

Clinical study of changes of occlusal surface of dentitions in case of first permanent molars loss

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Summary

In order to study changes of the structure of occlusal surface of dentitions in case of first permanent molars loss the examinations of 58 persons in age of 18–50 years with extractions of 1–4 first permanent molars was performed.

The first permanent molars play an important role in the development and functioning of the maxillo-dental system, their position determines the ratio of dentitions (key occlusion by Engle) and height of the central occlusion, their occlusal surface is directing the plane for the articulatory movement of the mandible. According to the dispensary of research in recent years, the frequency of removal of first molars in the age of 16-20 years amounts 70% among the other permanent teeth bite. Therefore the problem of the sixth teeth loss remains relevant in the modern dentistry. As known that loss even of one tooth causes several changes in the dentition, we set ourselves the goal to explore the restructuring of occlusal surface of dentitions as a result of removal of different amounts of the sixth teeth. There were examined 58 people in the age of 18-50 years with the absence of 1-4 sixth teeth, which had not prosthesis, with occlusion of the first class by Engle, without generalized forms of periodontal destruction. For the dentitions with the lack of first molars are typical changes in position of neighboring to the defect teeth: defect located in the mandible usually occurs medial inclinations of the second, and together with it the third molar, rarely there are case displacements. For premolars are typical combined displacements – distal case displacements in combination with rotation, rarely – distal and oral tendencies. At the same on the upper jaw it occur dentoalveolar nomination of teeth opposite the

defect; as a result the saddle-backed deformation of the occlusal plane is formed in the area of this defect. In the presence of a defect on the upper jaw, displacements of the teeth next to the defect occurs medial rotational inclinations of second molars and distal or rotational displacements of the first and second premolars; dentoalveolar nomination for the the lower teeth, opposite the defect – is not typical; occlusal plane deformations in case of localization of the defect on the upper jaw are less pronounced than for the defects on the lower. For the the sixth bilateral removal teeth on the lower jaw is peculiar concave, "saddle-backed" form of occlusal plane by reducing the height of the lateral teeth in the area of the defect and nomination of the teeth opposite from the defect. When removing period of the sixth teeth is a few years it occur shortening of the dentition by the teeth displacement towards the defect. If there are single defects, two defects on the same side of different jaws or two cross defects – occurs asymmetrical ratio of dentitions in the position of central occlusion. For the absence of 3-4 first molars is marked by the considerable reduction of bite height in lateral areas by displacement and erasing of lateral teeth, and in the frontal area occurs the growth of value of chisel overlap and hypertrophy of alveolar process, often in conjunction with the protrusion displacement of the front group of teeth. For the loss of first permanent molars general pattern is displacement of the functional chewing center on the

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premolars, as evidenced by an increase in area of occlusal contacts on their protuberances. In the absence of one sixth tooth, two teeth on the same side of the opposite jaws or three teeth, a unilateral type of chewing is usually formed on the side opposite to the defect, or in that place where one of the the sixth teeth is saved. In cases with the absence of 3-4 sixth teeth often occurs forming of a group function on the working side of the jaw due to significant erasing of canines. Also characteristic is identification of supracontacts in the centric and eccentric occlusion. In the creation of centric supracontacts are usually involved tilted and advanced molars in the area of defect. With the increase of extracted sixth teeth increases the frequency of detection of balancing and hiperbalancing contacts in lateral occlusion. The working side

of the jaw is characterized by generic of lateral teeth and supracontacts of cutting edges on the front teeth. With increasing of the number of extracted first molars there is a tendency to erasing of premolars', canines' and front teeth's humps, showing the distal displacement of the mandible and the transfer of the main chewing function on the teeth located in the front of the defect. It identifies characteristics of functional overload of the teeth in the form of local inflammatory changes in the periodontal and hard tissue degenerative changes (pathological erasing, wedge defects, cracks and chips of enamel); the severity of clinical manifestations increases in direct proportion to the growth of the number of removed first molars.

Key words: First permanent molars. Dentoalveolar deformations. Occlusal relations.