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Increasing the Effectiveness of Treating Patients with Combined Injuries of Facial Bones with Assessment of the Hygienic Condition of the Oral Cavity.

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ABSTRACT:

Combined injury is one of the complex problems of modern medicine. Over the past decades, the structure of injury has changed radically; simultaneous damage to several anatomical structures is noted (Boymuradov Sh.A., 2014, Boymuradov Sh.A., Ibragimov D.D., 2020).

In the modern world, the increase in the number and speed of vehicles, the technical equipment of industrial and agricultural enterprises, everyday life, extreme sports, as well as the intense rhythm of life, stress factors associated with urbanization have led to an increase in various types of peacetime injuries.

Fractures of the bones of the maxillofacial region account for about 3% of injuries to the bones of the human skeleton. About 45% of patients in the departments of maxillofacial surgery are victims of trauma to the maxillofacial area. According to statistical studies, victims in 14-20% of cases have combined traumatic brain injury.

Damage to the tissues of the face and neck is classified as a complex type of injury. The presence of main blood vessels, nerve trunks and branches and, accordingly, an abundance of reflexogenic zones, the proximity of vital organs

predispose to the development of more complications. When providing first aid and treating wounded people with injuries to the face and jaws, the characteristics of injuries to this anatomical region should be taken into account. In the complex of treatment and preventive measures aimed at solving this problem, an important place is occupied by the provision of qualified specialized medical care to victims.

Prevention of complications from periodontal tissues in the treatment of combined injuries of the maxillofacial area and reducing the percentage of people who have signs of damage to periodontal tissues is an urgent problem in the practice of maxillofacial surgery and the practice of dentistry in general.

Patients in serious condition are hospitalized in the intensive care unit for the provision of resuscitation care, after the improvement of their general condition, i.e. restoration of adequate breathing, bimaxillary splints are applied. Patients with such injuries most often cannot clean the oral cavity on their own. Food debris, blood clots, and particles of dead tissue are retained in the oral cavity in the interdental spaces, especially when dental wire splints are applied, and create favorable conditions for the proliferation of microorganisms and the development of inflammation of periodontal tissue.

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Thus, individual oral hygiene in patients with combined injuries of the facial bones not only helps remove food debris and soft dental plaque from the splinting structure, ligature wire, teeth, gums, and rubber rods, but also serves as a preventive measure for the development of microflora and provides an opportunity for faster and more favorable fusion of bone fragments of the jaws.

The purpose of our study was to evaluate the hygienic condition of the oral cavity in patients with combined injuries of the facial bones in order to prevent periodontal tissue diseases.

Material and research methods.

To achieve our objectives, we examined 123 patients with combined injuries of the facial bones (CTLI), who received treatment in the department of maxillofacial surgery of the Samarkand City Medical Association. Among the examined men, there were 96 (78.4%) women and 27 (21.6%); the average age of the patients was 41 years. To solve the problems and achieve the goal of the study, clinical, radiation, immunological and statistical methods were used in the work. The average age was 41.4±1.2 years.

We studied the state of dental health of patients, its dependence on various factors of a medical, biological and social nature, including organizational forms of providing dental care and medical examination.

Patients underwent clinical (n=123; 100%), X-ray (n=28; 14.5%), computed tomography (n=25; 13%), multislice computed tomography (MSCT), (n=139; 72, 5%) and immunological examinations. In addition, the condition of the temporomandibular joints (TMJ), oral mucosa (OM), hard dental tissues (caries, hypoplasia, fluorosis, pathological abrasion and wedge-shaped defects), and periodontal tissues were assessed. The identified disorders were classified in accordance with ICD-10. Based on the results of the examination, the need for treatment of dental diseases was determined. If necessary, orthopantomography was performed. The prevalence of all identified diseases was expressed as the percentage of persons suffering from these diseases.

The data obtained were recorded in the developed "Card for assessing dental status."

To assess the condition of periodontal tissues, the gingival bleeding index (Muchlemann - Cowell), the GI index, and the CPI index reflecting the need for l were used. Activities carried out in groups:

Group I – patients with traditional treatment. In this group of patients, after examination by several specialists and the establishment of a clinical diagnosis and subsequent assessment of the conditions of periodontal tissues, a complex of traditional treatments was carried out.

In II – the main group. In this group of patients, after examination by several specialists and the establishment of a clinical diagnosis and subsequent assessment of the conditions of periodontal tissues, a complex of treatment and preventive measures was carried out with the local application of the antiseptic drug Eludril.

To solve these problems, the condition of periodontal tissues was assessed based on anamnesis, objective examination, assessment of the level of oral hygiene and indicators obtained using x-ray and functional research methods.

The clinical examination was carried out according to the generally accepted method, which included clarification of complaints, collection of anamnesis of the disease, and examination.

Diagnosis of periodontal diseases was carried out in accordance with the classification approved at the XVI Plenum of the Board of the All-Russian National Scientific Association of Dentists (1983; additions 2003).

During the clinical examination, attention was paid to oral hygiene, the condition of periodontal tissues was assessed using the hygienic index (HI) (Silness, Loe, 1962), the gum bleeding index (IG) (Muhlemann, 1971;

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Cowell, 1975), the PMA index (modified by Parma , 1960).

All groups were examined for the main parameters of dental status (prevalence and intensity of dental caries and periodontal diseases) again after 2 years. The results of the examination are recorded in "Cards for assessing dental status."

On the day of admission for emergency reasons, all patients were examined according to a developed scheme: when collecting an anamnesis, the etiology of the injury, the patient's condition in the immediate hours after receiving it, and the amount of care provided before hospitalization were studied.

In all patients with combined injuries of the facial bones (CTF), the life history and complaints were studied, and a traditional local and general examination was performed. Patients with combined injuries of the jaw bones more often complained of pain in the area of swelling, weakness, malaise, sleep disturbances and appetite. Of the general and local symptoms, headache was noted in 94 (85.4%), general weakness in 123 (100%), irritability in 79 (81.6%).

In patients of the main group (n=62) and patients in the group with traditional treatment (n=61), the level of oral hygiene was assessed using the PMA hygiene index.

The PMA index is based on the ability of iodine-containing solutions to color carbohydrate polymers released from cells disintegrating at the site of inflammation, as well as those produced by microorganisms, in a red-brown color. Thus, the staining zone corresponds to the inflammation zone. To determine the degree of inflammation, the gums were stained with Schiller-Pisarev solution and the condition of the gingival papillae, marginal and alveolar gums was assessed. The degree of inflammation is determined visually for each tooth: 0 - absence of inflammation (0 points);

P - inflammation of the gingival papilla (1 point);

M - inflammation of the marginal edge of the gums (2 points);

A - inflammation of the alveolar part of the gum (3 points).

The number of all teeth after 18 years was taken as 30. In case of loss or absence of teeth, we proceeded from their actual presence.

PMA= (sum of indicators*100%)/(3*number of all teeth)

The index value with a limited prevalence of the pathological process reaches 25%, and with a pronounced prevalence and intensity of the pathological process, the indicators approach 50%. With further spread of the pathological process and an increase in its severity, the values are 51% or more.

The PMA index was calculated using the formula:

RMA = Sum of indicators in points x 100 / 3 x number of teeth in the subject

Patients were examined 3 times over the course of treatment: before treatment, on the 7th day of immobilization, and when removing immobilizing structures.

All patients of groups 1 and 2 were recommended a generally accepted oral hygiene regimen using furacilin solution.

In addition, in patients of the main group (n=97), before placing an immobilizing agent (Tigerstedt splint), a complex of measures was carried out to sanitation the oral cavity; after surgical treatment and splinting of the dentition, patients were prescribed to rinse their mouth with an antiseptic solution of Eludril strictly according to the instructions.

Upon admission, the study of oral hygiene in both groups of patients did not have statistically significant differences - they ranged from 25.7±0.09 to 27.2±0.13 points ($p>0.05$).

When examined on the 7th day of immobilization, patients with traditional treatment showed further deterioration and amounted to 29.7±1.06 points.

In patients in the main group using Eludril solution, this indicator was much lower than 12.7±1.03 points.

When examined at an appointment to remove the fixing structures (or after 22 days), a further deterioration in the level of oral hygiene in patients with traditional treatment was found in comparison with the group of

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patients using the Eludril solution. A comparison of the level of hygiene at the last examination showed that the poorest hygiene was in patients of group 1, whose treatment was carried out with the application of Tigerstedt dental splints - 3.9 ± 0.19 versus 2.6 ± 0.09 (the main group).

the obtained data were subjected to statistical processing on a Pentium-4 personal computer using programs developed in the EXCEL package, using a library of statistical functions, with the calculation of the arithmetic mean (M), standard deviation (σ), standard error (m), relative values (frequency, %), Student's test (t), with calculation of the probability of error (P).

Differences in mean values were considered significant at a significance level of $P<0.05$. At the same time, we followed the existing guidelines for statistical processing of the results of clinical and laboratory studies (Zaitsev V.M. et al., 2003). Treatment of periodontal diseases.

Research results.

According to the results of this study of clinical, treatment and preventive measures, 123 patients with CTOFB all required a hygienic approach to the oral cavity.

Analyzing the results of the work done, it is necessary to note the sufficient effectiveness of the carried out treatment and preventive measures. Analyzing patients with combined injuries of the bones of the facial skeleton, taking into account injuries to periodontal tissues and the oral mucosa, requires a hygienic approach from the early stages of injury and after complex operations for fractures of the bones of the facial skeleton and after immobilization allow achieving satisfactory results in the functional rehabilitation of patients, while reducing the risk infectious and inflammatory complications compared with traditional therapy.

The use of local Eludril solution by patients with combined injuries of the facial bones in the main group compared to the traditional immobilization method helps to increase the level of oral hygiene, reduce the severity of inflammation in periodontal tissues, and the most rapid restoration of periodontal tissues and oral mucosa.

Condition of the mucous membrane and soft tissues of the oral cavity

The prevalence of various types of pathology of the mucous membrane and soft tissues of the oral cavity in patients was 30.08±2.19% (37 patients) (Fig. 1). The most common were inflammatory changes in the gingival margin – in 107 (18.64±1.85%), in second place were changes in the surface of the tongue (desquamative glossitis or “geographical” tongue) – in 61 (10.63±1.45%) , damage to the red border of the lips (meteorological cheilitis) was diagnosed in 38 (30.8±1.18%) patients.

A survey of the oral mucosa revealed isolated cases of CRAS (4 people -3.25%).

To determine the degree of gum inflammation, the Muchlemann bleeding index was used, which showed the presence of bleeding in 104 (84%) subjects, and bleeding at the slightest probing of the gums, as well as when eating food, was observed in 104 (84%) patients.

The prevalence of signs of periodontal disease among patients was 99.55±0.45%, with an average intensity of damage - four segments per patient (4.10±0.08), which is 5% and 12%. The most common type is dental calculus, its prevalence was 78.65±3.07% of cases. Dental calculus was diagnosed in almost 2 sextants.

The average hygiene index among SamMI youth was 2.05±0.05.

Level of knowledge on the prevention of dental diseases in patients with CTOFB

The results of a survey on the prevention of dental diseases in patients with CTDS that they properly cared for the oral cavity (brushed their teeth 2 times a day) - 69.01±2.45% of patients. 29.01±2.12% brush their teeth once a day, and about 2% of patients did this occasionally (1.62±0.74%). Of the respondents, 45.63±2.64% brush their teeth after breakfast, before breakfast - 51.83±2.65%, but in the evening before bedtime, most patients (61.69±2.58%) and only 10.70±1.64% brush their teeth immediately after dinner.

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Patients almost did not use dental elixirs and rinses at all; only 3 people used these products (2.4±0.04%).

Answers to questions on the method of brushing teeth showed that 26.20±2.33% of respondents brush their teeth with vertical movements, 20.28±2.13% with rotational movements and 21.69±2.19% with horizontal movements. Combined types of movements with a toothbrush were used by 55.21±2.64% of patients. Due to several answers from patients with toothbrush movements, the sum of the percentages does not add up to 100%.

The toothbrush, being the main means of oral care, was replaced once every 3 months in 33.52±2.51% of people, as it wore out - in 34.37±2.52%, no more than 2 times per 19.72±2.11% of respondents changed their brush every year. A small proportion of patients (10.70±1.64%) were of the opinion that a toothbrush can serve for a whole year.

More than half of the respondents (57.75±2.62%) were informed about other additional items of interdental hygiene, but not all of them used them (50.99±2.65%). The use of chewing gum as a hygiene product is quite popular (57.46±2.62%) among patients. It should be noted that such oral care items as an electric toothbrush, interdental stimulators, brushes, and oral irrigators were not named at all.

The main source of knowledge gained on oral hygiene was the dentist; other sources of information were often television and print media.

27±2.40% of patients spoke about the need to visit the dentist 2-3 times a year or more often, but only 21.97±2.20% of patients visited the doctor for a preventive examination at least 2 times a year.

Almost half of the patients (47.04±2.65%) considered their knowledge of oral hygiene sufficient, 33.52±2.51% of respondents were unsure of them, and only 17.46±2.02% of people assessed the level of their knowledge as insufficient.

We devoted a special place in the questionnaire to questions of patients' awareness of the main risk factors for oral diseases, and the relationship between the general condition of the body and diseases of the teeth and gums. 87.89±1.7% of patients agreed with the opinion that diseases of teeth and gums affect the general condition of the body, doubted - 5.63±1.22%, disagreed - 9 people (2.54±0.83 %). Patients considered the main risk factors indicated in the questionnaire to be: poor oral hygiene (as indicated by 86.20±1.83%), smoking (76.90±2.24%).

Thus, smoking, drinking alcohol, and the obvious presence of certain flaws in the diet, sadly, are common among patients with CTOFB.

Conclusions:

1. According to the results of this study of clinical, treatment and preventive measures, 123 patients with CTOFB all required a hygienic approach to the oral cavity.

2. Analyzing patients with combined injuries of the bones of the facial skeleton, taking into account injuries to periodontal tissues and the oral mucosa, requires a hygienic approach from the early stages of injury and after complex operations for fractures of the bones of the facial skeleton and after immobilization allow achieving satisfactory results in the functional rehabilitation of patients, while the risk of infectious and inflammatory complications is reduced compared to traditional therapy.

3. The use of local Eludril solution by patients with combined injuries of the facial bones in the main group compared to the traditional immobilization method helps to increase the level of oral hygiene, reduce the severity of inflammation in periodontal tissues, and the most rapid restoration of periodontal tissues and oral mucosa.

4. There is a direct relationship between the prevalence and intensity of major dental diseases and such risk factors as poor oral hygiene, tobacco smoking, and alcohol consumption.

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