Histomorphological characteristics structure of elements of the temporomandibular joint at prolonged edentia of jaws

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*Introduction

*About 35% of the world's population have the pathology of the temporomandibular joint (TMJ). The most common TMJ pathology occurs in partial and full edentia of one or both jaws.

*Aim

*to investigate changes in the elements of the TMJ in partially edentulous jaws

*Methods

* Blocks of TMJ (right and left) were taken from 5 corpses aged 35 to 65 years with a variety of defects of dentition. These preparations were evaluated macroscopically, and then a histological study was conducted on them.

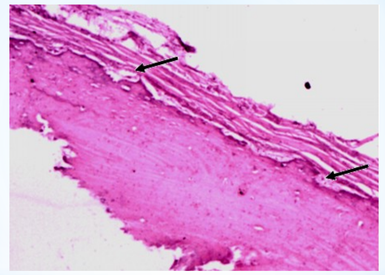
*Results

* In the tissue of hyaline cartilage of the mandible head lines of basophilic staining were detected, as a manifestation of uneven moderate mineralization. Multiple defects with small cavities were detected.
* Hyaline cartilage of the mandibular fossa of the temporal bone has undergone more expressed dystrophic and degenerative changes - destructive (necrotic) processes.
* In the capsule of the TMJ fibrinoid change of fibrous fibers and delamination were revealed. The changes in the structure of hyaline cartilage of the intra-articular disc were are most expressed in the lateral sections (in places of extension).
* Multiple microcracks were revealed and expressed collagenization intra-articular disc tissue. We determined the vascular invasion in the thickness and fibrous degeneration of the intra-articular disc.

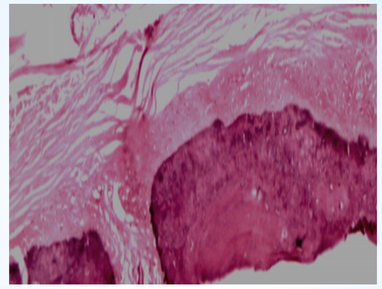
* Degenerative changes, stratification and thickening of the fibrous structures of the TMJ ligaments were also noted. We identified the signs of sclerosis and hyalinosis. Small ossifications with necrosis and lossing of the tissue at the their central part were detected in the soft tissue surrounding the outcapsule ligament of the TMJ.

*Conclusion

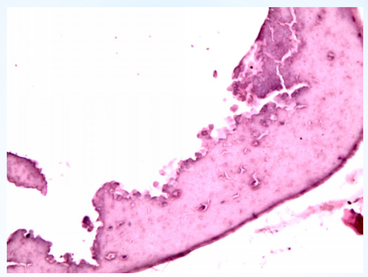
*Thus, the results of the histopathological studies have shown that defects of dentition lead to the development of significant dystrophic-degenerative changes of the structural components of the TMJ. At the same time it should be noted that the most pronounced degenerative and destructive processes observed in the tissue of hyaline cartilage of the mandibular fossa of the temporal bone, and ligaments of the joint.



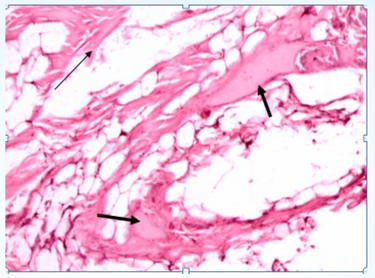
*hyaline cartilage of the head of the mandible: the upper edge of the surface layer of hyaline cartilage is rough and has small irregular burrs. H & E stain. Increased x100



*connective tissue capsule of the temporomandibular joint (the upper part of the figure): fibrinoid swelling and delamination of the fibrous fiber. H & E stain. Increased x 160.



*hyaline cartilage of the mandibular fossa of the temporal bone: areas of necrosis with destruction and loss of cartilage fragments. H & E stain. Increased x100.



*the soft tissue surrounding the out of capsule ligament of the TMJ: the formation of small ossification (indicated by arrows) in the thickness of the muscle-adipose tissue. H & E stain. Increased x100.