EUROPEAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND MANAGEMENT STUDIES

VOLUME04 ISSUE01
DOI: https://doi.org/10.55640/eijmrms-04-01-39 Pages: 219-224

USING OF STUMP PINS IN PATHOLOGICAL ERASABILITY IN PATIENTS WITH PROGENIC OCCLUSION

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ABOUT ARTICLE

Key words: The temporomandibular joint, dysfunction, the topographic relationships of TMJ elements.

Received: 20.01.2024
Accepted: 25.01.2024
Published: 30.01.2024

Abstract: Stamped crowns are used when the crown is completely destroyed and cannot be repaired with fillings, inlays or half-crowns. Stamped crowns consist of two separate parts: an artificial tooth root with a support and a crown (covering structure) above it. However, in cases of abnormal bite, incorrect position of teeth or pathological erosion of teeth, the manufacture and use of such prostheses is fraught with certain difficulties. Therefore, in such cases, before the direct manufacture of a pin tab, crown or bridge prosthesis, it is necessary to carry out appropriate orthopedic (orthodontic) preparation for prosthetics.

INTRODUCTION

The purpose of this study was: to study the features of prosthetics in patients with pathological grade II and III dental erosions and in patients with anterior bite.

MATERIALS AND METHODS

21 patients aged 30 to 50 years were included in the study. Among them there were 12 patients with pathological erosion of hard tissues of teeth of II and III degree and 9 patients with anterior lobes of occlusion. Pre- and post-orthodontic tomograms of the temporomandibular joint were performed with pathological erosive linear occlusion of teeth of II and III degrees with a decrease in occlusal height and shortening of the lower third of the facial plane. Electromyography was used to detect dysfunction of the masticatory muscles. Orthodontic preparation was performed in patients with grade II and III occlusal height in the presence of signs of a decrease in occlusal height, shortening of the lower third of

the face and changes in the topographic relationships of TMJ elements. The latter was determined using tomographic images of the temporomandibular joint. On tomograms, the distal position of the articular head of the lower jaw in the articular fossa was observed (orthopedic training was also performed in the presence of signs of dysfunction of the masticatory muscles). Electromyography is used to detect dysfunction of the masticatory muscles. A significant normalization of the bite height and the ratio of TMJ elements in the lower third of the face was achieved using a plastic mouth guard. In most patients, mouthguards were used for the entire lower dentition. After installing and adapting the mouthpiece, the occlusive height was restored by applying a fast-hardening plastic to the chewing surface of the mouthpiece. The position of the articular head in the articular fossa with such an increase in occlusal height was monitored using TMJ tomographic images. The mouth guard was used for 3-6 months and fixed on the teeth with lipids after the patient was completely accustomed to it. For patients with missing teeth, gingival mouthguards for the entire dentition or temporary removable dentures for existing teeth were used. After the restoration of the reflexes of the masticatory muscles and normalization of their function, restoration of the function of the temporomandibular joint and stabilization of the position of the lower jaw, dental prosthetics was performed in the lateral part of the dental arch. Preference is given to solid-cast crowns and bridges or stamped crowns with molded chewing surfaces. Such prostheses withstand increased chewing loads for a long time and do not wear out. If the patient had a large occlusion or a malocclusion margin defect, solid orthodontics with occlusive overlays was used. During the manufacture of these prostheses, the occlusal height and the lower third of the facial surface were restored. Thus, a vertical gap was created between the destroyed tooth stump and the anterior antagonist tooth. Then a pin tab (seal) was made from a cast stump and a crown (porcelain, ceramic, plastic or combined) or a bridge was installed on it. Orthodontic treatment is ineffective in adults with anterior bite due to excessive growth of the lower jaw and underdevelopment of the upper jaw. Therefore, these patients did not receive orthodontic treatment before prosthetics, and the sagittal proportions of the dentition did not change. As for the height of the bite, removable temporary plastic prostheses were made to compensate for missing teeth and restore the height of the bite in case of its violation. The patients used these prostheses for three months. After the restoration of the function of the masticatory muscles, electromyography was used to replace the missing teeth of premolars and molars. The destroyed front teeth were restored with stamped pin tabs and covering structures, depending on the indications. During the modeling of the tab, its direction was changed by tilting to the front to 10-15 degrees. This made it possible to improve the anterior relationship of the teeth. In the case of a sagittal gap up to 2-3 mm, the anterior occlusion ratio of the prosthesis can be straightened in the area of premolars and molars during the restoration of occlusal

height, as well as appropriate modeling of inlays and coatings. If the patient's front teeth were partially destroyed, discolored or erased, they were covered with crowns of the same color and shape as the inlay coating for a more aesthetic effect; in the presence of a sagittal gap of more than 2-3 mm, the direction of the inlay stamp did not change, and the structure of the coating itself was not modified to ensure the ratio of the front teeth.. Attempts to change the ratio of the front teeth led to complications in the form of root cleavage, ceramic fracture and traumatic overload of the periodontal ligament of the abutment teeth in three patients with an occlusion of the front teeth 4-6 mm. As a result of this overload, the periodontal trophism in the anterior section is disrupted. This leads to inflammatory changes in the gum, bone resorption in the root canal, loosening and loss of the abutment tooth. These complications were observed in one patient. Two patients with grade II pathological bruxism developed pain in the temporomandibular joint during treatment after raising the occlusal height of the plastic mouth guard by one step 6-7 mm. For this reason, in both cases, the plastic of the mouth guard was sanded, and the pain disappeared within 2-3 days. To avoid such complications, the bite of the mouthpiece was subsequently raised gradually, in two stages. First by 3-4 mm, and then by another 3-4 mm after a month and a half. After the restoration of the function of the chewing muscles in this way, no complications were observed.

The results of the study: Most patients were satisfied with the prosthesis and did not complain. In three patients with anterior protrusion bite and a 4-6 mm sagittal gap, complications in the form of root cleavage, ceramic fracture and traumatic overload of the supporting teeth occurred when the direction of the stump of the pin tab and the ratio of the front teeth changed. One patient with the same condition had complications in the form of inflammatory changes in the gums, bone resorption in the well, loosening and loss of supporting teeth; two patients with grade II pathological occlusion had a simultaneous increase in occlusal height by 6-7 mm, which caused pain in the temporomandibular joint.

CONCLUSION

Orthopedic preparation using mouthguards should be phased if pathological bruxism leads to a decrease in occlusal height by more than 3-4 mm. In front teeth with a 4-6 mm sagittal gap, the direction of the stump of the pin tab should not be changed and the crown should be made in the same ratio as the front teeth in order to avoid various complications.

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