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METHOD OF VORT IN PRACTICE OF DENTISTRY

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ABOUT ARTICLE

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Abstract: The challenge facing reconstructive dentistry today is how to achieve excellent aesthetic results while preserving the biological structures involved as much as possible. Today, clinicians and dental technicians have materials and procedures at their disposal that make it possible to recreate aesthetics and function in a simpler and more predictable way.

INTRODUCTION

One of the main clinical complications of non—removable prosthetics on natural teeth is an unsatisfactory aesthetic result due to the apical migration of the gingival margin. Thanks to the concept of BOPT (Biologically oriented preparation technique), the clinician and dental technician can influence the tissues surrounding the tooth, changing their shape and tooth architecture, regardless of any pre-existing dental or gingival limitations.

We know that the apical migration of the gum is associated with various factors:

1. Inadequate quality and quantity of keratinized gums (thin biotypes are more likely to have recessions)
2. Reaction to injury during prosthetics (preparation, gum retraction). Chronic inflammation due to prosthetics errors (open edges, violation of biological width, horizontal hyperconture)
3. Poor oral hygiene and toothbrush injury.

With the BOPT concept, it is possible to transfer the anatomy of teething from the gum to an artificial crown. This will ensure free interaction with the gum, which will adapt, take shape and settle around new shapes and profiles. The contours of the crown obtained using the BOPT technique may seem overly pronounced, based on the traditional definition of "hyperconture". Clinically, there is no redundant contour, but there is a "different new contour" and a new PCEJ (orthopedic cement-enamel compound) (Fig. 1).



Fig.1.

MATERIAL AND METHOD

Among the factors related to the BOPT concept, one is particularly important: the preparation technique and the corresponding geometry of the final preparation line.

Traditionally, there are two types of crown preparation:

1. Preparation with end lines (also called horizontal)

Ledge

Shoulder ledge with bevel

Ledge inclined shoulder (50 degrees and 135 degrees)

Rounded ledge

Rounded ledge with a bevel

2. Dissection without an end line (also called vertical), described as an edge from a light touch of the edge of a bird's feather.

Horizontal dissections are preferable when the clinical and anatomical crown coincide, and when the periodontal condition is good. The edges of the crown are located next to the cement-enamel joint (CEJ).

Dissection without end lines is more conservative and is used when the clinical crown does not match the anatomical crown due to loss of stability due to periodontal disease.

Although preparation in the form of a bird's feather edge is usually indicated for use in periodontal affected teeth used as support for fixed prostheses, this approach may also represent a less invasive alternative to a horizontal edge in various other clinical settings.

They include the replacement of old crowns (fig. 2), which have:

- inadequate quality and quantity of keratinized gums
- violation of biological width
- changing the color of the gums
- impaired gum architecture



Fig.2.

As well as under conditions such as endodontically treated teeth or live teeth in young people who require a change in color or shape, or are susceptible to erosive and abrasive pathologies.

Fig.3 illustrates the BOPT technique with veneers without preparation.



Рис.3.

The main clinical difference between horizontal and vertical dissection is that in the first case, the edge is set by the dentist and leaves a clearly defined line on the tooth, which is then reproduced in the impression and working model. In vertical preparation, the boundary is determined by a dental technician based on information about the gum tissues.

RESULTS

Before starting treatment with a periodontal probe, a careful intracerebral probing is performed to assess the level of epithelial attachment (Fig. 4).



Fig.4.

Preparation of the tooth in the form of a bird's feather edge is performed using a flame-shaped boron, separating the points of inter-proximal contacts and following the contour of the gum in order to remove the undercurrents of the natural tooth and ensure an adequate fit of the crown (Fig. 5).

At the end of tooth preparation, a minimum space of 0.3 mm along the edge, 0.5 mm along the axial walls and from 1 to 1.5 mm on the occlusal surface is provided to ensure sufficient mechanical resistance of the crown. The final shape of the preparation has a slightly conical shape (from 2 to 6 degrees), which allows you to get a full 360-degree view of the cervical perimeter of the natural supporting tooth (Fig.5).



Fig.5.

Boron simultaneously interacts with the inner wall of the tooth inside the groove and with the epithelial component of gum attachment (the technique of gingival curettage using boron). This removes the existing CEJ or the existing horizontal end line. This allows you to create a finishing zone within which the edge of the crown can move coronally or apically.

Rebasing the temporary crown is the key to understanding how to create a new CEJ. The new edge of the temporary crown with a new shape and a new contour is located in the groove no deeper than 0.5–1 mm, fully respecting the biological width (controlled insertion into the gingival furrow) (Fig. 6).





Fig.6.

Curettage preparation, together with tooth reduction, will create a space that will be filled with a clot from intracellular bleeding. Inside, the groove part of the edge of the temporary crown will support the edge of the gum circumference, ensuring the stabilization of the blood clot into a fully structured gum tissue (clot preservation). The healing process will determine the reattachment and thickening of the gingival tissue, which will form and adapt to the new eruption profile (Fig. 7).



Fig.7.

After at least four weeks, the gum tissue will stabilize, and it will be possible to remove the impression for final restoration.

Cementing of a permanent crown is performed using a cofferdam when the end line is located near the edge of the gum. In this case, the usual adhesive procedure is performed, including etching, priming and bonding of the tooth surface, and light-curing composite cement is used. When the edge of the crown is located inside the gingival groove, alternative systems are used to isolate the environment from moisture (for example, lip retractors, cotton pads or retraction threads to control the gingival groove fluid) (Fig. 8).



Figure 8.

If coronary or apical soft tissue migration is required, in accordance with aesthetic expectations, we can change both the temporary crown and the final edge of the crown by creating a new orthopedic CEJ, more coronary or more apical. After a few weeks, the edge of the gum adapts to this new eruption profile (Fig. 9).

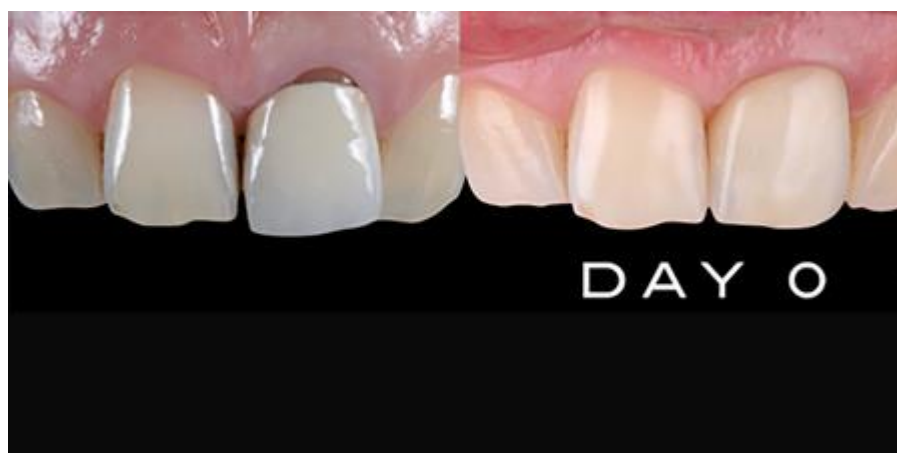




Fig.9.

CONCLUSION

The scientific literature contains extensive criticism of the edge of dissection in the form of a bird's feather edge, mainly due to the presence of a hypercontour of the crown and, as a result, the fragility of the crown associated with the limited thickness of the crown in the cervical region. It should be emphasized that in everyday dental practice, however, these problems have no real clinical significance and, apparently, do not represent a specific risk factor either for periodontal health or for the strength of restoration if the correct clinical and dental requirements are met. The reaction of soft tissues observed for a long time is optimal, with a stable position of the gums and absolutely no signs of inflammation. This can be explained by the anatomical condition that is achieved using this approach, which consists in creating an artificial CEJ, similar to the cement-enamel compound found in nature. The edge of the artificial crown creates an excessive contour, just as it happens in a natural CEJ, where there is always a change in the slope of the profile between the root and the crown. This small marginal bulge provides support for periodontal tissues, providing excellent stability of the gum contour. The edge of the artificial crown remains located in the surface part of the space inside the gingival groove, without damaging the periodontal attachment. Moreover, the vertical edge is compatible with a high level of precision of the edge fit of the crown, which also affects the health of marginal tissue and ensures lower penetration of carious bacterial flora.

The strength of a permanent artificial crown (whether it is lithium disilicate, zirconium dioxide or cermet) is guaranteed both by an adequate occlusal thickness and by strengthening the edge area due to a slight increase in the penetration profile of a thin layer of ceramics, zirconium dioxide or metal (for cermets). This moderate increase in the edge thickness creates a neck garland, which strengthens the artificial crown.

Using the VORT method, a dentist and a dental technician can easily and predictably interact with the tissues surrounding the tooth. Clinical results are achieved through the crown itself, both temporary and permanent (the location of the edge, the profile of the eruption, the shape of the tooth). Such an orthopedic approach using a flap-free preparation method in the form of a bird's feather edge is easier and faster compared to other preparation methods (rounded ledge, shoulder ledge, etc.).

We can achieve high-quality clinical and aesthetic results in terms of soft tissue stability at the border of the crown and gum tissue using a minimally invasive approach, preserving as many biological structures involved in treatment as possible.

REFERENCE

1. Nazhmiddinovich S. N. et al. CORRECTION OF PSYCHOEMOTIONAL ANXIETY IN ADULTS AT DENTAL APPOINTMENT //Лучшие интеллектуальные исследования. – 2024. – Т. 18. – №. 4. – С. 43-51.
2. Nazhmiddinovich S. N. et al. COMBINED USE OF METALLOKERAM AND CHICAL MATERIALS IN THE TREATMENT OF WEDGE DEFECTS //Лучшие интеллектуальные исследования. – 2024. – Т. 18. – №. 2. – С. 138-145.
3. Садриев Н. Н. и др. АНАЛИЗ ПОЛОВЫХ РАЗЛИЧИЙ В СТРОЕНИИ ЧЕЛЮСЕЙ В ГОРОДЕ САМАРКАНДЕ ПО ДАННЫМ КОНУСНО-ЛУЧЕВОЙ КОМПЬЮТЕРНОЙ ТОМОГРАФИИ //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2024. – Т. 41. – №. 5. – С. 109-116.
4. Nazhmiddinovich S. N. et al. CURRENT ASPECTS OF COMPREHENSIVE DENTAL CARE FOR PATIENTS WITH DEFECTS OF THE MAXILLOFACIAL AREA //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2024. – Т. 41. – №. 5. – С. 117-123.
5. Nizom S. et al. AUTOIMMUNE INFLAMMATION-AS A CAUSE-AND-EFFECT RELATIONSHIP BETWEEN PERIODONTAL DISEASE AND ATHEROSCLEROSIS //Журнал академических исследований нового Узбекистана. – 2024. – Т. 1. – №. 1. – С. 123-127.
6. Sadriev N. et al. OPTIMIZATION OF TREATMENT OF PULPITIS OF PERMANENT TEETH IN ELDERLY AGES //Журнал академических исследований нового Узбекистана. – 2024. – Т. 1. – №. 1. – С. 128-131.
7. Sadriev N. et al. ROLE OF CLINICAL AND FUNCTIONAL STUDIES IN THE DIAGNOSIS OF PERIODONTAL DISEASES DURING ORTHOPEDIC TREATMENT //Центральноазиатский журнал междисциплинарных исследований и исследований в области управления. – 2024. – Т. 1. – №. 1. – С. 174-177.

8. Sadriev N. et al. APPLICATION OF THE DRUG" TRAUMEL WITH" U SICK WITH PARENT-INFLAMMATORY DISEASES MAXILLOFACIAL AREA //Центральноазиатский журнал междисциплинарных исследований и исследований в области управления. – 2024. – Т. 1. – №. 1. – С. 55-58.
9. Sadriev N. et al. ORTHOPEDIC TREATMENT OF PATIENTS WITH MALOCCLUSIONS OF THE FIRST AND SECOND CLASS ACCORDING TO ENGLE //Журнал академических исследований нового Узбекистана. – 2024. – Т. 1. – №. 1. – С. 43-46.
10. Sadriev N. et al. MANIFESTATION OF THE ORAL MUCOSA IN COVID-19 //Центральноазиатский журнал междисциплинарных исследований и исследований в области управления. – 2024. – Т. 1. – №. 1. – С. 45-54.
11. Nizom S. et al. FEATURES OF ETIOPATHOGENETIC TREATMENT INFLAMMATORY PERIODONTAL DISEASES //European International Journal of Multidisciplinary Research and Management Studies. – 2024. – Т. 4. – №. 01. – С. 178-184.
12. Nizom S. et al. RESEARCH OF THE MORPHOFUNCTIONAL STATE OF THE TISSUES OF THE ORAL CAVITY ORGANS WHEN USING NON-REMOVABLE ORTHOPEDIC STRUCTURES //European International Journal of Multidisciplinary Research and Management Studies. – 2024. – Т. 4. – №. 01. – С. 197-203.
13. Санакулов Ж. О. МАРКЕР ОСТЕОПОРОЗА ПРИ ПЛАНИРОВАНИИ ОРТОПЕДИЧЕСКОГО ЛЕЧЕНИЯ //Лучшие интеллектуальные исследования. – 2024. – Т. 19. – №. 1. – С. 214-221.
14. Obloberdiyevich S. J. et al. MODERN METHODS PREVENTION AND TREATMENT POSTOPERATIVE HYPERESTHESIA IN ORTHOPEDIC DENTISTRY //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2024. – Т. 41. – №. 5. – С. 80-87.
15. Obloberdiyevich S. J. et al. REQUIREMENT FOR ORTHOPEDIC DENTAL CARE OF ADULT URBAN POPULATION OF THE REPUBLIC OF UZBEKISTAN //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2024. – Т. 41. – №. 5. – С. 73-79.
16. Ахмадов И., Санакулов Ж. НЕДОСТАТКИ И ПРЕИМУЩЕСТВА РАЗЛИЧНЫХ ТЕХНИК ПОЛУЧЕНИЯ СЛЕПКИ ЗУБОВ //Центральноазиатский журнал образования и инноваций. – 2024. – Т. 3. – №. 1 Part 3. – С. 41-46.
17. Ахмадов И. Н. и др. ОПРЕДЕЛЕНИЕ ОПТИМАЛЬНОГО ВЕРТИКАЛЬНОГО ИНДЕКСА //Лучшие интеллектуальные исследования. – 2024. – Т. 18. – №. 2. – С. 129-137.
18. Nizomitdin A. I. et al. DETERMINING THE OPTIMAL VERTICAL INDEX //Лучшие интеллектуальные исследования. – 2024. – Т. 18. – №. 2. – С. 120-128.

19. Ахмадов И. Н. и др. ЛИЦЕВАЯ ДУГА И БЕЗ НЕЕ //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2024. – Т. 41. – №. 5. – С. 88-98.
20. Nizomitdin A. I. et al. FACE BOW AND WITHOUT IT //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2024. – Т. 41. – №. 5. – С. 99-108.
21. Axmadov I. ORTOPEDIK STOMATOLOGIYADA ISHLATILADIGAN TURLI QOLIP OLUVCHI XOM-ASHYOLARNING AFZALLIKLARI VA KAMCHILIKLARI //Журнал академических исследований нового Узбекистана. – 2024. – Т. 1. – №. 2. – С. 126-131.
22. Ахмадов И., Санакулов Ж. НЕДОСТАТКИ И ПРЕИМУЩЕСТВА РАЗЛИЧНЫХ ТЕХНИК ПОЛУЧЕНИЯ СЛЕПКИ ЗУБОВ //Центральноазиатский журнал образования и инноваций. – 2024. – Т. 3. – №. 1 Part 3. – С. 41-46.