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Modern Views in The Treatment of Mandibular Fractures

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Annotation: In recent decades, the problem of mandibular fractures in trauma patients has become more relevant [1,2]. Against the background of industrialization of society, increase in traffic accidents, human and industrial accidents and public crimes, specialists of various specialties appear: surgeons, traumatologists, neurosurgeons, resuscitators and maxillofacial joint injuries. surgeons [3-6]. Surgical planning and choice of treatment. In cases where bite and occlusion are possible, conservative tactics can be used.

Key words: mandibular fracture, "semi-rigid" fixation,

Materials and methods: The main conservative method of treatment is intermaxillary correction and removal of intermaxillary teeth for various jaws. The essence of the method is the reverse fixation of the lower jaw (immobilization of the lower jaw). This method is also suitable as a final method for the treatment of mandibular fractures or as an intermediate stage of osteosynthesis, therefore, when diagnosing multiple mandibular fractures, strict surgical methods of treatment are generally preferred. bone fragments and early functional loading. The absence of dentures allowed patients to practice better oral hygiene, which is especially important for internal access. Screw fixation is a very fast method of intermaxillary fixation, unlike wire splitting, and uses two points, sufficient for short-term correction of the dentition. The points can be between the first and second incisors, between the first premolar and the canine. For greater stability, screws can be placed between the central incisors and behind the first molars. If long-term immobilization is planned, the screw should be placed bilaterally through the attached tooth and root spaces. Fixation of the screw in the area of the movable mucosa should be avoided due to the risk of traumatic injury and infection of the screw head. After placing the screws around, you need to glue the wire loops. For greater stability, wire loops can be placed diagonally above the screws or replaced with rubber bands. By fixing the fragments in the correct anatomical position using titanium miniplates, the time of immobilization of the lower jaw can be reduced to the complete absence of intermaxillary fixation [7]. In our opinion, after osteosynthesis of multiple fractures of the lower jaw, the functional load on the lower jaw should be gradually increased and corseted for at least 7 days. Upon admission of patients with mandibular fractures indicated for osteosynthesis, it is not always recommended to fracture both jaws. If the patient is ready for day surgery, he can be limited to temporary immobilization of the lower jaw, and in the postoperative period, short-radius intermaxillary braces or internal screws with rubber traction can be used. The disadvantage of surgical techniques for multiple fractures is the need for extensive skeletonization of the lower jaw, violation of the trophism of the bone tissue at the fracture site, especially with multi-comminuted fractures and neurovascular injuries. tie the mandibular canal. An individual decision was made on the basis of the clinical and radiological picture of

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the fracture, taking into account the time elapsed since the injury and the general somatic condition of the victim. The surgical treatment plan is often adjusted based on the intraoperative picture. The main form of anesthesia in the surgical treatment of mandibular fractures is nasotracheal anesthesia, which allows the surgeon to enter the fracture line through the mouth and control dental treatment during surgery. If strong local anesthesia or oral endotracheal anesthesia is indicated, this may be an alternative. Sequences and Approaches One of the important factors in planning surgery for multiple mandibular fractures is the question of which sequence to follow. The principle of surgical treatment of multiple fractures is "periphery to center". Once stability is achieved in the distal segment, the next anterior fracture can move. It is better to start with the formation of osteosynthesis, then the fracture of the branch, angle and body. We recommend completing the operation at the site of the mandibular submental fracture, because when placing the fragments, it is often necessary to remove and rotate the large fragment with previous osteosynthesis in large (fragmentary) jaw segments, with respect to the articular processes) can adversely affect the stiffness of the joint. Fractures in the pubic process are almost always closed, and access is chosen externally to ensure cleanliness of the surgical wound. If difficulties are anticipated with internal examination of comminuted fractures or mandibular defects, regardless of the location of the fracture, we recommend prepositioning the fragments with a good anatomical determination. Rigid fastening using two standard sub-plates is the method of choice in our opinion. Plates are applied above the fracture line or below the root or between the roots of the front tooth. Another plate is placed on the lower edge of the jaw through an external or internal access using a trocar. The most common approach to choosing the number of miniplates for mandibular fracture repair is based on the principles of Champi et al., who studied the biomechanics of mandibular fractures and developed a method of fracture repair mainly through internal access [8]. This method provides a "semi-rigid" fixation of the body parts and the angle of the mandible, but allows to achieve good results, taking into account the characteristics of the location of the plate and minimal surgical trauma. Least complicated compared to rigid mounting with two plates using external entry [9] or internal [10]. The holes for the screws are drilled closer to the outer part of the plate connection hole than the fracture line, so that compression of the parts at the fracture site is achieved when the screw head is deepened into the milling chamber. Special systems of titanium compression screws and titanium nickelide (Medvedev)-based metal structures can be used to achieve component compression. Localization of fractures Condylar fractures. Unlike tooth-related mandibular fractures, condylar process fractures do not pose a significant risk of infection of the oral flora at the same time as the fracture. Also, without pulling the chin area with the teeth, the shape of the back is not affected, so this is an occlusion. The fracture varies due to the location of the dental arch rather than individual tooth fragments such as fractures of the symphysis and body. After interpreting the CT scan, it is possible to determine whether the fracture is intra-articular or intra-articular. Open treatment allows early active mobilization of the mandible to ensure normal function. However, as with any surgical treatment of fractures, there is a risk of facial nerve damage and postoperative scarring. The choice of the most appropriate surgical approach for subsequent visualization of an articular process fracture is determined by the location and type of fracture. Most fractures of the buccal process were localized in the cervical region, so the submandibular approach was more often used. The

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incision line begins 1 cm below the auricle and extends approximately 3 cm posterior to the mandibular ramus. After visualizing the bone fragments, their skeletonization is performed towards the edge of the mandible. Due to the tension of the pterygoid ligament, the fracture segments often overlap with the tension of the lateral pterygoid muscle, so the distal segment is pulled down using Mikulich forceps to fix the fragments and restore the anatomically correct shape of the mandible. As the distal segment recedes downward, the proximal segment can be manipulated to reduce the fracture. As the condyle exits the glenoid fossa, the proximal segment should be directed upward and inserted into the fossa. One method of vertical elevation of the proximal segment is manual manipulation using a combination of grasping and positioning instruments. The more bone there is to manipulate, the easier it is to place. The condyle repositioning maneuver is medial traction to prerotate the fracture surface of the distal segment so that the distance and angle will better match the displaced proximal segment. When the skull is removed from the fossa, the head is displaced anteriorly, medially, and medially, meaning that this process requires posterior, lateral, and superior movement. Disadvantages of the submandibular approach are the limited exposure of the articular space of the mandible, as well as the difficulty of maintaining the proximal segment in the case of repositioning of the skull. For high fractures of the buccal process, the former approach is the method of choice. The incision is made in the temporal zone, 2-3 cm above the level of the auricle, passing to the anterior region, reaching the eardrum, and entering the tragus between the cartilaginous surface.

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