

**TO THE QUESTION OF THE OCCURRENCE OF COMPLICATIONS OF AN  
INFLAMMATORY NATURE IN FRACTURES OF THE LOWER JAW**<sup>1</sup>Turakhanov S.V., <sup>2</sup>Khramova N.V.<sup>1,2</sup>Tashkent State Dental Institute<https://doi.org/10.5281/zenodo.8367122>

**Abstract.** The article analyzes the main factors leading to the development of inflammatory complications in jaw fractures. Among them, the main ones are poor oral hygiene, lack of sanitation of purulent foci before surgical treatment, late negotiability, social status.

**Keywords:** mandibular fracture, complications, inflammation.

**Аннотация.** В статье проведен анализ основных факторов, приводящих к развитию осложнений воспалительного характера при переломах челюстей. Среди них, основными определены плохая гигиена полости рта, отсутствие санации гнойных очагов перед оперативным лечением, поздняя обращаемость, социальное положение.

**Ключевые слова:** перелом нижней челюсти, осложнения, воспаление.

Mandibular fractures account for up to 80% of the total number of injuries to the bones of the facial skeleton[7,10,13,16]. According to T.M. Lurie, the largest number of fractures of the lower jaw falls on the most efficient age group of the population from 17 to 40 years (76%). Considering that a large number of mandibular fractures occur at working age, it is necessary to conduct adequate treatment, starting from the clinical situation, and also strives for a full functional recovery of the patient [9]. Also, an unfavorable factor is the effect of double-jaw splints on periodontal tissues (Fleischer G. M., 2016). The course of the post-traumatic period of mandibular fractures is influenced by various factors, including periodontal disease, the presence of teeth in the fracture line and unsanitized foci of inflammation, which are potential sources of infection [2,3,14]. When rehabilitating with injuries of the maxillary fossa, it should be taken into account that such injuries are often combined with closed craniocerebral injuries, and are also accompanied by a violation of the function and structure of the TMJ (Saveliev A.L., 2012). We also believe that the social status of a patient with a mandibular fracture, his psychological state during the injury and during the period of treatment can indirectly impede rehabilitation (M. E. B. Klubova, 1995, G. Ivashkina, 1998). The available literature describes methods of transport immobilization for fractures of the jaws: standard elastic chin sling Pomerantseva-Urbanskaya, sling-like bandage, standard hard-elastic transport bandage, extraoral fixation splint with rubber bands-rings, hippocratic parietal chin bandage. However, there is no universal method of transport immobilization for jaw fractures. In recent years, among the surgical methods of treatment, a special place has been occupied by transfocal osteosynthesis with various systems of plates made of monolithic titanium[1,4,5,11,17]. At the same time, surgical intervention exacerbates the degree of post-traumatic disorders in bone and muscle tissues, increases the risk of secondary infection of the bone wound (Morozova M.V., 2000). The choice of methods for surgical fixation of mandibular fragments, depending on the type of fracture, remains open[8,12,15].

The aim of our study was to analyze the results of treatment methods for patients with fractures of the lower jaw according to the data of the department of adult maxillofacial surgery of the Tashkent state stomatological institute (Republic of Uzbekistan).

Materials and methods: To conduct research on injuries of the maxillofacial region, we analyzed the case histories of the department of adult maxillofacial surgery of the Tashkent state dental institute for the period from 2021 to December 2022. The following sections were selected for registration: age, gender, place of residence, time and period of referral, etiology, diagnosis.

The results and conclusions. The analysis showed that the largest number of patients are between the ages of 28 and 45 years. Most of them are men (92%). There were 34% of residents of the city of Tashkent and the Tashkent region, 66% of other regions. In the Republic of Uzbekistan. Analysis of diagnoses at admission determined the prevalence of fractures of the bones of the nose in the proportion of bones of the facial skeleton (53%). In most cases, injuries were combined (trauma to the brain, face, limb fractures, etc.). Most often, people of the most socially active age (28-45 years) are injured. Therefore, it is necessary to actively introduce modern and most effective methods into the process of diagnosing and treating injuries of the maxillofacial region, as well as to involve in this process not only the maxillofacial surgeon, but also other specialists, such as a resuscitator, neurosurgeon, ENT doctor, ophthalmologist. Osteosynthesis was carried out in patients with partial and complete edentulous mandible when it was impossible to apply dental splints and other orthopedic methods of fixing bone fragments. Among the patients who initially underwent splinting, osteosynthesis was also performed, if after the control X-ray examination there was a displacement of fragments of the lower jaw, the percentage of such patients was 19%. Considering that the treatment of patients with partial and complete edentulous dentition remains the most problematic, in this clinical situation, it is necessary to search for new methods of fixing bone fragments.

We also studied the effect of Tigerstedt splints on the condition of the patient's gums. We have determined in dynamics an increase in the hygienic index according to Green-Vermilion, which indicates a deterioration in the state of the periodontium in dynamics. The RMA also increased. Thus, by the end of the period of immobilization with splints, the condition of the periodontium in all patients has changed, there were complaints of an unpleasant odor, bleeding, and tooth mobility. The prolonged presence of ligatures in the area of the necks of the teeth leads to the development of an inflammatory process in periodontal tissues, the occurrence of gum changes. For the full rehabilitation of patients with mandibular fractures treated with the use of double-jaw splints, the supervision of a dentist during the entire period of immobilization, as well as after removing the splints, is necessary.

Summarizing the above, we can conclude that the recovery process of patients with jaw fractures is greatly influenced by many local and general factors[6,9,11,18]. The use of an interdisciplinary approach to patients with jaw fractures will improve the results of treatment, which contributes to the full psychological and physiological rehabilitation of patients.

## REFERENCES

1. Лепилин А. В., Ерокина Н. Л., Прокофьева О. В., Бахтеева Г. Р., Рогатина Т. В., Жилкина О. В. Особенности проявления вегетативных реакций у больных с переломами нижней челюсти // Российский стоматологический журнал. – 2011. – N 5. – С. 25 -27

2. Пудов А. Н., Спиридонова Е. А., Дробышев А. Ю., Бобринская И. Г. Анализ причин и характера повреждений при травме нижней челюсти // Вестник интенсивной терапии. – 2011. – N3. – С. 41 -43
3. Рединова Т. Л. Влияние шин на состояние твердых тканей зубов и пародонт у больных с переломами челюстей // Т. Л. Рединова, С. Н. Колесников // Стоматология. – 1998. – N 1. – С. 42 -44
4. Флейшер Г. М. Особенности клинической картины переломов нижней челюсти//Международный научный журнал «Символ науки».- 2016.- №2.С. 178-181
5. Храмова Н.В., Махмудов А.А. Структура травм челюстно-лицевой области по данным Клинической больницы скорой медицинской помощи (Республика Узбекистан) // Вестник науки и образования.-2020-№ 12(90).Часть 2.- С.103-106. DOI: 10.24411/2312-8089-2020-11201
6. Храмова Н.В., Тураханов С.В., Махмудов А.А., Рахимов М.М.Тактика лечения больных с переломами лицевых костей. Медицинские новости (Беларусь). 2020; 11: 58-59.
7. Giovacchini F, Paradiso D, Bensi C, Belli S, Lomurno G, Tullio A. Association between third molar and mandibular angle fracture: A systematic review and meta-analysis. J Craniomaxillofac Surg. 2018 Apr;46(4):558-565. doi: 10.1016/j.jcms.2017.12.011. Epub 2018 Feb 17. PMID: 29459187.
8. Lee WB, Kim YD, Shin SH, Lee JY. Prognosis of teeth in mandibular fracture lines. Dent Traumatol. 2021 Jun;37(3):430-435. doi: 10.1111/edt.12647. Epub 2021 Jan 9. PMID: 33421357.
9. Kroon FH. Mandibulafractuur [Mandibular fracture]. Ned Tijdschr Tandheelkd. 1997 Nov;104(11):428-31. Dutch. PMID: 11924438.
10. Soós B, Janovics K, Tóth Á, Di Nardo MD, Szalma J. Association Between Third Molar Impaction Status and Angle or Condylar Fractures of the Mandible: A Retrospective Analysis. J Oral Maxillofac Surg. 2020 Jul;78(7):1162.e1-1162.e8. doi: 10.1016/j.joms.2020.02.005. Epub 2020 Mar 6. PMID: 32151652.
11. Armond ACV, Martins CC, Glória JCR, Galvão EL, Dos Santos CRR, Falci SGM. Influence of third molars in mandibular fractures. Part 2: mandibular condyle-a meta-analysis. Int J Oral Maxillofac Surg. 2017 Jun;46(6):730-739. doi: 10.1016/j.ijom.2017.02.1265. Epub 2017 Mar 1. PMID: 28259600.
12. Kontio R, Suuronen R, Ponkkonen H, Lindqvist C, Laine P. Have the causes of maxillofacial fractures changed over the last 16 years in Finland? An epidemiological study of 725 fractures. Dent Traumatol. 2005 Feb;21(1):14-9. doi: 10.1111/j.1600-9657.2004.00262.x. PMID: 15660750.
13. Bicsák Á, Abel D, Berbuesse A, Hassfeld S, Bonitz L. Evaluation of Mandibular Fractures in a German Nationwide Trauma Center Between 2015 and 2017. J Maxillofac Oral Surg. 2022 Sep;21(3):904-910. doi: 10.1007/s12663-021-01513-4. Epub 2021 Jan 15. PMID: 36274900; PMCID: PMC9474798.