfaces of calculi. Gross-sections of the calculi showed almost concentric laminations.

7). Apatite was the major inorganic component in the supragingival calculi in the dogs. Some calculi had calcite and / or whitlockite.