




---

**Spectrum Journal of Innovation, Reforms and Development**


---

**Volume 10, Dec., 2022**
**ISSN (E): 2751-1731**


---

**Website: [www.sjird.journalspark.org](http://www.sjird.journalspark.org)**


---

**POSTINJECTION CONTRACTURE OF THE MANDIBLE**


---

Fattayeva Dilorom Rustamovna  
 Karimboev Izzatillo Allanazar ugli  
 Otakhonov Ruzibek Oripjon ugli  
 Ergashev Jaloliddin Tojiyevich  
 Toshkent State Dental Institute

---

**Annotation**

The relevance of the topic. Local anesthesia in dentistry can currently be considered as a separate discipline of dentistry. As experience shows, anesthesia has been and remains one of the most important problems, both in general dentistry and in its private sections.

**Keywords.** Anesthesia, post-injection contracture, mandible, X-ray examination.

**Clinical part of the work**

In the course of the clinical part of the work, 36 patients aged 20 to 66 years were studied and treated, in whom the restriction of opening the mouth occurred after anesthesia of the third branch of the trigeminal nerve at a dental appointment. Among patients there were 20 women and 16 men.

All patients underwent a clinical examination, which began with finding out the anamnesis of the disease and complaints. During the collection of anamnesis, the timing of the appearance of the restriction of mouth opening, the name of the anesthetic used for anesthesia, its quantity, then the patient was examined, in which the volume of mouth opening was assessed, the presence of infiltrates was assessed on palpation,

The complaints made by patients with post-injection contractures are also characteristic of a number of diseases of the maxillofacial region, which required differential diagnosis, which was carried out without fail and was based on clinical and radiological research methods.

Documentary confirmation of the patient's condition was carried out, which consisted in the production of photographs of the patient, including with the mouth as open as possible.

Additional examination methods were based on radiation methods of examination. All patients underwent a detailed X-ray examination, which consisted in conducting an orthopantomogram and spiral computed tomography (CT) of the lower facial area and temporomandibular joints.

At the same time, either panoramic zonography of the joints or SCT of the joints were used. Zonography was performed on a special orthopantomograph OP-6 "Zonark" (Russia), in the lateral projection of the joints, both joints were displayed on the same zonogram simultaneously. The shooting was carried out under conditions of 65-70 kV, 10 tA, the course of the system was 8 seconds, the usual shooting scheme was used. Zonography in the usual occlusion and with the mouth as open as possible, the CT was carried out on a spiral computed tomograph. High Speed DX/1 of the company "General Electric" (France). Scanning was carried out in standard mode in axial projection in the position of the image was carried out



using multiplanar reconstructions during postprocessing in sagittal, frontal, and sometimes axial planes.

The anatomical features of the bone elements of the articulation, the condition, shape and size of the X-ray articular gap in various parts (anterior, middle and posterior) in the usual occlusion and the position of the articular head in relation to the elements of the articular cavity with the maximum possible opening of the mouth were analyzed on zonograms and SC tomograms.

The treatment of patients with post-injection contractures of the mandible was of a complex nature. Depending on the nature and scope of therapeutic measures, all observed patients were divided into two groups: Group 1 - patients who were treated on an outpatient basis and did not require open surgery to restore the function of the mandible (patient), who were divided into two subgroups who applied up to 2 weeks (10 patients) and later terms (23 patients), after the appearance of mouth opening restriction, group 2 - patients whose complex of therapeutic measures included surgical excision of scars and ossified tissue areas of the pterygoid-maxillary space (3 patients).

The relevance of the topic. Local anesthesia in dentistry can currently be considered as a separate discipline of dentistry. As experience shows, anesthesia has been and remains one of the most important problems, both in general dentistry and in its private sections. Back in 1981, at the initiative of Professor V.F. Rudko, the All-Union Congress of Dentists adopted a comprehensive scientific program "Development, improvement and introduction into practice of pain management methods in the treatment of dental diseases".

Local anesthesia has been, is and will be the main method of anesthesia in dental practice. The days when a doctor at a dental appointment did not have the opportunity to offer the patient adequate anesthesia are in the past. However, having solved some problems, practicing dentists got completely different ones. The huge market of offers in the market of dental anesthesiology has created certain difficulties in the implementation of adequate anesthesia.

A special place among them is occupied by complications of an iatrogenic nature. Analyzing the complications, we can conclude that they are based on insufficient professional training, formal, sometimes negligent attitude towards patients. The wide scope and improvement of the quality of dental care, further development and introduction into the practice of rehabilitation of dental patients have set new tasks for the dental clinic for a comprehensive in-depth examination of tissues and organs of the oral cavity, maxillofacial region and the general condition of the body, new methods of diagnosis and treatment are introduced into dental practice every year. In dental science, an important direction is the search for new methods of diagnosis and treatment. But, despite the improvement in the diagnosis and treatment of teeth, mistakes are still made that lead to various complications.

In recent years, local anesthesia in dentistry has become widespread. And in this regard, the number of patients with various complications after local anesthesia has increased dramatically. The widespread use of local anesthesia during various dental manipulations has led to a sharp increase in the number of patients with post-injection contractures of the lower jaw. Постинъекционная контрактура нижней челюсти характеризуется выраженным стойким ограничением открывания рта. На сегодня проблема резких нарушений движений нижней челюсти, возникающих, при проведении проводниковой анестезии



нижней челюсти остается актуальной. Обычно данное осложнение возникает у пациентов, которым выполнялась проводниковая анестезия третьей ветви тройничного нерва. Как правило, практически все пациенты в анамнезе отмечают неудовлетворительное обезболивание и неоднократные попытки анестезий [22,23].

These issues are practically not disclosed in the literature. There are different hypotheses and only a few authors address them [12, 14]. The lack of illumination of this problem in the literature, different approaches to the treatment of complications arising during local anesthesia, emphasize the relevance of the work.

There is no consensus on the mechanism of occurrence of extra-articular post-injection contracture of the mandible, which further confuses the tactics of treatment of such patients [24,]. Knowledge of the mechanism of occurrence of postinjection contractures of the mandible will help timely prevention and proper treatment of complications.

Improving the effectiveness of local anesthesia in dental patients by preventing and timely treatment of local complications, based on the identification of the mechanism of their development using anatomical and experimental studies.

To achieve this goal, the following tasks were solved:

1. To determine the relationship between the injection needle and the structures of the pterygoid-maxillary space during conduction anesthesia of the third branch of the trigeminal nerve and, based on topographic and anatomical studies, to identify anatomical formations undergoing trauma.
2. To clarify the reaction of muscle tissue to the introduction of various anesthetic solutions into its thickness in the experiment.
3. To determine the mechanism of development of postinjection contracture of the mandible after anesthesia of the third branch of the trigeminal nerve on the basis of data obtained during anatomical and experimental studies.
4. Modify the technique of mandibular anesthesia for the prevention of post-injection contracture of the mandible.
5. To develop an algorithm of diagnostic measures carried out in patients with postinjection contracture of the mandible at the stage of diagnosis.
6. To develop a method of treatment of patients with post-injection contracture of the mandible, based on the identified mechanism of development of this complication of local anesthesia.

For the first time, the nature of injury to the tissues of the pterygoid-maxillary space with a needle during conducting types of anesthesia of the third branch of the trigeminal nerve, which was expressed in their mechanical damage with the formation of hemorrhages, hematomas or the introduction of an anesthetic into the thickness of muscle tissue, was studied. It was found that when an anesthetic is injected into a muscle, necrosis occurs in the area of its administration, which is associated with the presence of a vasoconstrictor in the composition of the drug. For the first time, the mechanism of development of postinjection contracture of the mandible caused by mechanical injury of the tissues of the pterygoid-maxillary space with an injection needle, in violation of the technique of anesthesia, with the formation of hemorrhages, hematomas and / or the introduction of an anesthetic with a vasoconstrictor into the muscle, which leads to the formation of adhesions, followed by the formation of a scar in



the tissues of the pterygoid-maxillary space and is manifested by a sharp violation of the volume of movements of the lower jaw. For the first time, a modified method of mandibular anesthesia has been proposed, which provides prevention of possible complications, and is based on the features of the anatomical structure of the anesthesia area, which minimizes trauma to the tissues of the pterygoid-maxillary space.

For the first time, an algorithm of diagnostic measures based on clinical and radiological research methods has been developed, providing diagnostics of postinjection contracture of the mandible.

For the first time, a comprehensive method of treating patients with post-injection contracture of the mandible has been developed, depending on the period of seeking medical help and the degree of severity of changes in the tissues of the pterygoid-maxillary space. An algorithm for diagnosing post-injection contracture of the mandible has been developed, which allows timely detection of this complication of local anesthesia, based on clinical and radiological data and mandatory differential diagnosis. For practical use, a method has been developed for the treatment of patients with post-injection contracture of the mandible, depending on the period of seeking medical help and the degree of severity of changes in the tissues of the pterygoid-maxillary space. Based on the determination of the mechanism of occurrence of postinjection contracture of the mandible during conduction anesthesia of the third branch of the trigeminal nerve, a modified method of mandibular anesthesia has been developed to ensure minimal injury to the tissues of the pterygoid-maxillary space.

1. Postinjection contracture of the mandible is a complication of local anesthesia that occurs when the technique of conducting conductive types of anesthesia of the third branch of the trigeminal nerve is violated.

2. Trauma of the structures of the pterygoid-maxillary space with the formation of hemorrhages and hematomas and / or the introduction of an anesthetic into the thickness of muscle tissue create conditions for the development of the adhesive process in the tissues of this area, which leads to the formation of a scar and the development of extra-articular post-injection contracture of the lower jaw, manifested by a pronounced persistent limitation of the volume of mouth opening.

3. Methods of treatment of patients with post-injection contractures of the mandible depend on the time of initiation of therapeutic measures and the severity of changes in the tissues of the pterygoid-maxillary space.

Local anesthesia in dentistry can currently be considered as a separate discipline of dentistry. As experience shows, anesthesia has been and remains one of the most important problems, both in general dentistry and in its private sections. Back in 1981, at the initiative of Professor V.F. Rudko, the All-Union Congress of Dentists adopted a comprehensive scientific program "Development, improvement and introduction into practice of methods to combat pain in the treatment of dental diseases" [21]. Local anesthesia has been, is and will be the main method of anesthesia in dental practice. The days when a doctor at a dental appointment did not have the opportunity to offer the patient adequate anesthesia are in the past. However, having solved some problems, practicing dentists got completely different ones. The huge market of offers in



the market of dental anesthesiology has created certain difficulties in the implementation of adequate anesthesia.

A special place among them is occupied by complications of an iatrogenic nature.

Analyzing the complications, we can conclude that they are based on insufficient professional training, formal, sometimes negligent attitude to patients. A wide scope and improvement of the quality of dental care, further development and implementation in practice

The rehabilitation of dental patients has set new tasks for the dental clinic for a comprehensive in-depth examination of the tissues and organs of the oral cavity, the maxillofacial region and the general condition of the body. New diagnostic and treatment methods are introduced into dental practice every year. In dental science, an important direction is the search for new methods of diagnosis and treatment. But, despite the improvement in the diagnosis and treatment of teeth, mistakes are still made that lead to various complications.

In recent years, local anesthesia in dentistry has become widespread. And in this regard, the number of patients with various complications after local anesthesia has increased dramatically. The widespread use of local anesthesia during various dental manipulations has led to a sharp increase in the number of patients with post-injection contractures of the lower jaw.

Postinjection contracture of the lower jaw is characterized by a pronounced persistent restriction of mouth opening. Today, the problem of abrupt violations of the movements of the lower jaw that occur during conduction anesthesia of the lower jaw remains relevant. Usually, this complication occurs in patients who have undergone conduction anesthesia of the third branch of the trigeminal nerve. As a rule, almost all patients have a history of unsatisfactory anesthesia and repeated attempts at anesthesia. These issues are practically not disclosed in the literature. There are different hypotheses and only individual authors address them.

The lack of illumination of this problem in the literature, different approaches to the treatment of complications arising during local anesthesia, emphasize the relevance of the work. There is no consensus on the mechanism of occurrence of extra-articular post-injection contracture of the mandible, which further confuses the tactics of treatment of such patients. Knowledge of the mechanism of occurrence of postinjection contractures of the mandible will help timely prevention and proper treatment of complications.

### List of Literature

1. Fattaeva D. R., Rizaev J. A., Rakhimova D. A. Efficiency of Different Modes of Therapy for Higher Sinus after COVID-19 in Chronic Obstructive Pulmonary Disease //Annals of the Romanian Society for Cell Biology. – 2021. – С. 6378–6383-6378–6383.
2. Фаттаева Д. Р. и др. CLINICAL PICTURE OF SINUSITIS IN PATIENTS AFTER COVID-19 WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE //УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ. – 2021. – Т. 2. – №. 2.
3. Фаттаева, Д. Р., Ризаев, Ж. А., Рахимова, Д. А., & Холиков, А. А. (2021). CLINICAL PICTURE OF SINUSITIS IN PATIENTS AFTER COVID-19 WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE. УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ, 2(2).



4. Холиков, А., Юлдашев, А., Фаттаева, Д., & Олимжонов, К. (2020). JAW FRACTURE DIAGNOSTICS AND TREATMENT. *Stomatologiya*, 1(2 (79)), 88-93.
5. Фаттаева Д. Р. и др. CLINICAL PICTURE OF SINUSITIS IN PATIENTS AFTER COVID-19 WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE //УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ. – 2021. – Т. 2. – №. 2.
6. Холиков А. и др. ПЕРЕЛОМ ЧЕЛЮСТИ ДИАГНОСТИКА И ЛЕЧЕНИЕ //Stomatologiya. – 2020. – №. 2 (79). – С. 88-93.
7. Холиков А. и др. JAW FRACTURE DIAGNOSTICS AND TREATMENT //Stomatologiya. – 2020. – Т. 1. – №. 2 (79). – С. 88-93.
8. Холиков А. и др. Сравнительная характеристика методов лечения переломов нижней челюсти //Журнал вестник врача. – 2020. – Т. 1. – №. 4. – С. 109-114.
9. Холиков А. и др. Анализ современной эпидемиологической картины переломов нижней челюсти //Журнал вестник врача. – 2020. – Т. 1. – №. 4. – С. 103-108.
10. Fattayeva D. R. ADVANTAGES OF EARLY DETECTION AND TREATMENT OF ODONTOGENIC HEMORRHOIDS IN PREVENTING COVID-19 COMPLICATIONS //British Medical Journal. – 2021. – Т. 1. – №. 1.2.
11. Фаттаева Д., Ризаев Ж., Рахимова Д. ОСОБЕННОСТИ КЛИНИЧЕСКОГО ТЕЧЕНИЯ ХРОНИЧЕСКОГО ГАЙМОРИТА ПРИ БРОНХО-ЛЕГОЧНОЙ ПАТОЛОГИИ //SCIENTIFIC IDEAS OF YOUNG SCIENTISTS. – 2021. – С. 28.
12. Рахимова Д. А., Садыкова Г. А., Фаттаева Д. Р. ВЛИЯНИЕ РЕЗОНАНСНОЙ ТЕРАПИИ НА СОСТОЯНИЕ КАРДИОРЕСПИРАТОРНОЙ СИСТЕМЫ БОЛЬНЫХ ХРОНИЧЕСКОЙ ОБСТРУКТИВНОЙ БОЛЕЗНЬЮ ЛЕГКИХ ПЕРЕНОСЩИХ COVID-19//Теоретические и прикладные проблемы современной науки и образования. – 2021. – С. 376-380.
14. Mamadrizaeva, Z. F., Rakhmatova, S. S., Yunusov, A. A., & Fattayeva, D. R. (2022). FEATURES OF THE TREATMENT OF FRACTURES OF THE ZYGOMATIC-ORBITAL COMPLEX. *British View*, 7(4).
15. Urunbaeva, S. S., Alishakhi, L. S., Pirmatov, M. A., & Fattayeva, D. R. (2022). OPTIMIZATION OF TREATMENT OF PATIENTS WITH PHLEGMON OF THE MAXILLOFACIAL REGION. *British View*, 7(4).
16. Mamadrizaeva, Z. F., Rakhmatova, S. S., Yunusov, A. A., & Fattayeva, D. R. (2022). FEATURES OF THE TREATMENT OF FRACTURES OF THE ZYGOMATIC-ORBITAL COMPLEX. *British View*, 7(4).
17. Urunbaeva, S. S., Pirmatov, M. A., Nosirov, S. S., & Kholikov, A. A. (2022). COMPARATIVE CHARACTERISTICS OF THE TREATMENT OF MANDIBULAR FRACTURES. *British View*, 7(4).