

## ULTRASTRUCTURAL INVESTIGATIONS ON STIFLE JOINT ARTICULAR CARTILAGE IN DOGS TREATED INTRAARTICULARLY WITH SODIUM MONOiodoACETATE

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**Abstract.** The aim of the study was to investigate the fine ultrastructural changes in the articular cartilage occurring during the development of an experimental canine chemical model of osteoarthritis (OA, DJD) by intraarticular injections of sodium monoiodoacetate (MIA). A process of activation of the cells from the superficial layer was established. The transmission electron microscopy showed significant changes in the surface layers. The lamina splendens began to disrupt, at certain points became thicker and some parts of it were mixed with the underlying matrix. In the territorial matrix of the surface layers, the proteoglycan content was significantly increased. The characteristics of the collagen network changed together with the links between collagen fibres and proteoglycan complexes. In the isogen group of chondrocytes, processes of layer destruction and osteophytic formation took place on the 150<sup>th</sup> day after injection. A special attention was paid on changes involving proteoglycan complexes within the matrix of articular cartilage in order to establish the alterations resulting in formation of osteoarthritis. In conclusion, the progressive loss of chondrocytes resulted in histologic changes, including collapse of the cartilaginous matrix, fibrillation and osteophyte formation, similar to changes occurring in the naturally acquired OA.

**Keywords:** Ultrastructure, articular cartilage, osteoarthritis, dog, stifle, sodium monoiodoacetate.