



Comparative Characteristics of Surgical Methods for Fixing Bone Fragments of the Zygomatic Bone and Arch

**Kamolova Feruza
Rahmatilloeyvna**

Head of the Department of Pediatric Dentistry of the Bukhara State Medical Institute. Doctor of Medical Sciences, Professor.
doctor_feruz@mail.ru

**Qalandarov Eldor Sheramat
ugli**

Master of the Department of Pediatric Dentistry Bukhara State Medical Institute.

ABSTRACT

The zygomatic arch is a complex formed by the temporal process of the zygomatic bone. Quite often, fractures of the zygomatic arch proper are observed, which do not extend to the body of the zygomatic bone and its other processes. [1,3]

Keywords:

Zygomatic-orbital zone, zygomatic bone, trauma, bone defect, restorative intervention, fresh wound, chronic fracture

According to the literature, patients with fractures of the zygomatic bone and arch make up from 6.5 to 19.4% of the total number of patients with facial bone injuries. In our clinic, they amounted to 9.5%, since not only patients are admitted here in the order of emergency care, but also a significant number of planned patients who need complex reconstructive and restorative operations after trauma to other bones of the face. [2] The reason for them is often household (falling, hitting with a fist or a hard object), industrial, transport or sports. [1,2]

According to the most common classification, fractures of the zygomatic bone and arch are divided into the following groups: [4,7]

1. Fresh closed or open isolated fractures without displacement or slight displacement of fragments;
2. Fresh closed or open isolated fractures with significant displacement of fragments;

3. Fresh closed or open combined fractures without displacement or with displacement of fragments;

4. Fresh closed or open combined fractures with simultaneous damage to other bones of the face;

5. Chronic fractures and traumatic defects of the zygomatic bone and arch with deformity of the face and impaired movements of the lower jaw;

All fresh fractures of the zygomatic bone and arch can be divided into 8 classes, and in each of them there are closed fractures, open (due to violation of the integrity of the skin, mucous membrane and gums or maxillary sinus, conjunctiva), fractures without displacement and with displacement of fragments. [5]

Fractures of the zygomatic bones are usually combined with a closed craniocerebral injury, most often with a concussion of the brain, less often with a moderate or severe contusion. [6,8] The direct contact of the face with each other as a whole and with the zygomatic bone in

particular, as well as the complexity of the variety of vascular and nerve plexuses located here, cause the occurrence of a variety of injuries in this area, united under the name "Purcher's Syndrome", or the syndrome of traumatic retinopathy and antiopathy.

In the first hours after injury, before the appearance of edema, infiltration or hematoma, palpation can provide so much valuable objective data that in some cases there is no need for an X-ray examination. [9,10]

Purpose of the study: To evaluate various surgical methods for fixing fragments of the zygomatic bone.

Materials and methods: We analyzed 134 case histories of patients with fractures of the zygomatic bone, who were treated at the Department of Maxillofacial Surgery of the Bukhara Regional Multidisciplinary Medical Center for 2010-2015, who underwent surgical immobilization of bone fragments.

Taking into account the literature data and the experience of our clinic, we divided all injuries of the zygomatic bone and arch, depending on the time since the injury, into 3 groups:

1. Fresh fractures - up to 10 days after injury;
2. Chronic fractures - 11-30 days;
3. Incorrectly growing together and not growing together - more than 30 days.

According to our observations for the period 2010-2015, 85 operations of osteosynthesis of bone fragments of the zygomatic bone were performed. Approximately in 4/1 of the examined patients, a fracture of the zygomatic bone was accompanied by a fracture of the coronoid and condylar processes of the lower jaw, or with a fracture of the frontal bone, upper jaw, trauma to the teeth, bones of the base of the skull. The displacement of the fragments was of varying degrees, and the asymmetry of the face and retraction of the eyeball, being a cosmetic defect, was accompanied by functional disorders in the form of diplopia, restriction of mouth opening. Therefore, in each of the 8 listed classes of fresh fractures of the zygomatic bone, a combination of a number of more or less pronounced symptoms of cosmetic and

functional disorders was noted. If the fracture of the body of the zygomatic bone was multi-comminuted and the patient underwent osteosynthesis with revision of the maxillary sinus. In most cases, the fracture of the zygomatic bone was displaced down, inward and backward; less often, the displacement is directed upwards, inward and backward, and even more rarely outwards - backwards or forwards. In any displacement of the zygomatic bone, damage to the infraorbital nerve or its posterior superior alveolar branches occurs, which manifests itself as a violation of the sensitivity of the skin of the infraorbital region, upper lip, wing of the nose, as well as a violation of the electrical excitability of the teeth of the upper jaw.

Dividing fractures of the zygomatic bone requiring surgical treatment by anatomical regions, we obtained the following data: the largest number of operations, due to a greater tendency to displacement and the impossibility of eliminating the displacement by manual reposition and the Limberg hook, were performed in medial fractures of the zygomatic bone (58.7 %) and in the area of the zygomatic-temporal suture (30.7%). Less commonly, surgical methods of fixing fragments were used in the area of the zygomatic arch (11.6%). Of the 85 osteosynthesis of the zygomatic bone, in 78% of cases, bone fragments were fixed with a polyamide thread, in 12% with titanium miniplates, and in 10% with a metal wire. Comminuted fractures served as indications for fixation and fragment fragmentation with titanium miniplates. Most often, fixation with titanium miniplates was used for a medial fracture of 46.2%, in other cases, a suture with a polyamide thread and a metal wire was used.

Conclusion: Diagnosis of fractures of the zygomatic bone and the arch is based on the data of the anamnesis, external examination, palpation of the damaged area, examination of the state of bite, anterior rhinoscopy, radiography in the axial and sagittal (naso-chin) projections. Treatment of fractures of the zygomatic bone and arch depends on the duration and localization of the fracture, the direction and degree of displacement of fragments, the presence of concomitant general

disorders (concussion and contusion of the brain) and damage to others

The correct choice of the method of immobilization of bone fragments in fractures of the zygomatic bone is the key to successful treatment of this category of patients and reduces the number of complications.

Bibliography:

1. Kamalova F. R., Eshonkulov G.T. The study of the prevalence of anomalies of the dentition in the bukhara region, their early diagnosis and treatment// *Academica*: Vol. 10 Issue 1, January. Vol. 1. - 2020. - P. 61-63.
2. Kamalova F. R., Eshonkulov G.T., Radjabov A. A., Saidova M.A. The study of anomalies of maxilla-facial system of children's age in the Bukhara region// *Academica*: December. - 2019. Vol. 12. - P. 63-67.
3. Kamalova F.R. Development and evaluation of the effectiveness of the dental dental examination program for children with diabetes in adverse environmental Conditions// *Academica* 10 Issue 1, January. - 2020. Vol. 1. - P. 1364 - 1366.
4. Kamalova F.R. Elaboration and evaluation of the effectiveness of the dental examination program for children with diabetes// *Актуальные вызовы современной науки. Сборник научных трудов выпуск*. - 2020. - № 4 (48). - P. 55-56.
5. Камалова Ф.Р. Применение аутогемотромбоцитарной массы в хирургической стоматологии// *Проблемы биологии и медицины*. - 2018. - № 2,1 (101). - С 87.
6. Раджабов А.А., Раджабов А.Б., Темирова Н.Р., Камалова Ш.М. Оценка результатов первичной хейлопластики у детей с врожденной двусторонней расщелиной верхней губы и нёба// *Электронный научный журнал «Биология и интегративная медицина»*. - 2017. - № 5. - С. 36-46.
7. Rakhmatillaevna, K. F. (2020). Diagnostic value of salivator cytokines in dental diseases in children with diabetes mellitus type 1. *European Journal of Molecular and Clinical Medicine*, 7(3), 1518-1523. Retrieved from www.scopus.com
8. Rakhmatillaevna, K. F., & Torakulovich, E. G. (2020). Early diagnosis and prevention of dentoalveolar anomalies and cariogenic situation in children suffering from diabetes. *European Journal of Molecular and Clinical Medicine*, 7(3), 2468-2472. Retrieved from www.scopus.com
9. Безруков В.М., Григорьян А.С., Рабухин Н.А., Амбулаторная хирургическая стоматология. – М., 2002.- 76 с.
10. Ю.И. Бернадский. Травматология и восстановительная хирургия черепно-челюстно-лицевой области. 1999. Медицинская литература Москва – 1999 г.