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THE USE OF REINFORCING QUARTZ MESH IN THE MANUFACTURE OF PLATE REMOVABLE DENTURES

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ABSTRACT

In the practice of orthopedic dentistry, when using partially removable acrylic dentures, patients very often come to the clinic with breakage of partially removable acrylic dentures in places where there are pronounced exostoses on the jaw from the lingual side. We used a method to solve the problem of adaptation and frequent breakdowns of the prosthesis by using reinforcing quartz mesh. The results of orthopedic treatment were evaluated.

Keywords: fracture of the basis of a lamellar prosthesis, reinforcement of prostheses, reinforcing quartz mesh, repair of prostheses.

A 64-year-old patient applied to the Department of Orthopedic Dentistry of the Azerbaijan Medical University for prosthetics. The main complaints are difficulties in getting used to a removable prosthesis in the lower jaw (pain), frequent breakdowns and, as a result, the inability to use it. Prostheses were made repeatedly and in different medical institutions, but there was no positive result. He notes that only in the first year of using the prosthesis he went to the doctor about a fracture of the basis 3 times.

Objectively:

on the lower jaw, a defect in the dentition 1 class 2 subclass (according to Kennedy); there are only teeth 44,43 and 33,34,35 covered with metal crowns; a significant part of uneven atrophy of the alveolar processes and pronounced exostoses on the lingual side. It was exostoses that were the zone of injury to the mucous membrane by the edge of the prosthesis and contributed to frequent breakdowns of the plastic base. The patient's state of health did not allow improving the conditions for prosthetics through surgical preparation - excision of exostoses. To eliminate the shortcomings of the previous prosthetics, isolation of the bone protrusions on a plaster model was carried out in order to exclude the increased pressure of the prosthesis on them. Also, the basis of the lower removable prosthesis was strengthened by reinforcement. The most commonly

used methods for strengthening the bases of the prosthesis is the reinforcement of the acrylic base with a standard metal mesh.

This method, along with advantages, has significant drawbacks: the mesh can be subject to corrosion. But the most significant drawback is the absence of a chemical bond between metal and plastic, so the retention of the reinforcing element occurs only due to mechanical retention. In such cases, the optimal, in our opinion, is the use of a quartz mesh, which is designed specifically for reinforcing acrylic prostheses [1-4]. A particular advantage is that this mesh is able to chemically bond with acrylic base plastics due to the fact that it is pre-impregnated with a special methacrylate resin binder. It should be noted that various QUARTZ SPLINT structures are produced for reinforcing prostheses: WOVEN (woven tape) (different sizes) or MESH (mesh) [5]. We used a grid because it allowed us to individually select the required size according to the parameters of the jaw. Treatment plan: fabrication of a partial plate denture with a plastic base reinforced with QUARTZ SPLINT MESH and cast retaining clasps. Technically, reinforcement is carried out as follows: after plastering the model into a cuvette and melting the wax, they begin to prepare the reinforcing mesh. To do this, cut a ribbon of the desired width and length from a standard elastic blank, the size of which is 5.5x8.0 cm. Then, on a plaster model, the workpiece is

given the required shape. Another positive property of this material is the close-to-zero shape memory effect of various curvature, which manifests itself in the fact that the workpiece remains in a new form until polymerization is applied, without trying to return to the original situation. This significantly affects the accuracy and quality of reinforcement [6]. After that, the model is placed in a photopolymerizer, where the mesh is cured to a rigid state (Fig. 5, 6). In order for the mesh to be in the thickness of the base, its immersion limiters are installed on the model, the mesh is pressed against them, and with your fingers, carefully, trying not to displace it, the base plastic is applied under and on the mesh, as well as in the second half of the cuvette. After the final polymerization of the plastic, the prosthesis is removed from the cuvette, ground and polished. The special mesh integrates perfectly into the acrylic resin, providing excellent reinforcement and a highly aesthetic effect, becoming almost invisible. In the process of habituation, the patient was trained in the rational introduction of the prosthesis and recommendations were given on the proper care of the oral cavity and prostheses. After minor necessary corrections, he quickly adapted to the prostheses. The orthopedic treatment carried out, thanks to the use of modern technologies, to a large extent made it possible to solve the tasks set. The patient was satisfied with the treatment, states the absence of pain, restoration of chewing, speech and a significant improvement in mood. He also notes that after 8 months of using the prosthesis, its integrity is not broken. Thus, the identification of complex anatomical conditions in the form of the presence of exostoses, the

use of methods for eliminating and preventing trauma to the mucous membrane (isolation of exostoses) and frequent breakdowns of the lower jaw prosthesis by reinforcing a partial removable denture with a quartz mesh allows achieving positive results. This technology can be recommended for application in wide practice.

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