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APPROACHES TO CHOOSING A METHOD OF RESTORATION OF AUXILIARY TEETH IN PROSTHETICS WITH REMOVABLE PARTIAL DENTURES.

Sanakulov Jamshed Obloberdievich

Assistant of the Department of Dentistry,

Samarkand State Medical University, Samarkand, Uzbekistan.

Lobar Rakhmatullayeva Nurilla kizi

1st year resident specialty orthopedic dentistry

Samarkand State Medical University,

Samarkand, Uzbekistan.

ANNOTATION : Summary Different methods of teeth restorations at the treatment of dentition defects with the help of different partial removable dentures are considered in this article. The use of thermoplastic clasps is concluded to be the most optimal one for direct composite restorations of supporting teeth hard tissues.

Key words: restorations, supporting teeth, thermoplastic materials.

АННОТАЦИЯ: Применение различных методик реставраций опорных зубов в лечении дефектов зубных рядов с помощью различных частичных съемных протезов. Сделан вывод, что применение кламмеров с термопластичных материалов оптимальное за использование прямых композитных реставраций твердых тканей опорных зубов.

Ключевые слова: реставрация, опорные зубы, термопластичные материалы.

ANNOTATSIYA: Turli xil qisman olinadigan protezlar yordamida tish qatorlari nuqsonlarini davolashda tayanch tishlarni tiklashning turli usullarini qo‘llash. Tayanch tishlar qattiq to‘qimalarining bevosita kompozit restavratsiyalarini qo‘llash uchun termoplastik materiallardan tayyorlangan klammerlarni qo‘llash maqbul degan xulosaga kelindi.

Kalit so‘zlar: restavratsiya, tayanch tishlar, termoplastik materiallar.

INTRODUCTION

Orthopedic dentists have different views on the need to cover abutment teeth with crowns when using removable (supported or recessed) dentures using a rigid, metal clasp retention system. The need to cover abutment teeth with crowns is supported by the fact that after just 3-4 years, 41.8% of cases of uncrowned abutment teeth develop deep enamel softening at the clasp interface, which then develops into a hard tissue defect indistinguishable from a carious cavity. Teeth in contact with the denture base are affected by caries in 31.6% of cases (E.P. Osorina, T.F. Strelyukhina, 1961). At the same time, eliminating hard tissue defects in abutment teeth with composite materials does not produce the expected effect, because under constant clasp load, the composite material loses its original integrity, and covering abutment teeth with crowns often worsens the aesthetic result of prosthetics, causing additional trauma to dental tissues due to the need for odontopreparation.

The urgency of this problem is demonstrated by the fact that dental caries is currently the most common disease of humanity. There is ample evidence that in economically developed countries, its prevalence reaches 94-97%. Furthermore, the incidence of dental caries worldwide is showing a trend of increasing, especially among children. According to the World Health Organization there is a sharp increase in the incidence of dental caries among the population of developing countries, particularly in areas of intensive urbanization [1]. At the same time, caries is one of the main causes of tooth loss, leading to the development of various dental defects.

Material and Methods. Patients over 45 years of age with partial tooth loss constitute the largest group of individuals requiring partial removable dentures for dental defects, accounting for 37.2%. At the same time, removable dentures are also used quite frequently in younger individuals, accounting for 12 to 20% [2, 3].

This situation requires restoration of the anatomical structure of the supporting teeth, as they play a key role in the functioning of partial removable orthodontic appliances. Fixation and stabilization of removable partial dentures and clasp dentures are achieved using various retention elements, such as clasps, occlusal onlays, attachments, bars, magnetic retainers, and others. In the modern development of dentistry, dental caries is treated using various restorative techniques. A distinction is made between direct, semi-direct, and indirect restoration.

Direct dental restoration involves the restoration of dental tissue directly in the oral cavity; indirect restoration is performed in the laboratory and cemented in the oral cavity; semi-direct restoration involves optimizing the tooth shape for indirect restoration directly in the oral cavity [4, 5]. Indications for the choice of restoration method now overlap (for example, veneers, crowns, and bridges have become common indications for direct restoration).

Currently, a ten-year service life is used for all types of restoration, and no differences have been established between different methods [6]. Indirect dental restoration is the restoration of the shape, color, and function of teeth using orthopedic structures.

Indirect methods include veneers and lumineers, inlays, and crowns. The most commonly used material for indirect restorations is ceramic. It meets all aesthetic requirements, perfectly imitating a natural tooth, and is distinguished by its high strength characteristics, which is also important. Indirect restorations are manufactured in a laboratory, and therefore take several days. The fabrication of indirect restorations involves a number of clinical and laboratory stages, which vary depending on the chosen orthopedic structure. The most widely used materials in both direct and indirect dental restorations are composites and glass ionomer cements—both traditional and modified.

Results. The recent decades of widespread use of composites, along with their high adhesive strength, durability, and aesthetic appeal, have revealed a number of problems related to polymerization shrinkage, lack of antibacterial properties, degradation of the organic matrix under the influence of oral microorganisms, and a shift in the microbial spectrum of dental plaque toward anaerobes [7, 8]. Photocomposites have a coefficient of thermal expansion (CTE) of F 28 ppm/°C, which is almost twice that of enamel and three times that of dentin [9]. All of these negative aspects contribute to marginal permeability, staining, and the development of secondary caries, leading to restoration replacement [10, 11]. The advantages of glass ionomer cements include chemical adhesion to hard dental tissues, their remineralizing and antibacterial

effects [12, 13], the absence of significant shrinkage compared to composites, and a coefficient of thermal expansion (CTE) that is as close as possible to the CTE of enamel and dentin – 8-15 ppm/°C (CTE of enamel is 15 ppm/°C, and dentin is 10 ppm/°C) [14]. However, experience with glass ionomers shows that they also have disadvantages – lower mechanical strength, erosion of the surface layer under the influence of microbial acids, which leads to even greater bacterial adhesion to their surface and, consequently, the development of secondary caries [12].

Opponents of the use of glass ionomers also point to weak adhesion to dental tissues compared to fifth-generation adhesive systems [15]. One of the reasons for the short-lived function of restorations in the oral cavity is the selection of the restoration method and material without regard to the clinical conditions (location of cavities, their size, degree of mechanical loading of the filling) and the etiology of the defects [16]. Postoperative dental hyperesthesia and patient dissatisfaction with the aesthetic properties are the most common immediate complications after restorations [17]; the formation of defects or loss of restoration materials and the occurrence of secondary or recurrent caries are complications that arise in the long term [8]. The problem of restoring dental defects with partial dentures remains relevant at the current stage of development of orthopedic dentistry.

Along with classic clasp dentures with a rigid frame, clinics are increasingly using clasp dentures with a so-called "flexible frame," saddles, and thermoplastic clasps. These partial dentures are manufactured using a molding method.

Conclusion. Some authors believe that thermoplastic partial dentures are significantly lighter than metal ones, do not cause allergic reactions, patients adapt to them more quickly, are easier to process and adjust, and are less labor-intensive to work with since there is no metal casting step; due to the clasp elements, thermoplastics are superior to metal ones in aesthetics, do not damage the enamel of the supporting teeth, and, judging by our 6-year observations, direct composite restorations can also be used, therefore eliminating the need for crowns [18]. Thus, the use of thermoplastic clasps ensures a good aesthetic result due to the ability to match the clasp color to the color of natural teeth.

It minimizes trauma to the periodontium due to the "softness" of the clasps, which consequently has a gentle effect on the periodontium. This quality also ensures a gentle effect on the hard tissues of the teeth, preventing the formation of hard tissue defects in the area of clasp load and allows the use of these clasps in direct composite restorations of the hard tissues of abutment teeth.

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