Histology of carpus joint structures in juvenile mixed-breed goats

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The carpus is hinge joint, surfaces of which allow different degrees of movement. Due to the importance of this joint to ruminants and the fact that no histological descriptions were found on the species, the present study investigated normal histological aspects of the components of the carpus joint in juvenile mixed-breed goats in order to establish the normal parameters of this joint during this phase of life. Five cadavers of six-month old mixed-breed goats were used for the removal of the joint capsule, the medial collateral ligament and the cartilage of the carporadial bone of the carpus joint. The fragments were immediately fixed in Bouin solution for 12 hours and sent for histological analysis. 7 μm longitudinal sections of the fragments were stained with Hematoxylin-Eosin. The cuts were photographed using a digital camera coupled to a light microscope and described. The capsule is formed by dense, non-modeled conjunctive tissue, with a predominance of fibroblasts on the periphery in relation to the center, regions of adipose coxins and vessels. The medial collateral ligament is formed in the mid region by dense, modeled conjunctive tissues and vessels. The fibers are arranged longitudinally, with an undulated aspect, parallel to the fibroblasts and fibrocytes, with a high degree of organization. The presence of vessels was observed throughout the ligament, evidencing the high fibroblast activity in juvenile animals. The surfaces of the carpus joint are made up of hyaline cartilage, formed by chondroblasts and chondrocytes, which may be united as isogenic groups or arranged individually. These cells are distributed uniformly, with no distinction regarding their localization along the cartilage, except at the perichondrium, where the presence of isogenic groups is greater in quantity than isolated chondroblasts and chondrocytes. The histology of the structures in the carpus joint of juvenile mixed-breed goat confirms the aptitude for the growth and repair of these tissues.