7. Н.Ш. Назарова, Т.А. Бердиев. Эпоксид смолалар таъсирига учраган ишчиларда пародонтал тукималар холатининг узгаришини бахолаш. Жамият ва инновациялар. 2020, октябрь. С 566-570.
8. Ризаев Ж.А., Назарова Н.Ш., Бердиев. Т.А. Шиша толали тузилмаларни ишлаб чикариишда NBF гингивал гелининг самарадорлиги. Жамият ва инновациялар. 2020, октябрь С 678-682.
9. Н.Ш. Назарова, Т.А. Бердиев. Эпоксид смолалар таъсирига учраган ишчиларда пародонтал тукималар холатининг узгаришини бахолаш. Жамият ва инновациялар. 2020, октябрь. С 565-569.
10. Ризаев Ж.А., Назарова Н.Ш.,. Бердиев. Т.А. Шиша толали тузилмаларни ишлаб чикариишда NBF гингивал гелининг самарадорлиги. Жамият ва инновациялар. 2020, октябрь. С 565-569.
11. Ризаев Ж.А., Назарова Н.Ш.. Эффективность савокупного лечения болезней парадонта и слизистой оболочки работающих с вредными производственныыми факторами. Проблемы биологии и медицины. 2020. №3 (119) . С 85-88.

УДК: 616.314.11-089.23-615.462/.464-07

СРАВНИТЕЛЬНАЯ ХАРАКТЕРИСТИКА КЕРАМИЧЕСКИХ И КОМПОЗИТНЫХ ВИНИРОВ

Авзал АКБАРОВ [1,a], Мохинур ТОЛИПОВА [2,b],
[1] д.м.н. профессор, Ташкентский государственный стоматологический институт
[2] клинический ординатор, Ташкентский государственный стоматологический институт
Ташкент, Узбекистан
[a]avzal@mail.ru, [b]mokhinurtolipova@mail.com

COMPARATIVE CHARACTERISTICS OF CERAMIC AND COMPOSITE VENEERS

Avzal AKBAROV [1,a], Mohinur TOLIPOVA [2,b]
[1]Doctor of Medicine, Professor, Tashkent State Dental Institute
[2]Clinical resident, Tashkent State Dental Institute
Tashkent, Uzbekistan
[a]avzal@mail.ru, [b]mokhinurtolipova@gmail.com

Керамика ва композит винирларнинг қийосий тавсифалари

Авзал АКБАРОВ [1,a], Моҳинур ТОЛИПОВА [2,b]
[1]т.ф.д. профессор, Тошкент давлат стоматология институти
[2] клиник ординатор, Тошкент давлат стоматология институти
Тошкент, Ўзбекистон
[a]avzal@mail.ru, [b]mokhinurtolipova@gmail.com

АННОТАЦИЯ

В последние 30 лет мировая стоматология совершила большой скачок вперед. Новые материалы и методики позволяют почти в любой ситуации воссоздать зубы, неотличимые от натуральных. Если в недалеком прошлом мы воспринимали возрастные эстетические проблемы как данность, то сегодня нарушение эстетики – это одна из главных причин, по которым к нам обращаются пациенты. И если раньше здоровые и красивые зубы были признаком молодости, то сегодня это признак внимательности к своему здоровью и грамотности врача. В данной статье мы подробно рассмотрим в сравнительном аспекте преимущества и недостатки композитных виниров с керамическими. Оценены их преимущества и недостатки. Результаты анализа изученной научной литературы в этом направлении показал, что применение виниров преследует эстетические цели по восстановлению красоты, «белизны» и анатомической правильности строения зубов. Выяснено, что на сегодняшний день виниры являются оптимальным эстетическим методом восстановления дефектов вестибулярной поверхности зубов.

Ключевые слова: эстетика, стоматология, протезирование, винир.

ABSTRACT

In the last 30 years, the world of dentistry has made a great leap forward. New materials and techniques make it possible to recreate teeth indistinguishable from natural ones in almost any situation. If in the recent past we took age-related aesthetic problems for granted, today the violation of aesthetics is one of the main reasons why patients come to us. Additionally, if earlier healthy and beautiful teeth were a sign of youth, today it is a sign of attentiveness to one's health and the literacy of a doctor. In this article, we will consider in detail in a comparative aspect the advantages and disadvantages of composite veneers with ceramic veneers. Their advantages and disadvantages are assessed. The results of the analysis of the studied scientific literature in this direction showed that the use of veneers pursues aesthetic goals in restoring the beauty, "whiteness" and anatomical correctness of the structure of the teeth. It has been

found that veneers are currently the optimal aesthetic method for restoring defects in the vestibular surface of teeth.

Key words: aesthetics, dentistry, prosthetics, veneer.

АННОТАЦИЯ

Сўнгги 30 йил ичида жаҳон стоматологиясида катта ривожланиш рўй берди. Янги техника ва материаллар тишларни ҳар қандай вазиятда табий тишлардан ажратиб бўлмайдиган даражада тиклашга имкон беради. Агар яқин ўтмишда биз инсоннинг йошига боғлик, эстетик муаммоларни оддий деб билган бўлсак, бугунги кунда эстетика бузилиши, беморларнинг бизга мурожат қилишининг асосий сабабларидан биридир. Бгунги кунда соғлом ва чиройли тишлар нафакат ёшлик белгиси – бу беморнинг ўз соғлигига этиборлиги ва шифокорнинг саводхонлигидан далолат беради.

Ушбу мақолада биз керамик ва композит винирларнинг афзалликлари ва камчиликларини қийосий жихатдан батафсил ўргандик. Бу йўналишда ўрганилган илмий адабиетлар тахлили натижаларига кўра, винирлар тишнинг гўзаллигини, “оклигини” ва анатомик тузилишини тиклайди. Малум бўлишича, бгунги кунда винирлар тишларнинг вестибулар юзасидаги нуқсонларни тиклашнинг оптимал эстетик усули деб хисобланади.

Калит сўзлар: эстетика, стоматология, протезлаш, винир.

Summary. In the last 30 years, the world of dentistry has made a great leap forward. New materials and techniques make it possible to recreate teeth indistinguishable from natural ones in almost any situation. If earlier healthy and beautiful teeth were a sign of youth, today it is a sign of attentiveness to one's health and the literacy of a doctor. Based on the literature data, this article discusses the effectiveness of the use of direct composite restorations and ceramic inlays.

Relevance. The rapid growth and pace of development of technologies, including in reconstructive - aesthetic dentistry, require the development and implementation of advanced methods for the restoration and reconstruction of teeth. Aesthetic dentistry is a field of dental science dedicated to the study of the aesthetics of the maxillofacial region. This section studies the norms, anomalies and deformations of the maxillofacial region, as well as methods for their elimination and prevention. In other words, it is a branch of dentistry that works for the aesthetic beauty of the human face [1-4]. To date, the pathology of hard dental tissues remains an important problem in the practice of a dentist. The section of orthopedic aesthetics is the theory of artistic modeling, in particular the use of veneers. Changing the color and shape of teeth is one of the most requested procedures by patients at the dentist. The demand for cosmetic services in dentistry has increased dramatically in recent years everywhere, and restorations are the most high-quality option for changing a smile [5].

Results and discussion. Improved materials and restoration methods allow us to meet the highest aesthetic requirements of patients. The task of the dentist is to choose the appropriate method of restoration, taking into account the condition of the teeth and the desires of patients. However, despite of aesthetics, specifically the beauty of teeth and smiles contribute to the achievement of self-confidence, at the same time should not forget that the key point is still the overall improvement of teeth.

Veneers are the thinnest (up to 0.3 mm) porcelain plates that are attached with transparent cement to a slightly processed front surface of the tooth. Veneers are lined with the front surfaces of the teeth included in the smile line. Veneers allow to restore the shape and color of a single tooth or a group of teeth, but unlike crowns, they do not cover the entire tooth, only one or two of its surfaces. At the same time, the enamel remains intact, as well as the gums, with which the veneers do not come into contact. Veneers mask defects such as chips, roughness, grooves, wide interdental gaps and allow to achieve a perfect even color. The reflective properties of porcelain in veneers are close to the properties of natural teeth, at the same time it is strong, durable, do not darken and do not cause allergic reactions [28].

Firstly, Pincus CL introduced the technique of treatment with veneers in 1937 year. In the middle of 1970s, with introduction adhesive techniques and composite materials, veneers became widespread. Three methods of veneer fabrication were mainly used: direct composite restorations, prefabricated composite veneers, and individual ceramic veneers [29].

Porcelain veneers are a widely used method of correcting aesthetic disorders of the teeth. Restoration with ceramic veneers is an indirect method. In this case, the patient needs to visit the dentist several times. Porcelain veneers have a thickness of 0.5 to 0.9 mm and require grinding of the tooth to install them. An impression is taken of the treated tooth and a model is made, according to which the veneer is made in the dental laboratory. Porcelain veneers have a several of properties. For instance, they are resistant to staining, unlike composite materials, which change the color of their restorations while eating foods with staining properties. Ceramic has great biocompatibility with soft tissues due to low allergenicity and cytotoxicity. Additionally, on the surface of ceramic, the viability of microorganisms is much less, therefore, the accumulation of plaque will be less. This can be explained by the smooth surface of the ceramic, which prevents bacteria from attaching. The ability of ceramic veneers to transmit light makes it possible to achieve a high aesthetic result. The light that hits the surface of the veneer penetrates to varying depths inside the ceramic, and then reflects off the dental tissues, thereby creating a depth of color and giving the restoration a natural transparency. As for the duration of the service of this restoration, with proper care and following the recommendations of the dentist, ceramic veneers will last you 10-15 years.

Indications for veneers can be: [27].

- Discoloration of various etiologies;
- Violation of the position of the tooth in the dentition;
- The presence of cracks and chips;
- Irregular shape of the tooth;
- Tremas and diastemas

Contraindications for the use of veneers:

-Bruxism;

- Occlusal disorders (straight or deep bite);

- Periodontal disease;

- The presence of carious processes;

- Pathological abrasion of teeth of the second degree or more;

- Lack of sufficient thickness of the enamel, i.e. veneers should not be used unless we ensure that at least 50% of the enamel is preserved during the preparation.

An alternative to ceramic veneers is the use of a composite system. In this case, the aesthetic restoration of the tooth takes place directly in the patient's mouth and can be performed in one visit. The patient can take part in choosing the color and shape of the restoration. While working with this system, there is no need for laboratory steps. Recently, the “Componeer” composite system has become widespread. “Componeer” is a standardized overlay that is industrially fabricated from a proprietary, polymerized, highly filled nanohybrid composite. This is a development of the Swiss company “Coltene/Whaledent”. The manufacturer provides us with three sizes: large, medium and small, and two varieties of opaque plates (white and universal). “Componeer” is available as a premium system-kit containing 84 veneers or as a basic system-kit with 36 veneers. The kits also include additional materials: templates, holder, “componeer” installation tool, modeling tool, synergy D6 and synergy D6 Flow nano-filled microhybrid composite material, “One Coat Bond” one-component adhesive system, polishing discs, strips and heads of different abrasiveness and brushes made of natural bristles. “Componeer” enamel overlays are quite thin. They have a thickness of 0.3 (in the cervical region) to 0.7 mm. (in the area of the cutting edge), so the amount of tissue removed is minimal. During manufacture, a smooth microtexture is applied to the outer surface of the “componeer”, which is mirror-symmetrical for paired teeth. In Synergy D6 composite, the dentin is the carrier of color, and the enamel masses are designed according to the properties of the enamel to create translucency and color depth effects. According to the official website of the “componeer” system, 92.5% of all samples showed no ink penetration; 7.5% illustrated only minimal color change around the edge.

Their durability has not been fully elucidated, because, the “componeer” system was presented in 2011 at the International Dental Show (Cologne, Germany). Presumably, their service life is at least 10 years [27].

In half of the positions “componeer” veneers have a clear advantage over ceramic veneers, they are able to compete with them quite well [27

Table 1.

(according to Donskova A.V.)

Comparative characteristics of aesthetic structures

Indicator	Ceramic veneers	«Componeer» composite veneers
Structure thinkness	0,5- 0,9 mm	0,3-0,7 mm
Personnel involved in working process	Dentist, assistant, dental technician	Dentist, assistant
Number of visits	4-5	1
Predictability of the final result	-	+
Possibility of allergic reactions to the material	-	+
Aesthetics	Color and shape stability, smooth surface, permanent gloss	Relative color and shape stability, smooth surface, permanent gloss
Service life	10-15 years	Presumably 10 years or more

The use of composite veneers in the anterior region to correct the shape and color of teeth, replace inadequate restorations and align the dentition requires good technical skills and artistic ability from the denstist to recreate adequate contour, shape and texture of the tooth surface. Another important factor is the ability to work with the optical characteristics of the material, which determines the exact reproduction of the color of the restoration [30].

Color is an optical property that mainly determines how a tooth is visually perceived.

The clinician needs a good understanding of the three-dimensional color coordinate system, including hue, saturation, and brightness, as well as aspects of light transmission and opacity.

The nature of the tooth structure is such that optical properties such as translucency, opalescence and fluorescence must also be taken into account.

The visual perception of a tooth is highly dependent on these properties and is determined by how the tooth reflects light, which is then perceived by the observer's eye.

In order to mimic the light reflection of a natural tooth, “GC Gradia Direct” has a microfilled composite matrix including silicates and prepolymerized fillers. The number of each component and the range of particle size distribution are selected in such a way that together they create multiple reflective surfaces with different properties in the material. The result is the appearance of a complex internal structure with a large number of reflective facets - similar to the structure of a natural tooth, which, due to multiple internal reflections, reproduces the optical properties of a living tooth and provides a natural aesthetics of the restoration.

For a large proportion of restorations, “Gradia Direct” can be used in a single shade technique. However, to create truly esthetic and natural-looking composite veneers, multiple shades and translucencies need to be applied. So, if only correction of the shape and position of the tooth is performed, the imitation of a natural tooth is created by creating the inner surface of the dentin layer with a more opaque composite (shade Inside Special), while the outer surface of the dentin layer is performed using the “Standard Shade” shade.

At the end of the procedure, the enamel layer is reproduced with a more translucent composite (Outside Special shade), which gives the restored tooth a vital natural look.

Whle working with a strong discoloration tooth, a different layering technique is used. In this situation, the use of Opaque Dentin (Inside Special) and Dentin Standard Shade will not completely mask the discoloration. An opaquer is required - materials from the Gradia Lab Kit can be used for this.

Shade must be consistently built up during the restoration process by using composites of varying degrees of translucency of opaquer, opaque dentine, dentine and enamel. As you move from the preparation area to the restoration surface, the opacity of the materials used should decrease. In this case, an adequate shade depth of the restoration can be achieved. In order to avoid the appearance of an excessive thickness of the restoration, a space of 1-1.2 mm should be sufficient for applying the mentioned four composite layers [30].

One of the frequent causes of extensive defects in crowns is irreversible processes of destruction in hard tissues resulting from the complication of caries and the death of the pulp of the tooth, pathological abrasion, wedge-shaped defects, traumatic injuries, etc. Filling cavities located on the approximate surfaces of the tooth is considered one of the most difficult tasks, since the greatest number of difficulties arise when restoring contact surfaces.

Due to progress in the field of adhesion, composites are actively used in the restoration of chewing groups of teeth. They consist of an organic matrix reinforced with an inorganic filler. These phases are interconnected, but the connection between them is the weak point of the material, because has low strength. Over the past decade, a variety of filling materials have been developed that differ in the composition of the organic matrix and the dispersion of the filler. Basically, scientific research was aimed at creating composites that, in addition to good polishability, would have good strength and wear resistance. Thus, first hybrid, then microhybrid, and finally highly filled microhybrid composites appeared, which contain 80% by weight of a mineral filler based on glass with an average particle size of 0.04 to 0.3 μm [9]. To achieve optimal polishability and abrasion resistance, as well as physical and chemical characteristics, particles of different sizes are distributed in a certain order. With the achievements of modern dentistry, composites have good aesthetic properties, but they also have disadvantages, first of all, this is a violation of the marginal fit, the main reason is depressurization due to shrinkage of the material during polymerization. This can lead to exfoliation of the composite from the walls of the cavity and the appearance of microcracks, microcracks and, as a consequence, the development of secondary caries

[10,11]. Composite restorations become defective early: after six months, 30% of fillings fail, after a year - more than 50%, after 2 years - 70% [12]. In 34.6% of patients, the reason for tooth extraction was poor-quality treatment, repeated loss of composite restorations, the presence of secondary caries, which most often occurs on contact surfaces [14]. Frequent replacement of restorations leads to an increase in the size of the cavity, and repeated preparation thins the walls [13]. Larger cavities require more material, and even when using a layered composite technique, excessive stress between the bonded surfaces cannot be avoided. In his study, Watts D. noted that the so-called C-factor (cavity configuration factor) is defined as the ratio of the number of surfaces that interact with the material during polymerization to the number of free ones. The lower the C-factor, the lower the possibility of tearing due to internal stresses, and when the C-factor is high (as, for example, in cavities located on the proximal surfaces of the tooth), only adhesively cemented restorations can reduce this risk [15,16].

Based on the indicated shortcomings of direct composite restorations, the best method for restoring large cavities (especially Class 2 according to Black), recreating the tubercle structure, would be the production of ceramic inlays. The rigidity of the ceramic allows restoration of the strength of the crown and good marginal fit due to the precise milling of the restoration. Many authors note the advantages of inlays - these are high strength, no shrinkage and non-polarized bonds (from 5 to 20% are present in composite materials), biocompatibility with the human body, color fastness, abrasion resistance and long service life. From the point of view of hygiene, it does not accumulate plaque, and it is inert to the tissues of the oral cavity. [17].

The analysis showed that clinicians note the greatest number of problems at the final stage of restoration (formation of the enamel layer, application of a “microrelief”, finishing) due to the occurrence of visual aberrations, i.e. "eye blurring" with extensive restorations, including 4-6 teeth.

The main task in aesthetic dentistry is to recreate the natural appearance of the tooth, but composite restorations become defective early and after 6 months, 30% of the fillings are untenable, after 12 months - more than 50%, and after 2 years - 70% [12].

Recently ceramic inlays made on the CEREC apparatus have gained great popularity in dentistry.

CEREC (Chairside Economical Restorations of Esthetic Ceramic) is a device for economic and aesthetic ceramic restoration [18, 19], which is used to fabricate porcelain inlays, crowns, bridges and veneers [20, 21]. The device consists of two parts: the first is a personal computer for receiving and processing personal data and the second is a grinding unit in which the future inlay is made. To obtain a three-dimensional image, the device has an intraoral camera. Due to computer modeling, a more accurate restoration of the destroyed crown part of the tooth is possible. Depending on which defect needs to be restored, different types of inlays are used: “Inlay” - located only inside, “Onlay” - microprostheses covering the occlusal surface of the tooth and at the same time entering at different depths into its hard tissues, and “Overlay” - covering a large area from the outside part of the tooth crown [22]. The dental restoration process takes place in one visit. The preparation of teeth for an inlay made using the CEREC apparatus is the same as for any one [23]. The prepared cavity is covered with a thin layer of anti-reflective powder, and a picture is taken using a 3D camera. A picture of the tooth appears on the monitor screen, and the doctor begins to model the missing part. The 3D image, enlarged by 12 times, allows you to model the structure more accurately. After drawing all the lines, the computer calculates the volume of the inlay and transfers this data to the grinding block; after 10–20 minutes, the inlay is ready and you can start fitting and fixing it [24, 25]. CEREC porcelain inlays do not require special care, it is enough to follow basic hygiene rules and doctor's advice.

In the study conducted under the guidance of A. K. Amanov, Z. E. Isin, the main and additional examination materials were used: survey, examination, palpation, percussion, electroodontometry, temperature diagnostics. Patients were examined in two groups of 5 people. In the first group there were patients with composite restorations (treatment duration - 3 years), in the second group - with ceramic restorations (treatment duration - 3 years).

During examining patients of group I: in 2 patients, the fillings stand out, the border between the filling and the tooth, painted in brown, emphasizes the difference, in

1 patient, composite fillings cover the entire front surface: monophonic, matte, which does not look at all aesthetically pleasing. In 2 patients, there was a recurrence of caries in the cervical part, completely destroyed teeth were noted - as a result of breaking off the filling. All patients had an indicative fact of plaque accumulation on the border between the composite filling and the tooth, chronic gingivitis. While examining the II group of patients: the teeth look satisfactory. Because of poor hygiene, 2 patients had a slight brown coating on the neck of the teeth. The appearance of ceramics in all patients: absolutely did not lose either luster or color. The gum around the teeth is healthy. No chips were noted. Patients are satisfied with the aesthetic appearance and functional characteristics of the restorations [26].

In the scientific work of Korsun D. I compiled a rating of dental restorations, where all types of restorations presented in the work were evaluated according to such criteria as durability, strength, shrinkage, discoloration over time, aesthetics, promoting the accumulation of plaque, the ability to restore deep defects hard tissues and the ability to eliminate tooth discoloration, as well as functional rehabilitation [7].

If IDOST (index of destruction of the occlusal surface of the tooth) is equal to 0.2–0.4 or erosion, discoloration of the hard tissues of the teeth after eruption in a small amount, the use of direct composite restoration is recommended [6]. In the event that IDOST is equal to 0.4–0.6 or enamel hypoplasia, as well as a crown fracture within the enamel, a low clinical height of the crown part of the tooth, the use of ceramic veneers and inlays is recommended [8]. While IDOST is more than 0.6, the teeth are pulpless or there are significant non-carious lesions of the teeth, the use of crowns is recommended, often in combination with a pin stump tab.

Conclusion

Composite veneers are a minimally invasive, fast and relatively low-budget restoration of the shape and color of anterior teeth. However, obtaining a highly aesthetic and long-term result is possible only when using prefabricated composite veneers or prefabricated composite teeth for removable dentures and indirect preparation and fitting techniques. Currently, there are no long-term clinical studies on the effectiveness of treatment using prefabricated composite veneers and comparing

direct and indirect methods of their application. Thus, despite the development of modern composite materials when filling large cavities, the dentist faces a number of disadvantages, and lower porosity, high strength, abrasion resistance, good marginal fit and long service life provide a number of advantages when choosing between direct composite restoration and ceramic inlay in the direction of making the inlay by the indirect method.

Литература/References

1) Рабинович М.И., Липкинд Ж.А. Клинический опыт применения новой системы compoпeer для прямой реставрации фронтальной группы зубов // Клиническая стоматология – 2013. N 1. С. 40-41.

2) Козицына С.И., Грицай И.Г., Макарова А.Н., Кириенко А.Ю., Дмитриева Н.Г. Что такое виниры и ультравиниры? // Клиническая стоматология – 2011. N. 3. С. 42-45.

3) Любомирский Г.Б. Применение системы Compoпeer для прямой реставрации зубов фронтальной группы // Кафедра Cathedra – 2015. N. 52. С. 36-37.

4) Флейшер Г.М. Неинвазивное протезирование люминирами // Актуальные проблемы гуманитарных и естественных наук – 2016. N. 2-4. С. 122-130.

5) «Эстетическая реставрация зубов с применением нанокомпозитов» м.А. Смирнова, Ж.П. Хиора.

6) «Слои» атлас послойных композитных реставраций Йорди манатута, Анна Салат.

7) Корсун Д. И. Сравнительная характеристика предпочтительных методов реставрации при различных заболеваниях твердых тканей зубов // FORCIPE. 2019. № Приложение. С. 784. URL: http://ojs3.gpmu.org/index.php/forcipe/article /view/1948/1950

8) «Керамические виниры; Искусство и наука» Галип Гюрель.

9)Жолудев Д.С., Медведев А.Н., Жолудев С.Е. Обоснование применения керамических вкладок при лечении кариозных поражений 2 класса по Блэку жевательной группы зубов // Ортопедическая стоматология, 2013. N 3. С. 40-45.

10)Воробьева Ю.Б., Шумилович Б.Р., Иванов С.Г., Красавин В.Н. Применение BULKFILL композитов при реставрациях коронковой части жевательной группы зубов // Вестник новых медицинских технологий, 2015. N 2. С. 2-14.

11)Кисельникова Л.П., Ковальчук М.А., Мастерова И.В., Плюхина Т.П., Лебеденко И.Ю. Клиническая и лабораторная оценка эффективности применения прямых икомпозитных реставраций и керамических вкладок, изготовленных на аппарате Cerec,у детей //Российский стоматологический журнал,2013.N 3.С.32-35.

12)Николаев А.И. Какой композит лучше? // Институт стоматологии,2000. N 4. С. 48—50

13)Гаращци Г. Прямые реставрации жевательных зубов — методики эффективной фиксации // DentaliQ, 2005. N 5. С. 58-67.

14)Braga R.R. Influence of cavity demonsions and derivatives (volume and «C» factor) on shrinkage stress development and microleakage of composite restorations // Dental Materials, 2008. V.22. N 9. P. 818-823.

17) Жабина Ю. А. Сравнительная характеристика прямого и непрямого методов реставрации // Бюллетень медицинских интернет-конференций. 2017. Т. 7. № 10. С. 1520-1522. URL: https://medconfer.com/node/12871

18)Haller B., Ernst C.P., Hugo B. [et al.] Assment of ceramic restorations according to the Cerec method // Int. J. Comput. Dent, 2006. N 2. P. 153-155.

19)Barnes D., Gingel J.C., George D. [et al.] Chairside vs. labside ceramic inlays: Effect of temporary restoration and adhesive luting on enamel cracks and marginal integrity // Dental Materials, 2011. N 9. P. 92-98.
20)Kerstein R.B. Computerized occlusal analysis tehnology and CEREC case finishing // Intern. J. Computerized Dent, 2008. N 1. P. 51-63.
21)Otto T. Schneider Long-term clinical results of chairside Cerec CAD/CAM inlays and onlays: a case series // Int. J. Prosthodont, 2008 N 1. P. 53-59.
22)Аболмасов Н.Г., Аболмасов Н.Н., Бычков В.А., Аль-Хаким А. Ортопедическая стоматология. - М. : МЕДпресс-информ, 2013. 512 с.
23)Арутюнов С.Д., Жулев Е.Н., Волков Е.А. Одонтопрепарирование при восстановлении дефектов твердых тканей зубов вкладками.- М.: Молодая гвардия, 2007. 136 с.
24)Туркина А.Ю., Акимова И.В., Акимова М.Ю. Реставрация окклюзионной поверхности моляров с использованием термопластического ключа // Clinicai dentistry, 2013. N 3. С. 10-13.
25)Касаева А.И., Козырева А.К., Мрикаева О.М. Сравнительная оценка цветоустойчивости современных композиционных материалов, используемых в терапевтической стоматологии // The Journal of scientific articles "Health and Education Millennium", 2016. Vol. 18. N 1. С.94-96.
26) Аманова А. К., Исина З. Е. Сравнительная характеристика реставрации композиционными материалами и керамическими вкладками // Опыт и перспективы развития медицинского образования в странах Центральной Азии : материалы международной науч.-практ. конф, 26-27 апреля 2012 года. Караганда, 2012. С. 24-25. URL: http://webirbis.kgmu.kz/irbis64r_11/books/конференции_КГМА_пбд/опыт_и_перспективы_развития_медицинского_образования_в_странах_Центральной_Азии.pdf#page=24
27) Донскова А. В. Система композитных виниров как альтернатива керамическим // Бюллетень медицинских интернет-конференций. 2017. Т. 7. № 10. С. 1523-1525. URL: https://medconfer.com/node/12878
28) Мусаев Р. А. Виниры: композитные и керамические // Бюллетень медицинских интернет-конференций. 2015. Т. 5. № 11. С. 1298. URL: https://medconfer.com/files/archive/2015-11/2015-11-5-T-5418.pdf
29) Pincus CL. «Building mouth personality». A paper presented at:California State Dental Association, 1937:San Jose, California.
30)Уханов М. М., Селягина А. С. Готовые композитные виниры : обзор // Электронный инновационный вестник. 2019 .№4. С.22-34. URL: https://www.researchgate.net/profile/Mikhail-Ukhanov/publication/330205071_refabricated_Composite_Veneers_An_Overview/links/5ce92834a6fdccc9ddcd2be7/Prefabricated-Composite-Veneers-An-Overview.pdf

УДК: 612.662.9:618.17-008.8:616.31-07-093/-098-092

POSTMENOPAUZA DAVRIDAGI AYOLLARDA STOMATOLOGIK KASALLIKLARINING KLINIK VA MİKROBILOGIK KO'RSATMALARI VA MEXANIZMLARI.

Nazarova Nodira Sharipovna[1], Islomova Nilufar Bustanovna[2]
[1]Diplomdan keyingi ta'lim fakulteti stomatologiya kafedrasi dotsenti, t.f.d.
[2]Ortopedik stomatologiya kafedrasi assistenti
Samarqand davlat tibbiyot universiteti