

OP4 CELL ACTIVITY IN YOUNG ADULT HUMAN AUTOPSY CONDYLES, 18-31 YEARS. A SIGN OF GROWTH STIMULATION ALTERNATIVE TO SURGICAL TREATMENT

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AIMS: To determine the possibility of stimulated adaptive growth in human condylar cartilage and bone tissue changes in relation to age in a large sample of human autopsy condyles.

MATERIALS AND METHOD: Human condylar cartilage and bone were examined in autopsy material comprising 20 individuals aged 18-31 years. The condyles were embedded in methylmetacrylate, cut on a microtome and stained. Histomorphometry, scanning electron microscopy and cartilage histology were used to analyse the tissue.

RESULTS: The fibrocartilage tissue could clearly be described in three zones, the hypertrophic zone arranged in columns, the proliferative zone, and the fibrous zone with collagen fibres. Chondrocytes could be seen 'caught' in the underlying cancellous bone tissue with remodelling activity. There was a statistically significant correlation between age and fibrocartilage thickness, between age and hypertrophic chondrocytes, and between age and hypertrophic chondrocytes in bone.

CONCLUSION: Quantitative and qualitative investigations of the turnover activity in the fibrocartilage and the bone tissue indicated condylar growth potential until 30 years of age. The growth activity seemed to decline with age. The results show possibilities for biomechanical growth stimulation of the condylar tissue, ie. fixed Herbst treatment as an alternative to surgical treatment.