Journal of Advanced Zoology

ISSN: 0253-7214

*Volume **44** Issue **S-5 Year 2023** Page **293:300***

Modern Methods Of Treating Severe Pathologies Through The Diagnosis Of Tooth-Jaweformations In Early-Aged Children

Fozilov Uktam Abdurazzoqovich

Bukhara, Uzbekistan, postal code 200100, Bukhara State Medical Institute named after Abu Ali ibn Sina, Uzbekistan

**Corresponding author's E-mail: info@bsmi.uz*

Article History

Received: 06 June 2023
Revised: 05 Sept 2023
Accepted: 13 Oct 2023

Abstract

In orthodontic patients, as well as early diagnosis of clinical signs of the disease, the organization of restoration of physiological functions of chewing efficiency in children is one of the pressing problems of pediatric orthodontic dentistry today. In children with pathological occlusion, it is possible to obtain dental – jaw joint before the occurrence of deformities, which are difficult to develop and treat pathologically, using the advantages of growth and rupture of teeth. It is considered promising to create a new way to correct pathological occlusion during the period of milk tooth priccus and tooth exchange, in order to restore physiological development in the area of the tooth – jaw system, prevent severe disorders in the tooth-jaw system and restore children's health.

Keywords: *Children, Health*

1. Introduction

Today, children with tooth row and occlusion disorders are often suckled the presence of problems with their breast milk absorption, against the background of speaking, breathing and feeding will be the basis for the development of this device. In early age, there are analogues of the orthodontic device used to move teeth and rows such as myofunctional trainers and plate-based removable orthodontic devices that prevent developing tooth jawneformations, better help in the period of growth of the facial sklet with quick snapshots [1.3.5]. In fundamental research on the development of the tooth-jaw system, Björk A. as the main factor in the formation of a deep blockage of incisors, the violation of the direction of the lower jaw indicates that it is precisely due to its forward rotation. Also in these pathologies, hereditary sagittal dysproportion of the jaws occupies an important place, in which the occlusion is also disturbed in the vertical plane.

According to researchers, correction of bite pathology during the period of tooth replacement is the most preferable way, which often excludes the need for treatment in adulthood. But in the last decade, in most cases, treatment is carried out at the age of 13-15 years, when development is almost complete. In the early stages of development, the refusal to correct the dentition-jawomalia leads to expressive distortions in the facial skeleton. Quality and stagnation of results, Persin L. S. (2020) believe that children with tooth-jaw disorders are considered dependent on early diagnosis and treatment. The results of early treatment are more stable, rarely relapsing, since it has been found that it is associated with factors such as the development of growing tissues, the rupture of teeth and the growth of alveolar tumors in the formation of roots. Deep blockage of incisors means generalization about excessive blockage of the lower jaws by the upper jaws. Deep incisor obstruction is defined as the obstruction of the lower incisors by more than 1/3 of the tooth crown by the upper incisors. A.I. According to Evdakimov's classification, deep incisor obstruction implies deep occlusion of the incisor tooth – incisor contact is preserved, and the incisor tooth contains deep disocclusion – there is no incisor fusion, which is more represented by a deep bite [2.4.6].

According to various authors, deep incisor blockage is the most common form of pathology in children and adolescents, accounting for 37.3% to 65% of the total number of dental anomalies. It was found that the prevalence of this pathology is associated with difficulties of correction in childhood and deterioration of the clinical condition with frequent tooth loss.

According to most authors, bilateral complete defects of the jaws in children are hereditary. Bilateral complete defects of the jaws in children are changes in the skeleton of the face, one of the jaws is a violation of macro– or micrognatic size; the middle of the face, extreme sagittal development of the maxillary system and wrinkling of the lower third of the face; an increase in the maxillary system size and bending of the base; anterior location; narrowing of the gonial angle; tooth–is reflected at the height of the alveoli and leads to to reduce the height of the face, stopping the development of the lower jaw; temporal mandible and mandibular retroposis; the size of the lower symphysis; characterized by a stop in the development of the lower jaws.

For the first time - Bjork A., who conducted fundamental research on the development of the dental system. according to experts, the orientation of the mandible, namely in the frontal rotation, or in the mandible, in the premolar region, the centers of rotation are of fundamental importance in the formation of bilateral complete defects of the jaws in children. At the same time, the author believes that if the center of rotation of the lower jaw is in the area of its head, then with the development of bilateral complete defects of the jaws in children, there is a decrease in the height of the front of the face, and if the center of rotation is in the premolar region, and not only a decrease

Due to the high prevalence of caries and its complications among children, the authors in our country and abroad have devoted their research to the importance of morphological changes in the maxillary-alveolar region, which are associated with premature loss of temporary and permanent teeth, often lateral, and loss of dentition. According to these authors, in the development of pathological bite in children, a violation of the sequence of rupture of peg teeth and premolars after early loss of baby teeth is essential. The lack of space occurs when the peg teeth and premolars crack simultaneously or asymmetrically, as a result of which the peg teeth are displaced mesially, accumulate in the frontal region, and occlusal contacts are disrupted.

Among the reasons for the development of bilateral deformities of the jaws in children, it was found that bad habits, concomitant pathology of the pores of the lower lip and tongue, chewing are associated with impaired muscle function. When the tongue is located in the lateral area between the bites, there is a complete failure of the teeth, which leads to a deepening of the bite. A short tubercle of the tongue often stops the growth of PJ in the anterior part, which also leads to a decrease in the bite [3].

The following factors influencing the development of pathological bite of the jaws in children are identified: the shape of the Spee bite line; the ratio of the mesiodistal width of the teeth; the ratio of the shape of the crowns of the upper and lower jaws; axial deviation of the anterior groups of teeth; angular size between the incisors [8].

The formation of defects in the dentition of the jaws in children was reflected in their studies by incomplete development of the lower jaw [11.13.15.16].

Indicates the connection of bilateral complete defects of the jaws in children with incomplete development of the lateral parts of the jaws, the etiological factor of which is most likely hypertonus of the masticatory muscles.

It also says that hypertrophy of the masticatory muscles and infra-occlusion of the lateral teeth affect the formation of bilateral complete jaw defects in children.

He believes that excessive incisor blockage occurs only as a result of maxillary and incisor teeth and infra-occlusion of the lower molars [10.12].

Purpose of the study: The examination of pathological occlusion as well as dental – jaweformations in early-aged children consists in the development of methods to prevent pathology that can develop.

2. Materials And Methods

Object of study: In the orthodontics department of the children's dental Polyclinic of the Bukhara region, 117 sick children aged 4– 17 years were taken, who were treated with mesial occlusion in 2020-2022.

Patient children with pathological occlusion diagnosis were examined from objective, subjective and dental examination methods (tonn, Dolgopolova, Snagina, Gerlach, Tanaka - Johnson methods) along with anthropometric methods. In our scientific research, the patient was studied by dividing children into 3 groups.

During the prikus period of milk teeth I, 21 patients aged 4.5 to 6 years were examined in children using the Dolgopolova method.

During the II Guruh exchange prikus, 49 patients between the ages of 7 and 13 were examined in the tonn, Snagina, Tanaka - Johnson methods in children.

Group III permanent teeth were examined during the prikus period in 47 patients aged 13 to 17 years of age in the methods of tonn, pon – Linder – Hart, Gerlach, Snagina.

3. Results and Discussion

In the examined patient children, a traditional method of treatment and complex examination methods were carried out. Basic and additional examination methods were used for the sick children under examination. In the case of an obective examination, attention is paid to the location of the head and facial area of the child, the morphological structure of the upper and lower jaw, the inner part of the mouth, the location of the teeth in the tooth rows. In the subjective examination, however, a survey was carried out asking the parents of their children (transitional criteria of the condition during pregnancy, types of childbirth, types of nutrition of the child). From the methods of further examination, an examination was carried out through the orthodontic methods presented in the plan.

A patient with mesial occlusion diagnosis was found to have higher incidence rates in girls compared to boys when children were examined through orthodontic examination methods.

During the period of biting of baby teeth in children, 21 patients aged 4.5 to 6 years were examined using the Dolgopolova method. The Dolgopolov method. This method is one of the most effective methods of orthodontic examination and is a way to determine the position of the bite, as well as the size of the dentition. According to the method of Dolgopolova, the transverse dimensions of the dentition were determined during the period of temporary bite of the children's dental system. The anthropometric points of the scapular and fleecy teeth are the points of intersection of the palatine tubercles, and the first and second molars have transverse and longitudinal grooves on the surfaces of chewing gum.

Examination of baby teeth of the first gurukh in the bite period there is a pathological change in the jaws, anthropometric points for measuring the sagittal dimensions of the jaws in sick children aged 4.5 to 6 years, mesial angles of the central cranial teeth and indicators of the intersection points of longitudinal and transverse cracks of the jaws. the second molars were determined by the Dolgopolova method.

The dimensions of the measurement points of the lateral cranial teeth, carapace teeth, first and second temporal molars were determined.

The initial width of the dental arches between these points was measured.

When determining the sagittal dimensions of the dental arch, the results of measuring the distance between the mesial angles of the central teeth of the skull and the measurement points on the second molars using the circumference of the rack were analyzed.

The analysis of the obtained measurements was comparative based on the data given in the table.

Based on the average transverse and sagittal dimensions of the dental arch in children aged 4.5-6 years, according to the Dolgopolova method, the results were evaluated by comparing the distances between the teeth with normal physiological parameters.

In 21 patients aged 4.5 to 6 years during the period of the bite of the milk teeth of group I, weak physiological diastema and tremor were detected in children, of which 12 patients according to the Dolgopolova method. Pathological occlusions were observed in children of 9 patients during examination due to macro- and microdentia of the abnormal condition of the size of the teeth.

During the second bite of the Guru exchange, 49 patients aged 7 to 13 years were examined using the methods of Ton, Snagina, Tanaka - Johnson in children. In the diagnosis of pathological occlusions with an exchange bite, the upper cranial teeth were determined by the Ton index of the proportionality of the mediolateral dimensions of the lower cranial teeth to the sum of the mesiodistal dimensions.

During the period of the exchange bite, the upper cranial teeth have a mesiodistal size, and the lower cranial teeth are equal to the sum of the mediolateral dimensions of R. The comparative sum of the sizes of the teeth of the upper and lower jaw, based on the correlation proportionality of tone, is presented in Table 3. In addition, SI is included as an expression of the size of the teeth of the upper jaw and as an indicator in the tonn index, based on the sum of the morphological structure of the teeth of the lower jaw SI. The analytical results of the tonn index in children of 49 patients aged 7 to 13 years during the II Guru exchange rate are presented.

In 49 patients aged 7 to 13 years during the second Guruch exchange bite, in which the examination was conducted, according to the results of the study, there was a violation of the morphological structure of the upper jaw in subsequent teeth located in the dentition, as a result of a high level of macrodontia in the first and second dentition. The second cranial teeth were examined during

the analysis of the examination of 49 child patients aged 7 to 13 years in Snagin during the II Guru exchange course.

Snagina's method: N.G.Snagina (1965) determines that there is a correlation between the sum of the mesiodistal dimensions (width) of 12 permanent teeth and the following values:

- the width of the dental arch between the premolars and molars (at the points of pon);

- width of the apical base (in points Xaus);

- the length of the apical base (in points Xaus).

Normally, the width of the dental arch between the first premolars was 39.2% of the sum of the mesiodistal width of 12 teeth, while the width between the first molars was 50.4%. On the lower jaw, these indicators are 44.3 and 56.2%.

Normally, the width of the base of the upper jaw is on average 44% of the sum of the mesiodistal dimensions of 12 permanent teeth, the lower jaw is 43%, and the length is 39 and 40%, respectively.

According to Snagina, with a dense arrangement of teeth, there will be an imbalance between the sum of the mesiodistal width of 12 teeth and the indicators of the apical base. Checking these imbalances, divided by the first and second levels, are indicators of the method.

The proportions determined by Snagina

Level 1 – the width of the apical base of the upper jaw is 42-39% of the sum of the mesiodistal width of 12 teeth (minimum 44%), the length is 37-35% (norm 39%), the lower jaw is 41-38% (norm 43%) and 38-36% (norm 40%), respectively.

In this case, under the influence of the orthodontic apparatus, one can hope for the expansion and elongation of the dentition and the growth of the apical base.

Level 2 – the width of the base of the upper jaw is 39-32% of the sum of the widths of 12 teeth, the length is 37-26%, in the lower jaw - 38-34% and 36-31%, respectively. In this situation, the removal of individual teeth will be shown in order to reduce the size of the dentition.

In addition, limiting the lengthening of the anterior dentition, when the jaws are compressed to the second degree, will further aggravate the disproportion between the size of the dental arch and the width of the apical base. As a result, relapses occur after orthodontic treatment.

In group II of the study, in a patient examining children using the Snagina method, the upper and lower jaws represent the sum of the mesiodistal sizes of 12 teeth.

The algorithm for measuring the upper jaw model using the Snagina method:

When determining the sum of the latitudes of 12 permanent teeth: shovel-shaped teeth, pectoral teeth, premolars and first molars.

For this purpose, the width of each tooth in the mesyldystal direction was measured in an ordinal order.

Estimates of the width of the dental arch, the width of the apical base and the length according to the Snagina method were obtained for 12 permanent teeth, taking into account the assembly along the mesiodistal width.

In terms of Pon, the width of the dental arch between the first premolars was measured.

The width of the dental arch between the first molars was measured.

The narrowest part of the apical base was calculated using the House method.

The total length of the apical base was compared using the House method. Comparative comparison of the width and length of the dental arch, apical base.

Apical is the percentage ratio of the width and length of the base to the width of 12 teeth.

The degree of insufficiency of the width and length of the apical base was determined.

The obtained results were analyzed and compared with normal and pathological conditions by indicators.

According to the results of the study, data on the measurement of the width of the base of the upper and lower jaw by the Snagina method and its analyses were compared with the normal physiological state of pathological changes.

According to the Snagina method, it was found that the sum of the width of the base of the upper and lower jaws varies from 29.1 to 38.5 from the sum of 29.4 to 39.6 in the 4/4 region and from 45.4 to 58.5 normally in the 6/6 to 45.1-58.3 regions in pathological conditions, the dentition shifted the width [12.14.16].

Permanent teeth of group III were examined in the bite period in 47 patients aged 13 to 17 years according to the methods of ton, Ponlinder – Hart, Gerlach, Snagina.

During the bite of permanent teeth, the upper teeth of the skull have a mesiodistal size, and the lower teeth of the skull have a mediolateral size of sum R. Data on the comparative sum of the sizes of the teeth of the upper and lower jaw, based on the correlation proportionality of tone, are presented.

Also in the bite of permanent teeth SI was calculated as an expression of the size of the teeth of the upper jaw, as well as as the sum of their indicators in the tonn index, based on the sum of the morphological structure of the teeth of the lower jaw SI.

The results of the analysis of the tonn index in children of 47 patients aged 13 to 17 years during the 3rd permanent bite guru are considered effective methods for detecting pathological changes in permanent bite, i.e. defects of dentition, by identifying foci of the teeth of the upper and lower jaw. The advantage of these methods is that the patient does not have a negative impact on the mental state of children during the examination. At the same time, this makes it possible to correctly and effectively identify etiological factors affecting the non-profile in the bite of permanent teeth.

47 patients aged 13 to 17 years during the bite of permanent teeth of the gallbladder were examined by the Ton index in children as a result of a high level of macrodontia in the first and second cranial teeth of the upper jaw as a result of a violation of the morphological structure in subsequent teeth is in

the algorithm of measuring the model of the upper jaw by the Ponder-Linder-Hart method:

Four the spar measures the total width of the teeth at their widest point, which is 0.1 mm along the edge of the incision. it is measured with high accuracy.

The Pon formula was calculated by adding the mesiodistal width of the cranial teeth, the maharajiga index – 85 (when determining the width between the premolars) or 65 (when determining the width between the molars) and measuring the width of the dental arch between the premolars and molars.

For the first premolars, a comparison was made to find the measurement points and measure the initial width of the dental arch between them using a circular saw.

For the first molars, this was determined by finding measurement points and using a circular saw to determine the width of the dental arch between them.

A comparative comparison of the initial and desired width of the dental arch between the premolars and molars was carried out.

Tooth extraction was also taken into account in the following situations.

– to determine whether the central teeth of the curler are more than 10 mm, when the teeth of the curler are located tightly, the lateral ones are more than 7.5 mm, the total width of the teeth of the curler is 35 mm;

- the total width of twisted teeth with a narrow type of face is calculated based on cases when they are more than 33 mm;

Macrodentation of the teeth of the spleen of the upper jaw or due to the narrowness of the jaws is an identifiable method of dense arrangement of the teeth of the spleen. This method is based on the division of each dentition into anterior and two lateral segments, determined by measuring the distances between the tip of the tooth, the first and second premolars and the first permanent molar. The size of the anterior upper segment will be equal to the sum of the widths of the four cranial teeth, while the size of the lower anterior segment – the lower cranial teeth will be equal to the product of the sum of the latitudes by the tone index (1.35). With frequent biting, this indicator is equal to the product of the Gerlach method by 1.22. In the Gerlach method, the ratio of segments between the rod tooth, the first and second premolars and the first permanent molar in a permanent bite was determined as the following formula:

$$\begin{array}{ccccc} & & \text{Lor} \geq \text{SI} \leq \text{Lol} & & \\ \| & & \| & & \| \\ & \text{Lur} \geq \text{SII} \leq \text{Lul}, & & & \end{array}$$

here SI is the sum of the width of the upper cranial dental sheaths; SII is the size of the lower anterior segment; L is the length of the lateral segment. Gerlach used German initials to designate each lateral segment: L (Lange) — length; o (Oberkiefer) — upper jaw; u (Unterkiefer) — lower jaw; R (rechts) — right; l (links) — normative assembly indicators measuring the left side. In the Gerlax method, a permanent bite gives the average size of the segments between the molar, the first and second premolars and the first permanent molar.

In moderate amounts, the front segment will be 10x3% smaller than the side segment. If it is equal to or greater than the lateral segment, then the front teeth will be located tightly. The difference in the sizes of individual segments was estimated taking into account the entire segmental formula. For example, an increase in the lower anterior segment occurred due to a decrease in the lateral segment. The sum of the upper segments was equal to the sum of the lower segments, which, according to observations, was a correct ripsification between opposite teeth.

A case of deep frontal occlusion was found with a neutral displacement of the upper segments of the tooth, when the size of the lower segments is larger than the size of the lower segments. The predominance of the lower segments leads to the appearance of reverse frontal obstruction.

The algorithm for measuring models using the Gerlax method:

1. The size of the upper anterior segment was studied in terms of the sum of the width of the four cranial teeth.

2. The size of the lower anterior segment was determined by the sum of the width of the four lower cranial teeth.

3. Determining the dimensions of the lateral segments, the distance from the mesial surface of the incisor to the distal surface of the first molars was measured.

According to the Snagina method, it was found that the sum of the width of the base of the upper and lower jaws varies from 29.1 to 38.5 from the sum of 29.4 to 39.6 in the 4/4 region and from 45.4 to 58.5 normally in the 6/6 to 45.1-58.3 regions in pathological conditions, the dentition shifted the width and

The algorithm for measuring the upper jaw model using the Snagina method:

When determining the sum of the latitudes of 12 permanent teeth: shovel-shaped teeth, pectoral teeth, premolars and first molars.

For this purpose, the width of each tooth in the mesyldystal direction was measured in an ordinal order.

Estimates of the width of the dental arch, the width of the apical base and the length according to the Snagina method were obtained for 12 permanent teeth, taking into account the assembly along the mesiodistal width.

In terms of Pon, the width of the dental arch between the first premolars was measured.

The width of the dental arch between the first molars was measured.

The narrowest part of the apical base was calculated using the House method.

The total length of the apical base was compared using the House method.

Comparative comparison of the width and length of the dental arch, apical base.

Apical is the percentage ratio of the width and length of the base to the width of 12 teeth.

The degree of insufficiency of the width and length of the apical base was determined.

The obtained results were analyzed and compared with normal and pathological conditions by indicators.

4. Conclusion

1. As a result of taking measures for the early detection of anomalies and deformities of the gums, pathological bites that have been treated for years are corrected within 6-8 months.

2. After treatment, the dispensary is monitored and re-monitored every 4 months.

3. Due to the restoration of the myofunctional balance of the muscles, relapses are prevented, the normal functional development of the tooth and dentition is ensured. When using a complex orthodontic device, a reduction in the recovery time of patients from 8-12 to 6-8 months was achieved. After the use of a complex orthodontic apparatus in sick children, a complete restoration of the state of chewing efficiency was achieved.

4. Patients with dental anomalies are under the supervision of an orthodontist. Conducting diagnostic tests for early diagnosis of patients with dental anomalies and deformities. Improving the quality of life by restoring chewing ability in patients with dental anomalies and deformities.

References:

1. Fozilov U.A. Optimization of prevention of caries development during orthodontic treatment.// AJMIR Asian Journal of Multidimensional Research. – 2020. – Vol. 9. - Issue 1. – P. 48-50 (Impact: Factor: 6.882)
2. Фозилов У.А. Ортодонтик мосламаларни кўллашда юзага келадиган бошланғич оқдоғ кариесни замонавий даволаш усуллари.// Tibbiyotda yangi kun. –2020. - №2 (30). 250-251. - б. (14.00.00. №22)
3. Фозилов У.А. Беморларни ортодонтик даволашда асоратларнинг олдини олишга қаратилган профилактик чора тадбирлар мажмуини қатъий технология ёрдамида ишлаб чикиш ва амалга ошириш.// Tibbiyotda yangi kun. – Бухоро, 2020. - №2(30). 580-583. - б. (14.00.00. №22)
4. Fozilov U.A. White treatment of white spot caries in the application ofmodern medicine. // academicia an international multi disciplinary research journal. – 2020. - vol. 10, issue 5. – P. 1811-1813 (impact factor: 7.13)

5. Fozilov U.A. Diagnostic of caries by using the machine Qrayview C // ICDSIIL-20 International Online Conference In Association with International engineering journal for Research Development. – 2020. - vol. 10, issue 5. – P. 259-262 (Impact Factor - 6.549)
6. Fozilov U.A. **Development and implementation of a set of preventivemeasuresaimed at preventing the development ofcomplications in the orthodontic treatmentofpatients using fixed technology** //American Journal of Medicine and Medical Sciences. – 2020. - №10 (7). – P.469-472 (14.00.00. №2)
7. Fozilov U.A., Rizaeva S.M. Development of modern preventive programs in orthodontic treatment of dental caries in children on the basis of hygienic requirements // (IEJRD) International Engineering Journal for Research Debelopment. – 2020. ISSN 7149-0771 P. 1-4. (impact factor: 6.549)
8. Фозилов У.А. Ризаева С.М. Ортодонтик даволашда кариеснинг ривожланишини Бухоро вилояти худудлари негизида ўрганиш // Stomatologiya. – 2020. - №3 (80). 36-38. - б. (14.00.00. №12)
9. Fozilov U.A., Rizaeva S.M. Optimization of diagnosis and prevention of development of caries for orthodonic treatment European Journal of Molecular & Clinical Medicine 2020. Volume 7. Issue 3. - P. 3714-3719.
10. Фозилов У.А. О проблеме скученности фронтальных зубов // научно-методический журнал Academy. – 2017. - №7(22). – С. 94-96.
11. Fozilov U.A. Optimization of prevention of caries development during orthodontic treatment // Научно-практическая конференция «Актуальные вызовы современной науки». – 2020. - Выпуск 4(48). - Часть 1. – С. 48
12. Fozilov U.A. Diagnostic and prevention of the development of caries and its complications in children at orthodontic treatment // Journal NX A Multidisciplinary Peer Reviewed Journal. – 2020. - Volume 6, Issue 7. – P. 276-280
13. Fozilov U.A. Evaluation of the efficiency of Demineralizing Agents in Treatment with Removable and Fixed Orthodontic Equipment in Children.// International Journal on integrated Education. – 2020. - Volume 3, Issue VII. – P. 141-145
14. Fozilov U.A. Orthodontic treatment optimization of caries prevention // Сборник научных трудов научно-практической конференции с международным участием «Актуальный вызовы современной науки». – 2020. - №4(48). – Часта 1. - С. 50.
15. Фозилов У.А. Ризаева С.М. Болаларни ортодонтик даволашда кариес ва унинг асоратлари ривожланишини олдини олиш: методические рекомендации. – Ташкент, 2020. – С. 20.
16. Фозилов У.А., Ризаева С.М. Оценка деминерализации эмали в динамике ортодонтического лечения при применении несъёмной ортодонтической техники: методические рекомендации. – Ташкент, 2020. – С. 20.