

Canine autologous chondrocyte transplantation with periosteal flap for articular cartilage repair

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Abstract The healing process of articular cartilage is the main problem to treat articular defect. This due to the biology of cartilage which is known as non-regenerative tissue. Osteoarthritis mostly comes after cartilage has untreated-defect. The aim of this study is to use autologous chondrocyte transplantation for the treatment of articular cartilage defects in dogs. In spite of this, we had investigated ten dogs, 3-5 years old, five of them were treated with autologous chondrocyte transplantation with periosteal flap (T-group) and the others were treated with subchondral bone drilling (D-group). Then, follow-up for 5 months to determine: 1) the gait evaluation, 2) serum biomarker for cartilage metabolism including; chondroitin sulfate WF6 epitope (CS-WF6) and hyaluronan (HA), and 3) pathology of cartilage were including gross-pathology and histopathology. From the result, there was no significant difference in gait analysis between two groups, all dogs had normal gait within a week. The level of CS –WF6 and HA were not significant difference between ($p>0.05$). The gross pathology of cartilage from T-group was more complete repair than D-group significantly ($p<0.05$) and also histopathology in T-group showed better in integration of repairing tissue than D-group ($p<0.05$). It can be concluded that autologous chondrocyte transplantation is the

potential method in the repairing of articular cartilage defect. An application of this technique to study in human is under investigation.

Keywords : cartilage defect, autologous chondrocyte transplantation, canine
