ANALYSIS OF TRAUMA IN THE MIDDLE PART OF THE FACE OVER THE PAST FIVE YEARS

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Abstract.

Introduction. The structure of traumatic injuries in the middle part of the face recorded in the last five years was analyzed in the clinic of maxillofacial surgery, on the basis of statistical analysis of medical history. The obtained data allowed prospects for improving the provision of medical care to this group of patients. **Materials and methods.** Statistical analysis of the medical history of patients with traumatic injuries in the middle part of the face by sampling and statistical research methods was conducted**. Results and discussion.** All injuries were divided according to their nature, etiology, age, gender and nosology. The frequency of injury, its type and complications were analyzed. Also determined were the main treatments for this group of patients. **Conclusions.** The majority of patients are men, the main causes being criminal, traffic and domestic injuries. The methods of treatment for this group of patients need to be improved both at pre-hospital level and during patient's hospitalization.

Keywords: *middle part of the face, fracture, upper jaw, zygomatic complex, medical care, treatment.*

1. INTRODUCTION

One of the leading causes of the poor health of the population in our country is the high prevalence of injuries, which in most cases cause temporary disability [1,2]. Given that the prevalence of injuries is highest among men of working age, who are most actively involved in the creation of material values, then, of course, the losses suffered by our country are significant and not always compensable.

As a rule, among fractures of the facial skeleton, the proportion of injuries of the middle part of the face (MPF) ranges from 19.0 to 32.0%. At the same time, injuries to MPF are often accompanied by massive destruction [1,2,3-5]. Considering the topographical, anatomical and functional features of MPF, the relationship with other parts of the skull show that injuries are often multiple and combined in nature, requiring a comprehensive approach for treatment and rehabilitation [1,6].

This data indicates the need to develop medical and social measures aimed, on one hand, at an effective organization of medical care for patients with traumatic injuries of the maxillofacial area (MFA), to reduce mortality caused by severe traumatic facial injury and, on the other, at implementing medical and social rehabilitation measures primarily among victims, to restore their health, permitting their readaptation to the social living conditions and improving their quality of life.

The **aim** is to analyze the structure of bone injuries in the middle part of the face over the past five years.

The **object** of the study was a representative group of patients treated in the Maxillofacial department of the Clinical Hospital № 12 in Kyiv and the rehabilitation measures in outpatient facilities of the city from 2016 to 2020.

The choice of the city of Kyiv, the largest administrative, political, economic and cultural center of Ukraine, is not accidental. Cities with large populations tend to have a well-developed, diversified economy, concentrating huge production capacities, high population density and unfavorable environmental situations, a faster rate of change in social life, more intense pace of life and increasing nervous and emotional stress, limited territory for intercity recreation, remoteness of the place of residence from the place of work, intensive use of surface and underground transport, accumulation of transport fatigue in residents, accumulation of traffic and human flows. All these, of course, are reflected in the level of injuries among the population, including fractures of the facial skeleton.

This dictates the need for a detailed study of the factors causing traumatic injuries, of the current state of medical and social rehabilitation of patients with fractures of MPF, following the example of city institutions that provide hospital and outpatient care, both as emergency and previously planned.

2. MATERIALS AND METHODS

he complex nature of this study, conducted through continuous and sample statistical observation, required several objectives of scientific analysis. Continuous statistical analysis considered the medical history of patients with MPF fractures, and the medical institutions that provide medical care to patients with traumatic injuries of MPF in Kyiv.

The sample method was used to study the nature of traumatic injuries, lifestyle and socio-psychological characteristics of patients with MPF trauma, as well as to determine the effectiveness of medical and social rehabilitation in this category of patients.

3. RESULTS AND DISCUSSION

Between 2016 and 2020, in the overall structure of traumatic injuries of the facial skull, fractures of the middle part of the face represented 33% (upper jaw - 8%, zygomatic complex - 23%, nasal bones - 2%). During this period, 215 victims with traumatic injuries were hospitalized, the number of men (149 patients) predominating over women (66 patients). The mean age of patients was 34.5 ± 3.5 years. The predominant age was 24-47 years - 55%, some patients had ages between18 and 24 years - 25%, patients aged 48 to 60 representing 12%, those under 18 years - 3%, and people over 61 years - 5 %, most patients being of working age. The main causes of MPF bone fractures were: criminal (32%), transport (29%), domestic (21%), sports (11%) and industrial injuries (7%).

147 (68%) victims were treated with fresh fractures, 42 (20%) with old fractures, and 26 (12%) with incorrectly consolidated ones.

Among all traumatic injuries of MPF, three main groups were identified, namely: I-st group - fractures of the upper jaw, 61 patients (28%), II-nd - fractures of the zygomatic complex, 135 patients, respectively 63% of the total injuries and III - fractures nasal bones, 19 patients (9%).

The distribution of MPF fractures according to type, etiology of injury and duration is presented in Table 1 and graph (Fig. 1).

Table 1. Distribution of MPF fractures by type, etiology and duration of injury

	Type of injury					Groups of patients			Total %
	Domestic	Criminal	Transport	Industrial	Sports	I 68 (147)	II 20 (42)	III 12 (26)	
	21	32	29	7	11				
Fracture of the upper jaw	2	11	5	2	3	18	7	3	28 (61)
Fracture of the zygomatic complex	17	20	21	5	5	48	11	4	63 (135)
Fracture of the nasal bones	2	1	3	0	3	2	2	5	9 (19)

In 56 patients with MPF fractures the injury was isolated, and in 159 cases the fracture was combined with injuries of other anatomical areas, in particular with a fracture of the mandible in 87 clinical cases, with concussion - in 65 clinical cases, with brain contusion - in 7 cases. Thus, MPF bone fractures are usually accompanied by traumatic brain injury of varying severity [2,4,7].

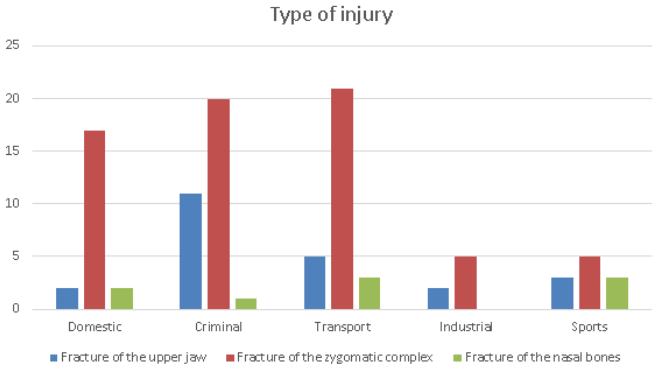

Fig. 1. Distribution of MPF fractures by type and etiology of injury

Thus, for each patient admitted with MPF fractures, 1 to 6 additional injuries of other anatomical areas are present. In 21.3% of cases there was damage to 2 anatomical areas, in 40.7% - from 2 to 5 and in 38.0% patients - damages to more than 5 anatomical areas. It was found that each examined and hospitalized patient with a fracture of the upper jaw (UJ) has 3.6 additional injuries in other parts of the body (Table 2, Fig.2).

Table 2. Types of additional injuries most common in MPF bone damage

Type of injury	% Damage
Concussion	35.2
Bruises, hematomas, facial soft tissue wounds	30.4
Brain contusion	10.1
Damage to the eyeball	9.3
Fracture of the lower jaw	7.7
Tooth trauma	7.3
Total	100

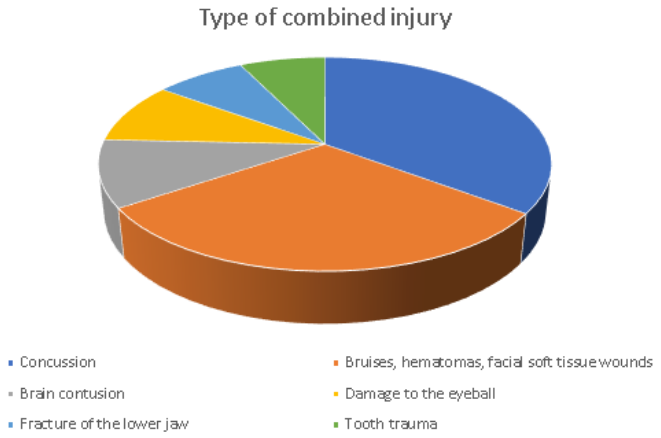

Fig. 2. Graphic representation of the distribution of additional injuries

The study of case histories revealed typical approaches for the treatment of patients with traumatic MPF bone injuries. [8-10]

Among the surgical treatment of maxillary fractures, osteosynthesis techniques using titanium mini-plates were most often used. For fractures of a zygomatic complex, this method was applied in cases of multifragmentary fractures. In some situations, the maxillary sinus was revised on the side of the injury and, in other clinical cases, Limberg's reposition was performed. Drug therapy included antibacterial, anti-inflammatory and symptomatic therapy. Medicines were also prescribed to correct disorders of the neuromuscular system (post-traumatic neuropathy, pain syndromes). During postoperative rehabilitation, some physiotherapeutic methods of treatment were also prescribed, such as: magnetic therapy, laser therapy, electrophoresis with milgama, etc.

4. CONCLUSIONS

Analysis of the injury of the middle part of the face for the last five years allowed the following conclusions: 1. The majority of patients are men (69%). 2. The main causes are criminal, traffic and domestic injuries. 3. The methods of treatment of this group of patients are traditional and need to be improved, both at pre-hospital level and during patient's stay in the hospital.

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