REASONS FOR BREACH OF FIXING NON-REMOVABLE DENTURES.

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This article is devoted to studying the causes of fixed prosthesis fixation and correction. The article presents the basic information about the factors of unsuccessful outcomes non-removable prosthetic designs: the selection and use of fixing material, the extent and quality of the preparation of the tooth surface, the violation of fit, the development of caries process after fixation of prostheses, the probability rastsementirovki. Also, the basic recommendations to reduce the failure rate in the orthopedic treatment.

Key words: causes of violations of fixations, fixation of prosthetic, orthopedic design dentures.

Today in prosthetic dentistry is actively improved treatments using non-removable prosthetic. However, statistics show that when used complication rate remains high enough - figures premature disruption fixation range from 2% to 50%, and the development of caries in abutment teeth is from 23% to 50% of the total number of complications. [5] Many scientists who study the causes of unsuccessful outcomes of treatment non-removable prosthetic designs have come to the conclusion that this contributes to a large number of factors: selection and use of fixing material, the extent and quality of the preparation of the tooth surface, the violation of fit, the development of caries process after prosthetic fixation probability rastsementirovki. [5,6]

As a rule, the violation is caused by atrophy of the fixation of bone tissue under the prosthesis as the prosthesis manufactured by a cast compression, when applying it on the jaw fixes mucosa in a choked condition that impairs the blood and lymph circulation, leads to the development of inflammatory processes, and subsequently - to atrophic processes. Chewing pressure sensed by the mucous membrane, fixed prosthesis is physiological conditions, exacerbating these phenomena.

The cause is the fixing violations and improper preparation of teeth to prepare the surface for the design of fixing.

The quality of fit, in addition to the characteristics of the prepared tooth surface, influences the material to fix the crown and its stability in the tooth system - cement - the crown.

Common to all is the presence of orthopedic structures between the metal and tooth tissue gap, equal 30-50mkm. An important requirement for materials for permanent fixation is possible to obtain a thin (25 um) cement film that can fill the space between the surface of the tooth stump and the crown and ensure minimal contact with the fixing cement oral fluid. Working dental cement also affects the film thickness. For a long time (2-3 minutes) provides a greater flow of material, preferred for accurate fixation of orthopedic structures. Important characteristics for the fixing material is compressive strength, can withstand chewing pressure, solubility in the oral fluid, adhesion to hard tissues of the tooth, and others.

Another feature is the inherent high mechanical strength within time and multidirectional loads encountered in the mouth. This shear stress, bending, tearing, stretching and twisting. The coefficient of thermal expansion of the material in the manufacture of non-removable prosthetic teeth must match the CTE. A lot of importance is the constancy of the volume; good compatibility with tooth tissues, metals, plastics, porcelain, zirconia and alumina on the physical and mechanical characteristics; the absence of pulp irritation, etc.

The nomenclature list of tools and materials developed by the International Standards Organization (ISO), defined the technical requirements for materials for fixing. They are shown in Table 1. [6]

Table 1. Specifications for the materials to fix (for ISO)

Physical Properties Indicators	**indicators**
Film thickness	max 25 25 microns
The compressive strength	min 65 MPa
Indicator solubility and disintegration	max 0,2%
Working time	min 2,0 minutes
Curing time	max 7,5 minutes

In determining the physical and mechanical properties of dental cements pay special attention to the definition of the thickness of the temporary cement film that gives an indication of marginal adaptation abutments, awareness of the thickness of the film is also a very important factor for the prevention of occlusive disorders, especially in the case of prosthesis on implnatah. The film thickness for all types of cements should be no more than 25 microns.

Typically, with decreasing thickness of the adhesive layer of cement bonding strength increases. There are attempts to explain the dependence of the adhesion strength of the cement film thickness influence of the solid surface, resulting in the likelihood of deformation of a thin layer of cement is less than thick.

With the increase of the cement layer thickness increases volumetric polymerization shrinkage inherent in all composite materials, which is one of the causes of violations of marginal adaptation cemented structure.

Thus, the film thickness is an important factor in determining the ability of a sealing cement, adhesive bond strength, functional and aesthetic properties of the prosthetic tamperproof ceramics.

Also taken into account the working time after mixing self-curing cement components - a time interval during which the cooked mass may be manipulated prior to hardening and the appearance of the risk of incomplete installation of the prosthesis.

In operation, the fixed denture in the oral cavity by the chewing action of the load most of the cement film is subjected to compression, so the cement compression strength (compression strength) has a significant impact on the longevity and durability of adhesive joint.

Along with the physical and chemical properties of cements important value for a secure fit of the prosthesis has the quality of their relationship with the firm support of the tooth tissues.

In the clinic of orthopedic dentistry frequent violations of permanent fixation of fixed prosthesis in the form of so-called rastsementirovok. This may be due to many reasons, including, first of all, it should be called a breach of fit and the development of caries process after fixing the fixed prosthesis.

Thus, the choice of material for the fixation depends on the following factors:

1. The degree of preparation of a tooth stump;
2. The shape of the cavity or stump;
3. The type of construction;
4. The quality of design processing;
5. The degree of isolation of the abutment teeth.

Alcohol and ether is not used for processing. Ether gave rapid cooling of the tooth increases and consequently flow of dentinal fluid out of the channels. The alcohol and ester form a film on the tooth surface, complicating the fixing material compound (GIC and especially the polymer-based cement). In addition, alcohol and ether in a suitable concentration affect the oral mucosa. Chance of necrosis after administration of these drugs.

Conclusion

After analyzing the current literature on the subject, we have come to the conclusion that there are quite a number of reasons contributing to a breach of prosthetic fixation. A certain percentage of failures is inevitable in any way, but their number can also be minimized. Important factors that affect the result of the work is high quality preparation of the tooth, adequate insulation, the correct selection and use of fixing material.

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