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COMPARATIVE EVALUATION OF DIFFERENT METHODS OF FIXING DENTURES ON DENTAL IMPLANTS

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ABSTRACT

Prosthetics of small and medium dentition defects using dental implants have become commonplace today. Fixation of artificial crowns on dental implants are mainly of two types: cement and screw fixation. In our opinion, the doctor's preferences come from the clinical situation, namely, the condition of the bone base in the area of dentition defect, the type of occlusion, the size of the remaining teeth, the general condition of the patient's immune system, aesthetic needs, etc.
Keywords: screwfixation, dental implants, artificial crowns, occlusion.

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СРАВНИТЕЛЬНАЯ ОЦЕНКА РАЗЛИЧНЫХ СПОСОБОВ ФИКСАЦИИ ЗУБНЫХ ПРОТЕЗОВ НА ДЕНТАЛЬНЫХ ИМПЛАНТАТАХ

АННОТАЦИЯ

Протезирование мелких и средних дефектов зубных рядов с помощью дентальных имплантатов стало сегодня обычным явлением. Фиксация искусственных коронок на дентальных имплантатах бывает двух видов: цементная и винтовая. На наш взгляд, предпочтения врача исходят из клинической ситуации, а именно состояния костной основы в области дефекта зубных рядов, типа окклюзии, размера оставшихся зубов, общего состояния иммунной системы пациента, эстетического потребности и т. д.
Ключевые слова: винтовая фиксация, дентальные имплантаты, искусственные коронки, окклюзия.

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TISH IMPLANTLARIGA PROTEZLARNI BIRIKTIRISHNING TURLI USULLARINI QIYOSIY BAHOLASH

ANNOTATSIYA

Tish implantlaridan foydalangan holda kichik va o'rta tish protezlarini protezlash bugungi kunda odatiy holga aylandi. Tish implantlariga sun'iy kronlarni mahkamlash asosan ikki xil: tsement va vintnimahkamlash. Bizning fikrimizcha, shifokorning afzalliklari klinik va ziyatdan kelib chiqadi, ya'ni tish protezi nuqsoni sohasidagi suyak asosining holati, okklyuziya turi, qolgan tishlarning kattaligi, bemorning immun tizimining umumiy holati, estetik ehtiyojlar va boshqalar.
Kalitso'zlar: vintnimahkamlash, tishimplantlari, sun'iy kronlar, okklyuziya.

Introduction: Prosthetics of small and medium dentition defects using dental implants has become common practice today. The rich experience in the restoration of missing teeth by means of dental implants revealed that the fixation of artificial crowns on dental implants is mainly of two types: cement and screw fixation. The choice of methods for such prosthetics depends on the preferences of the doctor and the patient. The doctor's preferences come, in our opinion, from the clinical situation, namely, the state of the bone base in the area of the defect in the dentition, the type of bite, the size of the preserved teeth, the general state of the patient's immune system, aesthetic requests, etc. In the specialized literature, two types of fixation are described in detail, their advantages and disadvantages. Analysis of literary sources, in our opinion, dictates an adequate choice of the method of fixation. The main advantage of cementation is considered to be the aesthetic effect and, accordingly, is used in most cases in the anterior part of the dental arch (4-5). The use of screw fixation of artificial crowns in the area of the patient's visible "smile" zone cannot meet the high aesthetic requirements of today. Researchers (3-6) described in detail the advantages of screw fixation in the posterior part of the dental arch. With a successful, namely, parallel arrangement of dental implants, screw fixation, according to the authors, is the most effective. Screw fixation is also indicated with a sufficiently rich bone base of the implantation zone, when sufficiently massive and long implants are installed. This is due to the fact that the screw fixation firmly fixing the dental implant exerts an accentuated load on the latter. (7) argue that the above clinical prerequisites are the main indication for screw fixation. According to a number of authors (8, 9), the main disadvantage of screw fixation is the frequent chipping of the ceramic mass of artificial crowns. This is due to the fact that with a strong screw fixation in artificial crowns, the development of internal stress in the material of artificial crowns is possible. To avoid this drawback, the authors recommend appropriate modeling of artificial crowns, namely, the artificial crown should not have premature contacts, the masticatory tubercles on artificial crowns should not be very pronounced, and artificial crowns should not block the movement of the lower jaw. In order to avoid frequent chipping of the ceramic mass on screw-retained crowns, the functional state of the teeth of the antagonists, and in general the degree and severity of occlusal contacts, are of particular importance. Often, the functional state of the teeth of the antagonists means pathological abrasion of the coronal part of the teeth, the degree of their destruction, violation of the position of the tooth, secondary deformities, the Godon phenomenon, etc. The effectiveness of aesthetic prosthetics in these clinical situations is achieved by the premature correction of the above pathological conditions. The main parameter for the success of screw-retained prosthetics is the achievement of the correct occlusal relationship and the prevention of traumatic occlusion in the prosthetic area. In this regard, it should be noted that artificial crowns must be manufactured in accordance with the technical parameters of the selected ceramic mass. Thus, the manufacture of screw-retained artificial crowns implies a well-coordinated and coordinated work of the doctor-dental technician tandem.

Numerous studies have been devoted to the problem of cement fixation (7,8,9,10). According to the authors, the main obstacle to high-quality fixation of artificial crowns is two factors (10): the first factor is inadequate space between abutments and artificial crowns. An unjustified small space, and vice versa, a large space significantly impairs crown fixation. In addition, this circumstance significantly worsens the microbiological picture of the implant-gingival region, up to the development of pronounced dysbiosis. Often in such cases, patients have clinical symptoms of peri-implantitis. A number of authors (12-14) state another complication. The second factor is that when cementing a crown on dental implants, a sufficiently thorough removal of excess cement in the area of the crown margins is often impossible in practice. This leads in many cases to the development of mucositis and later to peri-implantitis. Some authors (15-18) reported on various biological complications in the implant-gingival region: gingival edema, severe redness, bleeding. In addition, radiographically, such patients showed a sharp and uniform recession of the bone base in the area of the osseointegrated dental implant. It should be noted that such complications increased in patients with low hygienic motivation.

To date, in the practice of orthopedic dentistry, two types of fixation of crowns on dental implants are actively used: screw and cement. A number of authors prefer screw fixation of crowns on dental implants, considering that it provides a rigid fixation necessary for the full functioning of artificial crowns. The authors consider the main advantage of such an attachment to be the possibility of removing artificial crowns when it is necessary to prevent and treat inflammatory processes in the gum area. The adherents of the second direction state the effect of fixation of artificial crowns on cement, believing that cement fixation effectively absorbs the chewing load, preventing overloading of dental implants. Analysis of the special literature revealed the effectiveness of screw fixation with parallel dental implants, with orthognathic direct bite, with well-defined height and volume of natural teeth. According to a number of authors (17, 19), the use of cement fixation is effective when there is an insufficient amount of bone around the dental implant during sinus lifts, as well as when dental implants are installed in the jaw with a bone augmentation operation. In such cases, the cement retainer is shock-absorbing, effective and long-lasting.

Conclusion: Thus, the analysis of special literature on this topic makes it possible to systematize the pathogenetic approach to the methods of fixing artificial crowns on dental implants. Effective and long-term fixation of crowns on dental implants is achieved by taking into account the clinical picture of each patient individually.

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