P53 and VEGF expression in human temporomandibular joint discs with internal derangement correlate with degeneration

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Aim: Temporomandibular joint (TMJ) disorders are one of the most relevant causes of chronic facial pain and disability. During histopathological conditions biomolecular mechanisms occur inducing histologic changes of the tissue itself. Human Tumor Protein p53 and Vascular Endothelial Growth Factor are related with cell-cycle control, angiogenesis and both play a central role during inflammation. The purpose of the present research was to investigate the immunoexpression and immunolocalization of Human Tumor Protein p53 and Vascular Endothelial Growth Factor in temporomandibular joint discs of individuals with internal derangement with anterior disc displacement in order to gain insights into the apoptotic and angiogenetic processes in the three bands of articular discs with or without reduction and compare them to the histological degeneration score.

Methods: Paraffin samples of eighteen displaced temporomandibular joint and four control discs were analyzed by immunohistochemistry for the above evaluations.

Results: Data showed a strong Human Tumor Protein p53 and Vascular Endothelial Growth Factor immunoexpression in the anterior and intermediate disc areas and a weak immunoexpression in posterior area of anterior disc displacement with reduction patients while anterior disc displacement without reduction patients demonstrated a weak Human Tumor Protein p53 and Vascular Endothelial Growth Factor immunolabelling in the anterior and intermediate areas and a strong immunoexpression in posterior band. These immunoexpressions correlated with histological degeneration score.

Conclusions: According to our results it can be assumed in that when the more histopathological changes in the disc are released, major levels of p53 and VEGF are produced.

References

Keywords