

## AGE-RELATED FEATURES OF JAW THINNING AND FRACTURES

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**Annotation:** Based on the analysis of the conclusions of forensic medical examinations carried out regarding jaw fractures, it was found that they more often occurred due to domestic trauma (a fight) and sharply when falling from a height.

**Key words:** jaw fractures, types, mechanism of formation, forensic medical examination.

The most typical fracture lines are: neck of the articular process, angle of the mandible, mental foramen, midline. When impacted by a blunt hard object in the area of the lower jaw, the mechanism of displacement of fragments under the influence of the traction force of the masticatory muscles is characteristic. In all cases, the fractures of the upper jaw were open, as well as unilateral and bilateral. In case of unilateral fractures of the upper jaw, the fracture line ran sagittally along the palatal suture. The displacement of bone fragments during fractures of the upper jaw depends on the force and direction of the blow; from the mass of the fragments themselves; from the traction force of the masticatory (pterygoid) muscles. Currently, damage to the maxillofacial bones accounts for 2.5-4.5% of the number of injuries to all skeletal bones [9]. In this case, the most common injuries to the lower jaw are caused by blunt objects, which, according to various authors [9, 12, 14, 18], account for from 26% to 86% of all injuries to the bones of the facial skeleton. Also, isolated injuries of the upper jaw occur in 1.8-34% of all cases of injuries to the bones of the maxillofacial area. It has been established 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%) trauma. G.A. Pashinyan et al. when analyzing the characteristics of the mechanism of injury of fractures of the mandibular bones (565 cases), it was found that the latter were most often obtained as a result of domestic trauma (85.7% of observations), transport (11.3%), sports (1.4%) and industrial (1.1%) injuries. In modern clinical practice, along with radiography, modern methods of computer diagnostics of jaw fractures are widely used.

It should be noted that to date, the criteria for forensic medical diagnosis of the mechanism of injury of fractures of the bones of the upper and lower jaws have not been fully developed; the morphological signs of these fractures, their nature and location have not been established. This contributes to the emergence of certain difficulties when conducting forensic medical examinations of such injuries.

According to the data obtained, blunt trauma of the jaws was determined in all studied cases. Among them, 28 men (77.78%) aged from 16 to 60 years, 8 women (22.22%) aged from 18 to 52 years. At the same time, fractures of the lower jaw accounted for about 66.67% of all fractures of the facial bones. According to the victims and the circumstances of the case, they most often received a fracture of the lower jaw in a fight and rarely when falling from a height. The following types of mandibular fractures were identified: open (16.67%) and closed (83.33%); complete (77.78%) and incomplete (22.22%); single (72.22%), double (19.44%), multiple (8.33%); unilateral (80.56%) and bilateral (19.44%); linear (86.11%) and splintered (13.89%); with displacement of fragments (22.22%) and without displacement (77.78%); direct (88.89%) and indirect (11.11%). There was a violation of the integrity of the oral mucosa and skin with open fractures of the lower jaw, that is, all fractures in the dentition line were open. A bilateral fracture of the mandible was characterized by the presence of two fracture lines on opposite sides. In case of an incomplete fracture (crack), the integrity of the cortical plate on one side was observed. The most typical fracture lines are: neck of the articular process, angle of the mandible, mental foramen, midline.

In this case, the fracture of the lower jaw was accompanied by injury to the soft tissues of the maxillofacial area (abrasions, bruises, hematomas, wounds). Sometimes, due to severe swelling, it was difficult to diagnose fractures of the lower jaw. Pain, stepping stones, and a symptom of "crepitus", detected by palpation along the edge of the lower jaw, a symptom of indirect load. When examining the oral cavity, malocclusion, ruptures in the mucous membrane of the alveolar process, and tooth mobility were revealed. X-rays in direct (nasofrontal) and lateral projections reveal a violation of the integrity of the bone tissue of the lower jaw. determined radiographically. It should be noted that fractures in the area of the condylar process of the mandible were detected using tomography or zonography of the temporomandibular joints, sometimes using computer diagnostics.

When impacted by a blunt hard object in the area of the lower jaw, the mechanism of displacement of fragments under the influence of the traction force of the masticatory muscles is characteristic. In particular, with a unilateral fracture of the jaw, the larger fragment moves down and inward, and the smaller one moves inward and towards the fracture. With bilateral fractures in the chin or in the area of the body of the lower jaw, the central fragment moves inward and downward, which can be accompanied by the development of serious complications for the life of the victim (retraction of the root of the tongue, development of asphyxia). Fractures of the upper jaw in all cases were open, as there was a violation of the integrity of the oral mucosa.

According to the results obtained, fractures of the upper jaw were unilateral and bilateral, 75% and 25%, respectively. Bilateral fractures were symmetrical and asymmetrical. In case of unilateral fractures of the upper jaw, the fracture line ran sagittally along the palatal suture. It should be noted that the displacement of bone fragments during fractures of the upper jaw depends on the force and direction of the blow; from the mass of the fragments themselves; from the traction force of the masticatory (pterygoid) muscles. Typically, the upper jaw moves lower and posteriorly so that an open bite is formed (due to closure only in the area of the chewing teeth), an oblique bite or false progeny. Upon examination, the following main symptoms characteristic of a fracture of the upper jaw were revealed: damage (bruises, hematomas, wounds) to the soft tissues of the head and face; severe swelling of the eyelids of both eyes, hemorrhage into the tissue around the eyes and into the conjunctiva (a symptom of glasses); lengthening and flattening of the midface; malocclusion, ruptures of the mucous membrane (usually 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 typical. Liquorrhea (double spot symptom); anesthesia or paresthesia in the upper lip, wing of the nose and infraorbital region, diplopia or double vision; pain, crepitus and "step symptom" upon palpation in the area of the bridge of the nose, along the lower orbital edge and the upper outer edge of the orbit, as well as along the zygomatic arch and in the area of the zygomatic-alveolar ridge; mobility of the upper jaw (as a reliable sign of a fracture) determined by palpation and the symptom of a "cracked pot" upon percussion of the teeth of the upper jaw. Moreover, with impacted fractures of the upper jaw, its mobility may not be determined. When radiography of the upper jaw, the paranasal sinuses and zygomatic bones were examined in a direct nasomental (semi-axial) projection with the mouth open. The most informative were radiography of the midface in the axial projection, radiography of the bones of the facial skeleton in the direct nasofrontal projection and orthopantomogram. In case of fractures of the upper jaw, a violation of the integrity of the bone tissue was determined at the junction of the upper jaw with other bones of the facial skeleton, as well as darkening of the maxillary sinuses due to hemosinus. In complex cases, computed tomography of the head is highly informative, which makes it possible to diagnose tissue damage to both the facial and cerebral skull.

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