



CHARACTERISTICS OF FRACTURES OF THE UPPER JAW

Ibragimov Shakhboz Ramazanovich
Tashkent State Dental Institute,
Islamov Shavkat Eriygitovich
Samarkand State Medical University

Article history:	Abstract:
Received: January 22 nd 2024 Accepted: March 14 th 2024	The article analyzes the conclusions of forensic medical examinations prescribed for fractures of the upper jaw. In all cases, fractures of the upper jaw were open, as well as single and bilateral. In unilateral fractures of the upper jaw, the fracture line passed sagittal along the palatine suture. The displacement of bone fragments in fractures of the upper jaw depends on the force and direction of impact; on the mass of the fragments themselves; on the traction force of the chewing (pterygoid) muscles. The high informativeness of both radiography and computed tomography in the examination of persons with jaw fractures was noted.

Keywords: fractures of the upper jaw, types, mechanism of formation

INTRODUCTION. In modern medical practice, injuries to the maxillofacial bones account for 2.5-4.5% of the number of injuries to all bones of the skeleton [10]. The most common injuries to the mandible are caused by blunt objects, which, according to various authors, account for 26% to 86% of all injuries to the bones of the facial skeleton. At the same time, isolated injuries of the upper jaw occur in 1.8-34% of all cases of bone damage in the maxillofacial region [1,8].

It was revealed that the most common causes of damage to the bones of the maxillofacial system are: household (64.4-95.5%), transport (3.7-13.3%) and sports (1.6-3.3%) injuries [7,12].

When analyzing the features of the mechanism of injury of mandibular fractures (565 cases), it was found that the latter were most often obtained as a result of household trauma (85.7% of observations), transport (11.3%), sports (1.4%) and industrial (1.1%) injuries [3].

In clinical practice, modern methods of computer diagnostics of jaw fractures are widely used along with radiography [4,6,11].

Although the criteria for the forensic diagnosis of the mechanism of injury of fractures of the bones of the upper and lower jaws have not been fully developed to date, morphological signs of these fractures, their nature and localization have not been established. This contributes to certain difficulties in conducting forensic medical examinations for such injuries [2,5,9].

THE PURPOSE OF THE STUDY is to establish the nature and mechanism of formation of injuries to the upper jaw.

MATERIALS AND METHODS OF RESEARCH. As a material, a retrospective analysis of 36 conclusions of

forensic medical examinations conducted in the outpatient department of the Tashkent city branch of the Republican Scientific and Practical Center for Forensic Medical Examination was carried out. Medical documents (medical histories) were also analyzed, as all the examined patients underwent inpatient treatment. Generally accepted research methods were used - macroscopic, X-ray, statistical research methods.

THE RESULTS OF THE STUDY. In all cases, fractures of the upper jaw were open, as there was a violation of the integrity of the oral mucosa.

In modern medicine, the definition is often used: fractures of the middle zone of the face, limiting it from above by a line drawn through the upper edges of the orbits, and from below by the line of closure of the dentition. The bones of the middle zone of the face have an arch-shaped structure, characterized by alternating buttresses (thickening of compact matter) with places of weak resistance.

Currently, the classification of Le Fore maxillary fractures is widely used, according to which the following types are distinguished:

1. Le Fore I (fracture at the lower level) – the fracture line of the upper jaw runs horizontally above the alveolar process of the jaw from the base of the pear-shaped opening to the pterygoid process of the main bone. In this case, the bottom of the maxillary sinus usually breaks off and the base of the nasal septum breaks;

2. Le Fort II (fracture at the middle level) – the fracture line runs transversely through the back of the nose, medial wall, bottom and lower orbital margin and then continues along the zygomandibular suture to the pterygoid process of the main bone. This fracture is often called a suborbital or pyramidal fracture, since it causes maxillofacial separation, when the upper jaw, along with



the bones of the nose, separates from the zygomatic bones and the base of the skull;

3. Le Fort III (fracture at the upper level) - the fracture line runs transversely through the back of the nose, the medial wall, the bottom and the outer wall of the orbit, through the upper-outer edge of the orbit, and then through the zygomatic arch and the pterygoid process of the main bone. This fracture is often called a subbasal fracture, since it causes complete craniofacial separation, i.e. separation of the upper jaw along with the bones of the nose and zygomatic bones from the base of the skull. Fractures according to Le Faure III, as a rule, are accompanied by a traumatic brain injury and often a fracture of the base of the skull, i.e. an open traumatic brain injury.

According to the data obtained, fractures of the upper jaw were single and bilateral 75% and 25%, respectively. The bilateral fractures were symmetrical and asymmetrical. In unilateral fractures of the upper jaw, the fracture line passed sagittally along the palatine suture.

It should be noted that the displacement of bone fragments in fractures of the upper jaw depends on the force and direction of impact; on the mass of the fragments themselves; on the traction force of the chewing (pterygoid) muscles. Usually, the upper jaw is displaced below and posteriorly so that an open bite is formed (due to closure only in the area of chewing teeth), oblique bite or false progenia.

The examination revealed the following main symptoms characteristic of a fracture of the upper jaw - injuries (bruises, hematomas, wounds) of the soft tissues of the head and face; pronounced swelling of the eyelids of both eyes, hemorrhage into the fiber around the eyes and into the conjunctiva (symptom of glasses); elongation and flattening of the middle part of the face; malocclusion, ruptures of the mucous membrane (more often along the midline of the palate), submucosal hemorrhages along the transitional fold.

According to the medical history, bleeding from the nose, mouth and ears is characteristic. Cerebrospinal fluid (a symptom of a double spot); anesthesia or paresthesia in the upper lip, nose wing and subglacial region, diplopia or double vision; pain, crepitation and "step symptom" during palpation in the bridge of the nose, along the lower orbital margin and the upper outer edge of the orbit, as well as along the zygomatic arch and in the area of the cheekbone the alveolar ridge; the mobility of the upper jaw (as a reliable sign of a fracture) is determined by palpation and is a symptom of a "cracked pot" with percussion of the teeth of the upper jaw. At the same

time, with embedded fractures of the upper jaw, its mobility may not be determined.

In some cases, with fractures of the upper jaw, the presence of concomitant pathology (combined injury) was noted. In fractures of the upper jaw (especially in fractures according to Le Faure II-III), signs of open or closed craniocerebral trauma are determined: damage to the bones of the cranial vault; fracture of the bones of the base of the skull with liquorrhea through the nose or from the external auditory passages; nausea, vomiting, dizziness; retrograde amnesia; dysfunction of cranial nerves; bradycardia; other neurological symptoms, etc.

During radiography of the upper jaw, the paranasal sinuses and zygomatic bones were examined in a straight naso-chin (semi-axial) projection with an open mouth. The most informative were radiography of the middle zone of the face in the axial projection, radiography of the bones of the facial skeleton in the direct naso-frontal projection and orthopantomogram. In fractures of the upper jaw, a violation of the integrity of bone tissue at the junction of the upper jaw with other bones of the facial skeleton was determined, as well as darkening of the maxillary sinuses due to hemosinus. In difficult cases, the information content of computed tomography of the head is high, which allows for the diagnosis of tissue damage to both the facial and cerebral cranium.

Conclusion. Consequently, the data obtained indicate that among the examined persons in forensic medical practice, men of working age mainly prevailed. In all cases, fractures of the upper jaw were open, as well as single and bilateral. The bilateral fractures were symmetrical and asymmetrical. In unilateral fractures of the upper jaw, the fracture line passed sagittal along the palatine suture. The displacement of bone fragments in fractures of the upper jaw depends on the force and direction of the impact; on the mass of the fragments themselves; from the traction force of the masticatory (pterygoid) muscles. It should be noted that both radiography and computed tomography are highly informative in the examination of persons with jaw fractures.

LIST OF LITERATURE.

1. Матос-Таранец И.Н., Калиновский Д.К., Маргвелашвили А.В. Клиническая классификация переломов мышечкового отростка нижней челюсти // Травма. – 2008. – Т. 9, № 1. – С. 111–113.
2. Мойсейчук С.Н. Экспертный анализ и обоснование тяжести вреда здоровью при повреждениях зубов и нижней челюсти.:



- Автореф...канд.мед.наук. – Москва, 2004. – 22 с.
3. Пашинян Г.А., Доборовольская Н.Е. Комплексная судебно-медицинская экспертиза дефектов оказания стоматологической помощи // Медицинское право. – 2009. - №4. – С. 3-13.
 4. Сысолятин П.Г., Дергилев А.П., Сысолятин С.П., Брега И.Н., Руденских Н.В., Бельков Л.Н. Роль лучевых методов исследования в диагностике и лечении челюстно-лицевых повреждений // Сибирский медицинский журнал. – 2010. - Том 25, № 3. - Выпуск 2. - С.11-14.
 5. Яковенко Л.Л., Яковенко О.О., Гончар Д.Г. Судебно-медицинская экспертная оценка повреждений челюстно-лицевой области // Судебно-медицинская экспертиза. - 2016. - № 2. – С.10-13.
 6. Cakir-Ozkan N., Sarikaya B., Erkorkmaz U. et al. Ultrasonographic evaluation of disc displacement of the temporomandibular joint compared with magnetic resonance imaging // J. Oral Maxillofac Surg. – 2010. – Vol. 68. – P. 1075–1080.
 7. Glendor U. Aetiology and risk factors related to traumatic dental injuries--a review of the literature. // *Dent Traumatol.* – 2009. - №25(1). – P.9-31.
 8. He D., Yang C., Chen M. et al. Intracapsular condylar fracture of the mandible: our classification and open treatment experience // J. Oral Maxillofac. Surg. – 2009. – № 8. – P. 1672-1679.
 9. Islamov Sh.E., Makhmatmurodova N.N. Improper provision of medical care in the activities of an obstetrician-gynecologist // Bulletin of the Tashkent Medical Academy. - Tashkent. - 2019. - № 1 - P. 73-76.
 10. Lam R. Epidemiology and outcomes of traumatic dental injuries: a review of the literature. // *Aust. Dent. J.* – 2016. №61 Suppl 1. - P.4-20.
 11. Makhmatmuradova N.N., Aralov N.R., Safarova M.P. Clinical and immunological characteristics of non-specific interstitial pneumonia // Scientific and methodological journal "Achievements of Science and Education". - № 13 (54). -2019. - Ivanovo. - P. 117-120.
 12. Petti S., Glendor U., Andersson L. World traumatic dental injury prevalence and incidence, a meta-analysis - One billion living people have had traumatic dental injuries. // *Dent. Traumatol.* – 2018, Apr. - №34(2). – P.71-86.