

Periodontal Condition of the Patients with Decreased Lower Facial Height

*Sergei Arutjunov, Sofia Kraveishvili, Anatoli Arutjunov,
Dmitri Krogovikh, George Babunashvili*

Department of General Stomatology, Moscow State Medical-Stomatological University,
Russia

Abstract

Results of the periodontal tissue condition studies are given in this work, when height of the lower face is reduced. A total of 186 patients aged 40 to 65 with decreased lower facial height were investigated and treated orthopedically. From them, in 122 patients were found pathological changes of marginal periodont. The general principles of the prosthodontic treatment are the following: to restore the height of the bite, normalization of the chewing muscles function and mandibular condition, to achieve equal contact between upper and lower teeth along dental arches. Distant results of treatment from 1 to 4 years turned to be good in 177 (95,1%) patients, who had periodontal pathological process before treatment was stabilized (by clinical and x-ray exams). Signs of decreased lower facial height disappeared.

Keywords: *periodontal condition decreased lower facial height*

Introduction

A total of 185 patients aged 40 to 65 with decreased lower facial height were treated. 65% of them developed pathological changes in the marginal periodontal tissues (inflammation, periodontal and osseous pouches, resorption of bone tissue of the maxillary alveolar process). Patients with the inflammation of the marginal periodontal tissue were treated by therapeutic, surgical, and prosthodontic methods. Good results were attained in 95.1% of patients.

Reduction of the height of the lower part of face (shortening of the inter-alveolar distance) can be caused by several reasons such as; obliteration of the solid dental tissues (generalized form), large effects of dental raw, malocclusions (deep bite), chewing muscle disorders (bruxism), reduced resistance of the periodontal tissues and also interaction of the above factors [5].

Insufficiently studied functional and morphological changes of dent-alveolar system makes difficult to create rational methods of prosthodontic treatment [1-6].

Results of the periodontal tissue condition studies are given in this work, when height of the lower face is reduced.

Materials and Methods

A total of 186 patients aged 40 to 65 with decreased lower facial height were investigated and treated orthopedically. Coordination of their dental arches was different. Normal occlusion was found in 106 patients, end- on incisor relationship in 20 patients, class 2 malocclusion in 41 patients, deep bite in 19 patients. All patients had defects of different sizes and topography. 119 people had pathological wear of solid dental tissues, 18 people had bruxism. Patient exam was done by following scheme: patient questioning, clinical examination of the patient, inspection of face and oral cavity, evaluation of upper, middle and lower facial height changes. Studying of the dental casts intra and extra oral x-rays, tomography of the temporomandibular joint were used: Pi, osseous index (Fuchs), Rumford index and root baring index (Goldberg).

Before making prosthodontic treatment patients with periodontal disease, malocclusions, deformations of

dental arches and pathologic wear of teeth went through suitable therapeutic and prosthodontic preparation course of alveolar-alveolar system.

Results

From total 186 patients with decreased lower facial height in 122 (65,5%) pathological changes of marginal periodont were found. Changes were expressed in inflammation of gum mucous membrane, creation of the periodontal and osseous pockets. In many patients with inflammatial changes of regional periodont, baring of the dental throats, pathological mobility of the overloaded teeth or their displacement to the vestibular, oral, distal sides, their rotation, intrusion of the overloaded teeth into alveolar process were found, that was accompanied by deformation of dental raw. Radiologic exam showed expansion of periodontal crack, resorbtion of inter-alveolar crest on different heights, creation of deep osseous pockets, unevenness of destructive zone lines, at destructive zone peripheries plenty of regional osteoporosites were found.

The heaviest picture of periodontal damage was seen in patients with bruxism, malocclusions, defects and deformation of dental arches, complicated by decreased lower facial height.

However, not all patients with decreased lower facial height had damaged regional periodontal tissues. 65 people (34,5%) had neither clinical, nor radiographic signs of their change.

It has been proved, that patients with decreased lower facial height, pathological changes of marginal periodont are developed only in case of functional traumatic overloading of the teeth. The latter happens only in case of unusual of strong occlusal force and reduced resistance of the periodontal tissues. Overloading is related to masticator muscle disorders (bruxism, parafunction and other).

Electromyography investigations show that increased bioelectric activity was found in 70 (37,6%) patients, in the remaining 116 people bioelectrical activity of masticator and temporal muscles was not increased. In patients with damaged periodontal tissues, bioelectric activity was reduced.

General diseases of coronary system, central neural system, gastro-enteric system, disorders of endocrinal regulation and ECT cause reduction of the periodontal tissue resistance. Even in patients with bruxism, when periodont is highly resistant we cannot always see functional periodontal overloading.

From 18 patients with bruxism, 8 had pathological obliteration of the solid dental tissues and short inter-alveolar distance, but clinical and x-raying signs of periodont, in these patients were not found.

In periodontal tissue damage pathogenesis, huge role belongs to periodontal tissue blood circulation disorders. This is proved by the results of reoparodontography. In the area of overloaded teeth with periodontal tissue damage, index is equal of $0,08 \pm 0,004$ oN; vessel tonus indicator is $-22 \pm 0,61\%$, index of peripheral resistance of the vessels $126 \pm 6,4\%$, elasticity index $72 \pm 2,4\%$.

While planning treatment for patients with decreased lower face height regional periodontal tissue conditions were taken into consideration. When they're plenty of clinical and regional signs of periodontitis and functional overloading of the teeth, complex treatment was held - therapeutic, surgical (according indications) and orthopedial [5,7].

The latter included selective grinding of teeth, normalization of mastic muscles function (imitative reflexes) and mandibular position rational splinting and prosthodontic treatment.

In 64 patients without signs of periodontitis and functional periodontal overloading were prosthodontic treated. After adaptive - compensatory preparing of the dental - maxillary system dental limbing was held. The general principles of the prosthodontic treatment are the following: to restore the height of the bite, normalization of the chewing muscles function and mandibular condition, to active equal contact between upper and lower teeth along dental arches.

When choosing the prosthetic constructions, it is most important how large the dental defect is, also quantity of general teeth, periodontal tissue condition. When only 1-2 teeth are defective (class 3 by Kennedy classification) and periodontitis is not complicated, it is necessary to make bridge prostheses.

Whole piece prostheses are preferable, which are made of less wearable materials. In patients with large defects, (class 1,2,3) we used bar prostheses with occlusive pads. High functional and cosmetic effects were achieved when facing bar prostheses in molar and premolar areas by porcelain (metal-ceramics) and in front teeth-by highly durable plastic.

Distant of treatment from 1 to 4 years tured to be good in 177 (95,1%) patients. The patients who had periodontal pathological process before treatment was stabilized (by clinical and x-ray exams). Signs of decreased lower facial height disappeared.

Complications developed in 9 (4,9%) patients, 5 of them had partial relapse of decreased lower facial height with damaged support teeth of dental bridge. Mucosal membrane of the gum inflamed, gingival pocets appeared. Dental bridges were removed and separate and bar prostheses took over. Further, during 2 years, there was no change of occlusion; the inflamed process

of the gum was not observed. In 4 patients, metallic plastic was chopped off. After their repairs, no complications had place during 3 years.

While analyzing the results of rheoparodontography and electric myography in 86 patients in different dates of observation, indicators of regional periodontal blood circulation and chewing muscles function changed to the side of normalization.

References

1. V.Alekseev. A.Brozgol. Pathological dental obliteration.M.1970
2. M.Bushan.Pathological dental obliteration and its complicaion.Kishinjov 1979.
3. E.Gavrilov.Deformaition of dental raws.M.1984
4. Kh. Kalamkarov. Orthopedic treatment of pathological obliteration of solid dental tissues. M.1984.
5. Kh.Kalamkarov. Stomatology. 1996,1 ; 53-60.
6. S.Aquilino,R.Jorgan, K. Turner, J. Prosthet Dent 1986; 45; 4;430-433.
7. F.Flemming. Parodontology. E Kompedium George Thime Vergal. Stuttgard-New York 1993.

Состояние тканей пародонта при снижении высоты нижнего отдела лица

*Сергей Арутюнов, Софья Кравеишвили, Анатолий Арутюнов,
Дмитрий Круговых, Георгий Бабунашвили*

Кафедра общей стоматологии с курсом подготовки зубных техников Московского медико-стоматологического университета, Россия

РЕЗЮМЕ

Приведены результаты исследования состояния тканей пародонта при снижении высоты нижнего отдела лица. Проведено обследование и ортопедическое лечение 186 пациентов (98 женщин и 88 мужчин) в возрасте от 40 до 65 лет с укорочением межальвеолярного расстояния. Из 186 пациентов со снижением высоты нижнего отдела лица патологические изменения краевого пародонта выявлены у 122 (65,5%). Они выражались в воспалительных изменениях слизистой оболочки десны, появлении пародонтальных и костных карманов. Основными принципами ортопедического лечения являются: восстановление высоты прикуса, нормализация функции жевательных мышц и положение нижней челюсти, достижение на зубных протезах множественного равномерного контакта на протяжении всего зубного ряда. Отдаленные результаты лечения в сроки от 1 года до 4 лет оказались хорошими у 177 (95,1%) пациентов. Клинически и рентгенологически у лиц с наличием до лечения патологического процесса в пародонте отмечена стабилизация. Признаки уменьшения высоты нижнего отдела лица исчезли.

Ключевые слова: *состояние тканей пародонта, снижение высоты нижнего отдела лица*