Spanish Journal of Innovation and INTEGRITY
ISSN: 2792-8268
Volume: 37, Dec-2024
http://sjii.indexedresearch.org

New Horizons in Orthodontics: Changes in the Dental System using Non-Removable Devices

Barotov Iftikhor Mustakimovich
Basic doctoral student at Bukhara State Medical Institute named after Abu Ali ibn Sino

Ibragimova Feruza Ikromovna
Associate Professor of the Department of Orthopedic Dentistry and Orthodontics, Bukhara State Medical Institute named after Abu Ali ibn Sino, PhD, Associate Professor

Abstract: *Orthodontics has significantly advanced in recent years, especially with the use of non-removable orthodontic devices. These devices are essential in the correction of various malocclusions and dental alignment issues. This study explores the effectiveness of non-removable orthodontic appliances in achieving optimal dental outcomes. The research investigates the correction of overbites, underbites, crossbites, and other dental irregularities in patients of different age groups. With the utilization of advanced techniques and the application of fixed orthodontic devices such as braces, significant improvements in the alignment of teeth and occlusion have been observed. The results suggest that non-removable devices offer higher precision and more sustainable outcomes compared to removable alternatives, providing patients with a long-term solution for improving both function and appearance of their dental structures. This study emphasizes the growing importance of such devices in modern orthodontic treatments and highlights their advantages in clinical practice.*

Key words: *orthodontics, non-removable devices, dental system, malocclusion, fixed appliances, teeth alignment, overbite, underbite, dental irregularities.*

Relevance

The relevance of this study lies in the increasing demand for advanced and effective orthodontic treatments that ensure lasting dental health and aesthetic improvements. In recent years, orthodontics has evolved from traditional methods to more precise and comfortable solutions, and non-removable devices have emerged as one of the most reliable approaches. Malocclusions and other dental irregularities are common issues faced by individuals of all ages, ranging from mild misalignments to severe bite problems. The use of non-removable appliances, particularly fixed braces, offers a more predictable and effective solution compared to removable devices that require patient compliance. The increasing awareness of oral health and the rising aesthetic expectations from patients have led to a higher demand for orthodontic treatments with better long-term results. Non-removable devices are also beneficial in correcting severe malocclusions that might not respond well to removable appliances. By providing continuous and consistent pressure, these devices help in the precise movement of teeth, ensuring a more accurate bite and improved function. The growing interest in cosmetic dentistry and the desire for better facial aesthetics have made non-removable devices an essential tool in contemporary orthodontics. Their ability to deliver comprehensive treatment for a wide range of dental issues, combined with advancements in materials and techniques, makes them a pivotal aspect of modern orthodontic care.

Purpose, Materials, and Methods

The primary purpose of this study was to assess the effectiveness of non-removable orthodontic devices in correcting various dental malocclusions and to compare their outcomes with those of removable

devices. This research aims to provide insight into the role of fixed orthodontic appliances in modern dental practice, particularly in the correction of overbites, underbites, crossbites, and other alignment issues.

Materials used in the study include a variety of non-removable devices such as traditional metal braces, ceramic braces, and lingual braces, applied to patients with different types of malocclusions. The study included 150 patients, aged 12 to 35 years, who were selected based on specific inclusion criteria such as mild to moderate malocclusion, good overall oral health, and willingness to undergo orthodontic treatment.

The methods employed involved a combination of clinical assessments, photographic analysis, radiographic imaging, and occlusal analysis at the beginning, during, and after treatment. The patients were monitored regularly to assess the movement of the teeth, changes in the occlusion, and the overall dental alignment. The results were then compared based on the degree of improvement in dental alignment, occlusal relationship, and aesthetic appearance.

Results

The results of the study demonstrated significant improvements in the dental alignment and occlusal relationships of patients treated with non-removable orthodontic devices. The average correction of overbites was 3.5 mm, and underbites showed an improvement of 4.2 mm on average. Crossbites were corrected by an average of 2.8 mm. Additionally, the overall improvement in dental aesthetics was noticeable, with 85% of patients reporting a significant improvement in both function and appearance of their teeth.

In terms of effectiveness, 90% of the patients showed a positive response to treatment with non-removable devices, experiencing notable improvement in both the alignment of their teeth and their bite. The remaining 10% showed moderate improvements, but their treatment required a longer duration or additional interventions. The study also highlighted the reduced need for patient compliance, as non-removable devices provide continuous correction without the need for patient involvement in device management.

The outcomes were consistently positive, with a low incidence of complications, mainly minor discomfort during the initial stages of treatment. The results affirm that non-removable orthodontic devices offer a more predictable, efficient, and sustainable solution for patients seeking correction of malocclusions.

Conclusion

The study confirmed the high efficacy and reliability of non-removable orthodontic devices in the correction of various dental malocclusions. Non-removable devices, such as traditional metal braces, ceramic braces, and lingual braces, provided significant improvements in both the aesthetic and functional aspects of the dental system. The average correction rates of overbites, underbites, and crossbites were substantial, and most patients achieved satisfactory results with minimal complications.

This research highlights the advantages of non-removable devices over removable ones, particularly in terms of consistent, continuous treatment and predictable outcomes. The low level of patient dependence on compliance makes these devices particularly suitable for individuals who require long-term orthodontic care. Furthermore, the results underscore the growing role of non-removable appliances in modern orthodontics, especially given the increasing demand for both functional and aesthetic improvements in dental treatments.

In conclusion, non-removable orthodontic devices provide a reliable, efficient, and effective solution for treating a wide range of dental issues. Their ability to deliver precise results with minimal patient

involvement makes them an invaluable tool in contemporary orthodontic practice, benefiting patients who require long-term, consistent orthodontic correction.

Literature

1. Ikromovna I. F., Jumatovich J. U., Elmuradovich I. G. Influence of the harmful factors of manufacture of synthetic detergents and cleaners on the clinical-functional parameters of the oral cavities in the workers //European science review. – 2014. – №. 9-10. – С. 31-32.
2. Ибрагимова Ф. И., Жумаева А. А., Ражабова Д. Б. Влияние неблагоприятных факторов условий труда в производстве синтетических моющих и чистящих средств на состояние тканей паро-донта у рабочих //Наука молодых–Eruditio Juvenium. – 2015. – №. 1. – С. 31-34.
3. Ikromovna I. F. Prevalence and character of the oral cavity mucosa in the workers of the manufacture of the synthetic detergents //European science review. – 2016. – №. 3-4. – С. 178-179.
4. Ибрагимова Ф. И., Замонова Г. Ш. Влияние вредных факторов производства на клинико-функциональные показатели полости рта рабочих //Символ науки. – 2016. – №. 8-1. – С. 181-182.
5. Ibragimova F. I., Idiev G. E. The state of health of workers in the production of synthetic detergents and cleaning products." Problems of Biology and Medicine //International Scientific Journal.-Samarkand. – 2012. – №. 1. – С. 68.
6. Ибрагимова Ф. И., Жуматов У. Ж. Поражения слизистой оболочки полости рта у работающих в производстве синтетических моющих и чистящих средств //Молодежный инновационный вестник. – 2016. – Т. 5. – №. 1. – С. 165-166.
7. Ибрагимова Ф. И., Замонова Г. Ш. ОЦЕНКА НЕКОТОРЫХ ФУНКЦИОНАЛЬНЫХ ПОКАЗАТЕЛЕЙ ПОЛОСТИ РТА У РАБОЧИХ ПРОИЗВОДСТВА СЫРЬЕВЫХ КОМПОНЕНТОВ ДЛЯ СИНТЕТИЧЕСКИХ МОЮЩИХ СРЕДСТВ //Молодежный инновационный вестник. – 2016. – Т. 5. – №. 1. – С. 163-165.
8. Ибрагимова Ф. И., Замонова Г. Ш. Влияние вредных факторов производства на клинико-функциональные показатели полости рта рабочих //Символ науки. – 2016. – №. 8-1. – С. 181-182.
9. Ибрагимова Ф. И., Идиев Г. Э. Действие гипохлорита натрия (ингредиента синтетических моющих средств) на активность окислительно-восстановительных ферментов, и её коррекция введением растительных препаратов в эксперименте //Проблемы биологии и медицины–Самарканд. – 2017. – Т. 4. – С. 98.
10. Каримов Ш. И., Рахимбаева Г. С., Атаниязов М. К. Анализ отдаленных результатов операций каротидной эндартерэктомии при стенозирующих поражениях сонных артерий //Ангиология и сосудистая хирургия. – 2010. – Т. 16. – №. 3. – С. 103-106.
11. Атаниязов М. К., Рахимбаева Г. С. ТУРЛИ КОМОРБИДГА ЭГА ГЕМОРРАГИК ИНСУЛТДА ГЕМОРЕОЛОГИЯНИНГ АХАМИЯТИ. – 2024.
12. Рахимбаева Г. С. и др. Особенности лечения и реабилитация больных, перенесших COVID-19, с ишемическим инсультом. – 2023.
13. Ataniyazov M., Rakhimbaeva G. FEATURES OF THE COURSE OF ISCHEMIC STROKE IN CORONAVIRUS INFECTION //British Medical Journal. – 2023. – Т. 3. – №. 2.
14. Iskandar o'g'li Q. A., Maratovna D. H., Kamaliddinovich A. M. COVID 19 INFEKSIYASI BILAN CHALINGAN BEMORLARDA KOGNETIV BUZULISHLAR //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2023. – Т. 22. – №. 8. – С. 30-33.

15. Rakhimbaeva G., Ataniyazov M. COMORBID ASPECTS IN COVID-19 ASSOCIATED CEREBRAL STROKE //British Medical Journal. – 2023. – Т. 3. – №. 2.
16. Iskandar o'g'li Q. A., Maratovna D. H., Kamaliddinovich A. M. COVID 19 INFEKSIYASI BILAN CHALINGAN BEMORLARDA KOGNETIV BUZULISHLAR //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2023. – Т. 22. – №. 8. – С. 30-33.