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CLASSIFICATION OF ACQUIRED LOWER JAW

DEFECTS

Kubaev Aziz Saidolimovich, Associate Professor PhD Samarkand State Medical University

Abstract

Optimization of complex prevention, diagnosis, and treatment of patients with inflammatory and oncological diseases of the maxillofacial region, congenital and acquired defects and deformities, and trauma of the maxillofacial region is based on conducting multifaceted comprehensive studies not only in various areas of dentistry but also involving a wide range of related and fundamental disciplines of medicine. This article describes the issues of surgical treatment and rehabilitation of patients with facial and jaw deformities. It should be said that the treatment and rehabilitation of patients with acquired maxillofacial defects is one of the most important medical and social problems of modern dentistry. It is an urgent task to implement adequate and complex rehabilitation measures in the specialized dental care system, because in most cases, OA leads to serious functional and aesthetic disorders that limit the patients' vital activities, make it difficult for them to socialize, and create deep socio-psychological problems. In the article, the author talks about the issues of surgical treatment and rehabilitation of patients with maxillofacial defects by practicing doctors, maxillofacial surgeons, otorhinolaryngologists, and postgraduate residents.

Keywords: lower jaw, surgical treatment of the jaw, mandibular defects.

Introduction

Relevant is the planning of treatment of patients with dentoalveolar deformities, both congenital and acquired. Orthognathic surgery is a highly effective method of correcting the shape of the facial skeleton and soft tissues, accompanied by occlusion disorders, however, it is advisable to direct efforts towards studying the possibility of predicting the results of surgical treatment of patients in combination with orthodontic treatment. At the same time, the use of computer technologies and modern methods of radiation diagnostics will allow optimizing the process and methods of cephalometric analysis for specific purposes.

Today, the problem of eliminating congenital and post-traumatic deformities has become the most relevant, due to the increased criticality of patients' attitudes toward their appearance, and the need to carry out rehabilitation as soon as possible. Currently, the goal of complex treatment of patients with developmental anomalies and congenital deformities of the maxillofacial region is not only the elimination of functional disorders of the dentoalveolar system but also the elimination of aesthetic problems. At the stage of planning the surgical stage of treatment, it is important to determine the logical motivation of the patient and identify groups of people interested in obtaining the maximum aesthetic effect. This group of patients may be scheduled for a simultaneous operation that combines orthognathic surgery and an additional technique aimed at aesthetic correction of certain cosmetic disorders.



Purpose of the study

The main purpose of the study is to improve the methods of surgical treatment of inflammatory processes, neoplasms, defects, and deformities of the maxillofacial region and substantiate the effectiveness of the system of rehabilitation measures.

Classification of dentofacial defects: Maxillary defects; Defects with lack of oroantral/oronasal/oroantral-nasal communication; Defects with oroantral/oronasal/oroantral-nasal communication; Mandibular defects; Bodies and branches with broken bone continuity; Absence of the body of the jaw; Absence of the jaw.

Introduction

Benign epithelial tumors are most common in men and women aged 17-45 years. In most cases, it is located in the angular area and branches of the lower jaw. Ameloblastoma accounts for 18% of all benign tumors and neoplastic derivatives of the jaw. Osteoblastoclastoma rarely occurs in children under the age of 12, it is most often diagnosed in people between the ages of 18 and 40 and accounts for 15-20% of all bone tumors. Myxoma is one of the most common types of tumors, in most cases, it is detected in 10-30-year-olds, and this disease affects the upper and lower jaw with approximately equal frequency. Its total indicator is 8%.

Fibrous dysplasia is more pronounced during the period of eruption of permanent teeth, as well as during puberty, which is accompanied by the activation of the activity of the endocrine system, and the rapid growth of other bones of the jaw and facial skeleton. Household injuries are leading among injuries. On average, 90% of household injuries are caused by impact, and 10% are caused by falls or other causes. Domestic injuries are 4 times more common in men than in women. 66% of domestic injuries occur between the ages of 20 and 40. Transport injuries have a seasonal nature (April-September) and are more common in men. 10-15% of injuries from firearms and damage to bones. Occupational injuries account for 10% (according to the World Health Organization (WHO) 2020 data).

According to the World Health Organization, by 2020 the prevalence of oncological diseases in the world will double, and the number of new patients will cover 20 million people. Evgrafov O.L., Permyakov N.E. According to (Izhevsk.-2012), in 2015 alone, more than half a million people in the Russian Federation were diagnosed with tumors, 25% of which were tumors of the gastrointestinal tract. These authors also presented data from the official Russian statistics on oncological diseases. According to statistics covering the years 2000-2010, the general intensive indicator of the incidence of malignant tumors of the oral cavity and larynx was 7.6 to 8.4 per 100,000 people. In addition, malignant tumors are twice as common as harmless ones, and malignant tumors of the upper jaw are two to three times more common than those of the lower jaw (75-85%). As a result, the number of patients who underwent surgery to eliminate tumors and who acquired LUJN increased.

Inflammatory diseases of the maxillofacial area, in particular, odontogenic osteomyelitis, which leads to osteonecrosis and subsequent sequestration, play a certain role in the occurrence of IFJD Desomorphine and bisphosphonate osteonecrosis of the jaw bones, which have recently appeared and have a completely new clinical picture, are also etiological factors leading to jaw bone defects. Despite the great success of modern reconstructive and restorative surgery, serious functional and aesthetic changes occur in patients after injury and surgery, which creates psychosocial problems in adapting to society and increases the need for urgent and complex prosthetics of the jaw area. **13** |P|ag|e



The above points once again demonstrate the urgency of the problem and each case requires a comprehensive and deep approach, involving specialists of certain specialties.

Research Methods

Research methods are: clinical; radiological; CT scan; MRI study; dopplerography; densitometry; ultrasound examination; morphological study; Immunological study; immunochemical method; bacteriological method; computer modelling; laboratory research methods; electron microscopic examination; spirometry; photometric survey; clinical photography; study of the structural features of the dentition on plaster models using a facial arch and an articulator; determination of periodontal indices, hygienic index, etc.; biomechanical research; questioning of dentists; interviewing patients; static analysis.

There is no uniform classification of acquired YUJN in domestic and foreign literature. According to the International Classification of Diseases (ICD), "Acquired defects and deformations of the soft tissues and bones of the maxillofacial area" is included in the ICD-10 special number:

T 90.0 – Superficial consequence of head injury

T 90.2 – Consequences of fractures of facial bones

T 91.1 - Consequences of superficial injuries and wounds of the neck

M 95.3 - Acquired deformities of the neck

M 95.2 - Other acquired deformations of the head.

There have been many attempts to classify acquired mandibular defects, and this has been accompanied by certain difficulties. Because the detailed analysis of the defects leads to the excessive expansion of the classification, and the desire for brevity raises many questions when choosing the way to treat the patient. If we turn to history, we can see that the classification of OJUJN began in the middle of the last century. 1945 since Khitrov F.M. and Weisblat I.N.'s classification of mandibular bone defects was developed In 1958, Dunaevsky V.A.'s classification of mandibular defects created by was relatively successful. In it, the author noted that the soft tissues around the jaw were also involved, but the study did not include a description of the location and size of the defect. Later Kurlyandsky V. Yu., 1958; Researchers such as Betelman A.I., 1965, and Oksman I.M., 1968, also tried to classify the acquired defects of the lower jaw, and the authors also paid attention to the teeth remaining in the jaw fragments. B.L. In Pavlov's classification of 1972, three classes were formed based on the number of fragments remaining in the dental arch, and the size of the defect and the location of the process were taken into account.

T.I. Samedov's classification of 1984 included aspects such as the displacement component of the lower jaw lobes under the influence of the muscle apparatus and the combination of the defects of the jaw bones with the soft tissues adjacent to it. In 1989, a universal classification was proposed by Davidetal to divide mandibular defects into segments without taking into account soft tissue components. Boydetal. (1991) represented the defects with letter symbols (Y, C, L) and also referred to the soft tissue elements of the defect (o, m, s, cm). In the same year, Urkenetal. filled with bone and soft tissue elements, as well as neurological damage, but due to the difficulty of practical application, they were not widely popularized. Khodorkovsky M.A. In 1999, Boyd improved his classification, changing its letter symbols (A, V, S, D) and enriching it with many factors. Nevertheless, the definition of the question of the duration of mandibular defects remained abstract, and the relationship between the bone structure defect and the soft tissue elements was not clarified.

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As the most modern example of systematization of lower jaw defects taking into account bone structures and soft tissue elements, Kadirov M.S. classification (2007) can be cited. Of particular note, this study took into account the etiological factors of the defect, location, size of the defect, tissue composition, as well as the presence of neurological symptoms. But due to a large number of subdivisions of the group, the classification was not widely popular. Also, among experts A.S. Gerasimov's classification of intermediate defects of the lower jaw (2011) was recognized. In it, the author decided to characterize the defects with letters based on their location and taking into account their lost segment (YaASMSAYa) and filled it with subsections of the class. Unfortunately, this classification was not unanimously accepted due to the difficulty of understanding letter-specific definitions. Thus, today there is no unified and generally accepted classification used in the diagnosis of patients with mandibular fracture(s), which, of course, causes a number of difficulties in revealing and interpreting the mechanism of injuries of the lower jaw.

A number of complications may develop in the complex and special treatment of patients with fractures and OJSN. Belova O.M., and Gunko V.I. (2010) divided complications occurring during treatment into three groups: preoperative, intraoperative, and postoperative. These authors include recurrence of deformity, patient's dissatisfaction with the aesthetic results of the operation, tissue sensitivity in the area innervated by the trigeminal nerve, and dysfunction of the temporomandibular joint, among the complications noted after a sufficient period of time after the surgical procedure.

In the studies of some authors, it is recognized that inflammation is the most common complication in the treatment of patients with fractures and OA. Complications after surgical operation of UJS are on average 13-14% and may prolong the duration of treatment, require additional financial costs, and cause chronic inflammation. Today, the issue of prevention and treatment of inflammations as the most common complication of surgical operations, especially dental implantation, has not been fully resolved.

Post-operative changes in the gastrointestinal tract, in turn, have a negative effect on the micro biocenosis of the oral cavity. Defects of the upper jaw lead to chronic inflammation of the ENT organs, which is associated with the passage of food into the nasal cavity, the difficulty of performing hygienic measures, because even rinsing the mouth becomes difficult, and in some cases, a completely impossible task for the patient. Afanasev V.V. (2010) found through their personal research and literature review that 10-30% of the complications of jaw bone fractures are associated with the lower jaw, leading to osteomyelitis and false joint formation in the setting of severe microcirculatory disturbances.

A common complication of maxillary fractures is traumatic sinusitis, which is the passage of foreign bodies, bone, and tooth fragments into the maxillary cavity.

occurs as a result of passing. Complications are observed in 39.5% of cases after the stage of surgical procedure using reconstructive plates. They are more slow consolidation when fixing the fragments in the wrong position without taking into account the occlusion; movement of fragments during fastening of an insufficient number of screws; violation of osseointegration of screws; fracture of plates; by the oral cavity, including the absence of snoring with orthopedic constructions, despite the instructions. The use of metal alloy orthopedic structures in the treatment of patients with fractures and OJSN can be accompanied by complications in the form of chemical, toxic, electro galvanic, and allergic effects on the body, which leads to the formation of a microbial

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film on the material of the prosthetic structure, strengthens the negative micro biocenosis of the oral cavity, and increases the inflammation of the oral cavity.

According to some authors, the treatment of patients with complex fractures of the jaw bones is an attempt to correct mistakes made during the specialized care of a newly injured patient. Taking into account the most common complications in patients diagnosed with fractures and OJSN, the need for timely, rational, and reliable immobilization of the jawbones and their fragments by orthopedic and surgical methods, as well as prevention of inflammatory conditions as the most common complication after LUJS operations, in particular, dental implantation and requires treatment.

Chewing efficiency assessment method. The loss of the anatomical integrity of the jaw bones is accompanied by disorders of a functional nature. Functional examination methods are of great importance when it is required to choose the optimal design of the jaw apparatus or prosthesis, to monitor the dynamics of the performed treatment measures. Assessment of masticatory dysfunction in this category of patients is a particularly important issue because it is the most common and widespread form of functional disorder. There are various methods of evaluating chewing efficiency, and their dynamic (functional) forms are of greater interest. Assessment of chewing efficiency in patients with fractures and acquired jaw bone defects Dolgalev A.A. developed by Beynarovich S.V. carried out in an improved method. It is a method that is easy to use, but capable of providing sufficient information, does not require excessive time, or financial costs, and is convenient for the patient.

Evaluation of chewing performance was performed before and after the orthopedic phase. Also, the process was repeated 12 months after a major maxillofacial prosthetic procedure to functionally evaluate complex maxillofacial prostheses and appliance designs. Methodologically, the following work was done: 200m thick Bausch Articulationpaper ® arched articulation paper and cut to the same size and interlocked, the occlusal surface of the tooth row, including the calque placed on the dentures, were used. Figure 1. When rows of teeth are brought together in a central occlusion position, the mold takes color from the occlusal contact areas. The surface of the painted paper was then scanned using the high-quality CamScanner software application to create a virtual copy of the papers. The scan results were processed using the Universal Desktop Ruler software, which was helpful in calculating the occlusal contact area. 99 Bausch Articulationpaper® Articulation Paper.

Beynarovich S.V. According to (2010), the value of the total area of occlusal contacts of a person with intact tooth rows is 200 mm². The data on the evaluation of chewing performance of patients in the main and comparison groups before and after jaw prosthesis were mutually and S.V. It was compared with the mean value of Bejnarowicz data. A total of 16 patients with mandibular defects were examined before treatment.

Conclusion

In conclusion, it should be noted that our study will: improve the efficiency of diagnosis and treatment of patients with congenital and acquired defects and deformities of the maxillofacial region; improve the quality of treatment of patients with mandibular fractures; increase the effectiveness of treatment of patients with radicular cysts of the jaws; to determine the most effective methods of bone restoration operations in specific clinical situations; prevent complications in dental implantation; increase the effectiveness of treatment of patients with diseases of the temporomandibular joint; increase the effectiveness of preoperative prevention and 16 | Page





reduce the time of treatment of patients with inflammatory diseases of the paranasal sinuses, optimize postoperative rehabilitation; to improve the efficiency of diagnostics and complex treatment of patients with bisphosphonate necrosis of the jaw bones.

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