

TWO AND THREE-DIMENSIONAL COMPUTED TOMOGRAPHIC ANATOMY OF THE ENAMEL, INFUNDIBULUM AND PULP OF 126 EQUINE CHEEK TEETH: ABNORMAL TEETH

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Aims: The diagnosis of dental disease in the horse can be challenging. Computed Tomography (CT) is increasingly utilised in this field, however the CT appearance of the most significant dental diseases of horses; apical tooth infections and infundibular caries, has not yet been fully described. The aim of this study is to describe the CT appearance of the abnormal enamel, infundibulum and pulp of diseased equine cheek teeth. **Methods:** One hundred and twenty-six cheek teeth with eruption ages of between 0.5 and 19 years were assigned as normal or abnormal in terms of infundibulum, pulp and enamel on the basis of findings from radiography, occlusal surface morphology, two and three-dimensional CT and anatomic sectioning. The infundibular abnormalities were further categorised into one of six classifications on the basis of occlusal surface morphology and CT findings. Abnormalities of the enamel and pulp were assessed and described. **Results:** Of the infundibula evaluated 90% were abnormal on combined occlusal surface and CT examination. The infundibular classifications seen varied with age group. All infundibula over 6 years post-eruption were classified as abnormal. Enamel abnormalities observed included enamel hypoplasia and enamel prolapses. The CT appearance of apical tooth infections was seen to vary with differing aetiologies. **Conclusions and Practical Significance:** The high incidence of infundibular abnormalities in this study should encourage consideration of the role of the infundibulum in dental disease of the horse, more specifically in the aetiopathogenesis of apical tooth infections. This study has shown CT to be a highly sensitive imaging modality for dental disease, enabling subtle abnormalities such as changes in pulpar morphology to be detected. The results of this study will therefore facilitate the increased use of CT as a clinical diagnostic tool in dental disease and aid in the selection of the most appropriate treatment protocol.