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THE STUDY OF THE VALUE OF TEMPORARY GUM RETRACTION IN CARRYING OUT DENTAL ORTHOPEDIC PROCEDURES RESTORATIONS

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ABOUT ARTICLE

Key words: For complex gum retraction, retraction filaments, impregnation rings and retraction pastes are used.

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Abstract: Thompson first reported on gum retraction methods in 1941, suggesting the use of moistened twine. Currently, both mechanical and chemical and combined methods are used for gum retraction. Mechanical gum retraction involves the use of unpowered retraction threads or rings, silicone caps for gum retraction and special tools such as gum elevators. Hemostatic solutions or gels are used for chemical gum retraction. For complex gum retraction, retraction filaments, impregnation rings and retraction pastes are used.

INTRODUCTION

Gum retraction is a fairly common procedure in conventional dental practice and pursues the following goals: - protection of the marginal gum from mechanical injury - stopping bleeding - protecting the working field from gingival fluid - reducing the volume of the marginal gum and creating access to the subgingival part of the tooth. The effect of non-removable prostheses on the tissues of the prosthesis base, especially on marginal periodontal tissues, is an important issue that needs to be considered in connection with the frequency and severity of complications developing after medical intervention [13, 14, 19, 21, 25]. The development of inflammatory processes in this part of the mucosa is explained not only by traumatic damage to the epithelium and accumulation of plaque during tooth preparation, but

also by uneven contours and the marginal location of the artificial crown . Therefore, there is still debate about the tactics of forming the anterior part of the tooth, which in most cases consists in the formation of a ledge [35]. Ledges as a functional form and shaping should ensure a smooth transition of the prosthesis to the root and prevent injury to marginal periodontal tissues [13, 17, 15, 24]. Mechanical action on the gum leads to the development of acute chronic inflammation and causes irreversible morphological changes in the periodontal tissue complex [21-23, 27, 29]. In connection with the above, the solution to the problem of preventing periodontitis caused by mechanical and thermal trauma, especially in the process of dental restoration against the background of periodontal diseases, continues to be relevant [13, 20, 21, 30]. Today, the most common method of restoring destroyed teeth is prosthetics with crowns. When using crowns, it is necessary to take into account both orthopedic indications and the condition of periodontal tissues. In the last decade, there has been insufficient systematic information in the Russian literature on the effect of artificial crowns on periodontal tissues. The adverse effect of artificial crowns on the supporting and retaining apparatus of the tooth is due to the incorrect choice of the "time" of the crown installation, incorrect modeling of the crown edge, incorrect "periapical" characteristics of the crown (contact points, equator, etc.) and incorrect formation of the occlusal surface. When prosthetics with an artificial crown, it is important to take into account the positional relationship between the edge of the crown and the gingival edge. There are three ways to install the crown: above the gingival margin (at the height of the equator of the tooth), under the gingival margin (at the height of the gingival margin when a ledge forms on the tooth) and under the gingival margin. The optimal solution is to use supradingival (in the lateral area of the tooth) and subgingival methods of crown installation. One of the factors determining the quality of artificial crown prosthetics is the size of the marginal gap, which is determined by the thickness of the cement layer at the boundary between the rim of the crown and the tooth tissues. Most authors compare the results of their own research with the maximum allowable marginal gap value of 39 microns, obtained by Christensen G.J. in 1966. In addition, the edge of the restoration should exactly coincide with the border of the preparation [5, 12]. The gap between the inner part of the crown and the stump of the tooth should not exceed the volume required for cementing. As a rule, in the maxillary region, this gap should not exceed 20 microns. The reason for the large gap in the vestibule of ceramic-metal crowns may be due to clinical (lack of high-quality display of marginal periodontal tissues on the impression: ledges, gingival grooves and gingival ridges) and laboratory factors [1]. To ensure the durability of dentures, it is important to restore teeth destroyed by caries or its complications. It is proved that the resistance of all-ceramic crowns to destruction largely depends on the modulus of elasticity of the fixing cement and the remaining root material [6]. For these purposes (fixation and temporary restorations),

according to modern data, fluid composites should be used due to their high adhesive strength and resistance to compressive load. However, it should be noted that excessive elasticity and the associated large deformations can disrupt the edge adaptation. Currently, it is recommended to use fluid composites as a base for bases made of the same microfilled composite as the restoration material, for example, for tabs [6]. Clinical, radiological, and especially cytoenzymochemical studies by some authors have shown that when combining metal-ceramic or polyceramic prostheses with supporting elements fixed at the level of the gingival margin with closed curettage of periodontal pockets, pathological changes in the tissues surrounding the supporting tooth are minimal. As already mentioned, gum retraction was first reported by Thompson in 1941. He mechanically expanded the gingival groove using moistened twine. Epinephrine HCI, alum (double sulfate of aluminum and alkali metals), aluminum chloride, zinc chloride, aluminum sulfate, tannic acid and iron sulfate. A healthy periodontal condition without signs of soreness or inflammation is a prerequisite for gum recession. Probing of the gingival sulcus and periodontal pockets is a method of examination that has the greatest diagnostic value in periodontology and allows determining the need for surgical intervention. Orthopedic treatment can be started only after the stabilization of soft tissues and the completion of the preparatory stage of treatment. Before taking the casts, the dentist must determine the gum biotype and determine whether soft tissue retraction is possible and necessary. Sufficient expansion of the gingival sulcus and stopping bleeding are essential prerequisites for ensuring good access to the prepatation margin and obtaining a high-quality impression. Classical methods of gum retraction (using lasers or more common rotating instruments) are painful for the patient and lead to soft tissue injury [11]. A number of studies of the mechanical behavior of the marginal periodontal ligament, the results of which were obtained in humans in vivo and in pigs in vitro, showed the following results: the strength of attachment of the epithelium is 1 N/mm2; the furrow expands at a very low pressure (0.01 N/mm2), and when this pressure is removed, the gum almost instantly expands by 1.5 mm at a pressure of 0.1 N/mm2, and the gum returns to its original position after an average of 2 minutes (during this time the slit returns to its original position). (during which the gap is 0.5 mm) [11]. For proper preparation of teeth, a clear definition of the boundaries of preparation and gum recession, a number of authors propose to evaluate the gingival complex [39]. For this purpose, the term "biological width" was adopted to determine the parameters of biological attachment to the tooth surface. This is important because in most cases, a violation of the biological width leads to inflammation of soft tissues at the level of round fibers, and sometimes away from the directly damaged area of this formation [39]. Histological studies have shown that the regression process in case of damage to the biological width begins within the first seven days. During this period, the apical displacement of the epithelium and the

attachment of connective tissue to the border of the drug begins. Thus, the natural mechanism of repairing damage to the biological width leads to regression. There are various methods to achieve temporary gum recession, including the use of recessive filaments with or without impregnation, electro- and radiosurgery, as well as indirect gum recession using temporary crowns [12]. After good preparation, it is often impossible to get an adequate impression. Anesthesia is performed again to achieve good and immediate results. A retractor thread is inserted to stop gingival bleeding and coagulation of soft tissues [7The healing process of damaged epithelial tissue prolongs the recession of the gum and contributes to the exposure of the marginal edge of the crown during the installation of the prosthesis [12]. The disadvantages of using a retraction thread to isolate defects in the upper jaw include the possibility of injury to the gingival furrow during filling with thread, insufficient protection of the marginal gum during preparation and the possibility of thread fibers entering the restoration Expasyl (Pierre Rolland, 1999) is a drug that expands the gingival groove and stops bleeding, and which revolutionized the practice of dentists regarding the preparation of prints. Expasyl can also effectively open the gingival sulcus if you follow a few simple rules; Expasyl is not just a drug, but a chemical and mechanical technique for expanding the gingival sulcus (gum retraction) and stopping bleeding [11]. In addition, techniques using retraction dental floss are often painful, quite complex and time-consuming, and also damage epithelial attachments. Subsequent periodontal treatment at the gingival margin level is less predictable and may cause aesthetic problems. Stopping bleeding with various drugs is sometimes unstable, often leaving clots and coagulum in the groove. All these problems are well known, but previously they had to be put up with [11]. Some authors unequivocally state that gum retraction leads to damage to periodontal tissues at any stage of tooth creation, regardless of the gum retraction technique.

CONCLUSION

To conclude: Therefore, it is impossible to predict the behavior of the gum after microtrauma caused by retractors, chemicals or impression materials. In addition, the probability of gum recession after a while is very high.

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