THE NEW APPROACH TO TREAT PEDIATRIC MANDIBULAR BODY FRACTURES

ABSTRACT
In this study a total number of 15 patients with a mandibular fracture are included. The age of the patients is less than 16 years old. This study was done in the period of 2010-2018.

A two groups were created based on the trauma location: Isolated mandibular traumas (mono and bilateral fractures) were 8 patients and 7 patients were diagnosed as comminuted mandibular fractures. The methods of treatment was chosen to be either non surgical (orthodontic + orthognatic screws and IMF) or combined with a surgical treatment. The laboratory tests and radiology was done to all patients. Radiology included OPG and 3D computer tomography. These patients were examined by pediatrician, pediatric surgeon, neurotraumatologist and anesthesiologist.

The treatment was planned individually based on the age and the fracture location. Three methods of treatment were used: Non surgical, surgical and combined. Out of 15 patients 3 patients were treated non surgically (orthodontic). The algorithm of non surgical treatment: it is important to do the reposition with orthodontic device immediately after trauma for two weeks I class of rubber rings and next step will be placing III class , III class rubber rings and cross midline should be repositioned with rings as well. In case if only 10 or less teeth are present orthognatic screws should be placed to stabilize. As a result of conservative treatment, the mean deviation was 6.0mm before treatment, 0.3mm after 3 months of treatment, and no deviation was observed 6 months later. Only one surgical treatment was performed in 10 patients. Treatment consisted of osteosynthesis surgery with a titanium mini plate. The median deviation in these infants was 4.4 mm before treatment, 0.9 mm at 3 months after treatment, and 0.8 mm after 6 months.

2 out of 15 patients underwent combined surgical and orthodontic treatment. This treatment includes orthodontic fixation of maxillary and mandibular area with rubber rings. At the time of admission, the average deviation was 2 mm before treatment, 1.5 mm 3 months after treatment, and 0.5mm after 6 months. In each of the three treatment groups, the condition of the condyle – articular eminence and the stages of treatment were controlled by the same doctor.

Conclusion. When comparing surgical and conservative methods in our study, it was decided that, depending on the clinical case, a conservative method can be regarded as a major method of choice. Currently, there are many ways to treat jaw fractures in children. Nevertheless, the number of complications is small. The superiority of one method over another method allows it to be applied in the standard way in every clinical setting. Proper and timely treatment can lead to severe consequences in the growing organism.

There is also no complex treatment protocol for age criteria, type of fracture, and localization of jaw fractures. Taking these criteria into consideration, the standard protocol is being developed.

Keywords: Pediatric mandibular body fractures, conservative treatment, surgical treatment.
Introduction. The fractures of the skeletal bones in children are less common than in adults. Jaw fractures are most commonly seen in children in the age of 7-14 years old, with a prevalence in boys. The cause of the fractures are different, however the most popular among them are high altitudes, motor accidents, sports and street trauma [1-3]. Along with these, animal bites are also observed in clinical practice [4, 8, 9]. Jaw fractures are sometimes seen in children with craniocerebral trauma, fractures of other facial skeletal bones, and soft tissue injury [1-3]. The small size of the jaw, the location of growth zones, the presence of a large number of dairy teeth, and the permanent teeth might be a risk factors for the treatment of pediatric fractures and may lead to developmental anomalies. The preservation of the jaw growth zones during the treatment is important for the future function and development of the skeleton. Restoration of jaw integrity in children has not
been the early recovery of single function and plays an important role in the development of the skull-skeleton in the future [5, 6, 9]. In addition, it should be noted that the treatment should be performed on time, by taking into account physiological differences between children and adults. Because rapid pacing of bone fragments in pediatric groups requires immediate treatment of children and the recovery process is at a great phase [7, 10].

The treatment of facial traumas remains one of the actual problems of modern dentistry and facial surgery. Pediatric fractures are leading to a major complications, because of the development of the jaw in the growing organisms adversely affects the traumatic pathology, and the direct effect of the jaw's growth zones results in disorders of development [11,12].

**Materials and methods.** In this study a total number of 15 patients with a mandibular fracture are included. The age of the patients is less then 16 years old. This study was done in the period of 2010-2018.

Three girls (20 %) and twelve boys (80 %) were among these fifteen patients. The ethiological factor was falls, motorcyclists traumas, animals bite, injuries during traffic accidents and unknown reasons. A two groups were created based on the trauma location: Isolated mandibular traumas (mono and bilateral fractures) were 8 patients and 7 patients were diagnosed as comminuted mandibular fractures.

The methods of treatment was chosen to be either non surgical (orthodontic + orthognatic screws and IMF) or combined with a surgical treatment. The laboratory tests and radiology was done to all patients. Radiology included OPG and 3D computer tomography. These patients were examined by pediatrician, pediatric surgeon, neurotraumatologist and anesthesiologist.

**Clinical case.** A girl in the age of 8, was admitted to our hospital with a facial asymmetry, mandibular deviation (3-4 mm to the left side). malocclusion, right side paresthesia, and positive Vensan symptom. As per the history it was found that a patient fall down three months ago. As a result of the trauma patient had comminuted right side mandibular body fracture and displaced left sided condylar head fracture (picture 1). Osteosynthesis with mini plates was performed to a patient in a different clinic. 3 months later due to unsuccessfull treatment the patient was admitted to our hospital. During the clinical examination it was found that the patient has paresthesia, malocclusion, left sided deviation during the mouth opening, and bone expose (picture 2). During the palpation there was a movement of a fragments, the position of the miniplates was incorrect, and a resorption of the bone in the fragment line was noticed, an injury was done with a screw to the adjacent teeth. Left side resorbtion of condylar head is also noticed (picture 3).
Based on the age, history and fracture location it was decided to remove the miniplates as the emergy phase. Fracture reposition was made and a mini plates were placed. Second step was stabilizing the occlusion and the midline with orthognatic screws and elastics were fixed for 6 weeks. A physiotherapy was prescribed for a patient to treat the paresthesia. After three month of treatment the deviation was reduced up to (0,5mm), there was no facial assymetry and the paresthesia was much less (picture 4). The patient was also advised to start aMyogymnastics. One year later malocclusion wasn’t noticed, there was no deviation and the paresthesia disappeared. The feeling was present in the lip (picture 5).

Results and discussion:
The fractures were divided in this study as per bellow list:
- Unilateral mandibular body fracture - 6 patients;
- Bilateral mandibular body fractures - 2 patients;
- Mandibular body fractures and condyle fractures - 3 patients;
- Mandibular body and mental fracture - 3 patients;
- Angular and mandibular body fracture - 1 patients.

The treatment was planned individually based on the age and the fracture location. Three methods of treatment were used: Non surgical, surgical and combined. Out of 15 patients 3 patients were treated non surgically (ortho,orthognatic screws and IMF ). The algorithm of non surgical treatment: it is important to do the reposition with orthodontic device immediately after trauma for two weeks I class of rubber rings and next step will be placing III class, III klass rubber rings and cross midline should be repositioned with rings as well. In case if only 10 or less teeth are present orthognatic screws should be placed to stabilize. As a result of conservative treatment, the mean deviation was 6.6mm before treatment, 0.3mm after 3 months of treatment, and no deviation was observed 6 months later. Only one surgical treatment was performed in 10 patients. Treatment consisted of osteosynthesis surgery with a titanium mini plate. The median deviation in these infants was 4.4 mm before treatment, 0.9 mm at 3 months after treatment, and 0.8 mm after 6 months.

2 out of 15 patients underwent combined surgical and orthodontic treatment. This treatment includes osteosynthetic fixation of maxillaryandibular area with rubber rings. At the time of admission, the average deviation was 2 mm before treatment, 1.5 mm 3 months after treatment, and 0.5mm after 6 months. In each of the three treatment groups, the condition of the condyle – articular eminence and the stages of treatment were controlled by the same doctor.

Conclusion. When comparing surgical and conservative methods in our study, it was decided that, depending on the clinical case, a conservative method can be regarded as a major method of choice. Currently, there are many ways to treat jaw fractures in children. Nevertheless, the number of complications is small. The superiority of one method over another method allows it to be applied in the standard way in every clinical setting. Proper and timely treatment can lead to severe consequences in the growing organism.

There is also no complex treatment protocol for age criteria, type of fracture, and localization of jaw fractures. Taking these criteria into consideration, the standard protocol is being developed.

REFERENCES
4. Komelyagin D.Yu., Dergachenko A.V., Dubin S.A., Petukhov A.Y. i dr. Lechenie detey s perelomami kostey chelyustno-litsevoy oblasti posle akusov zhivotnykh. [Treatment...


12. Bragina V. G., Gorbatova L. N. МІОФАСЦІАЛЬНОМУ БОЛЬОВОМУ СИНДРОМУ ПРИ МІОФАСЦІАЛЬНОМУ БОЛЬОВОМУ СИНДРОМІ ОБЛИЧЧЯ

DOI 10.35220/2078-8916-2020-35-1-79-86
УДК 616.31+617-089
С.А. Гулюк, С.А. Шнайдер, о.мед.н.
Одесский национальный медицинский университет

КЛИНИЧНА ХАРАКТЕРИСТИКА ТРИГЕРНИХ ЗОН ЖЕВАТЕЛЬНОЇ МУСКУЛАТУРИ ПРИ МІОФАСЦІАЛЬНОМУ БОЛЬОВОМУ СИНДРОМІ ОБЛИЧЧЯ

М'язовий спазм виникає в результаті надмірного розтягування, тригалого скорочення, або стомлення м'язів і становить основу міофасціального болючого синдрому обличчя (МФБСО). На першому етапі в м'я- зі виходить залізник напруги, а потім стабільний локальний гіпертонус. Локальні гіпертонуси сприяють енергетичні розладі м'язів, перетворюються в гліцерині золоті точки (Т.Т). На обличчі ТТ вия- вляються частіше в жувальних м'язах, крім того, атрофічному, нейральному і міофасціальному крізьміжливому м'язах.

Основним методом вивчення тригерних точок є клінічна практика, як і в діагностиці міофасціального

С.А. Гулюк, С.А. Шнайдер
Одесский национальный медицинский университет

КЛИНИЧЕСКАЯ ХАРАКТЕРИСТИКА ТРИГЕРНЫХ ЗОНО ЖЕВАТЕЛЬНОЙ МУСКУЛАТУРЫ ПРИ МИОФАСЦИАЛЬНОМ БОЛЕВОМ СИНДРОМЕ ЛИЦА

Мышечный спазм возникает в результате чрезмерного растяжения, длительного сокращения, или утомления мышц и составляет основу миофасциального