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Treatment of Maxillofacial Fractures and Assessment of The Quality of Life of Patients with Combined Maxillofacial Trauma

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Abstract

This article presents the scientific aspects of maxillofacial surgery worldwide, including aspects of concomitant traumatic brain injury. It also discusses modern surgical methods for the treatment of concomitant maxillofacial injury. A differentiated approach to the treatment of concomitant maxillofacial injury is explored. Quality of life and pain are assessed using questionnaires. The effectiveness of surgical treatment and its impact on patients' quality of life are determined.

Keywords: Developmental history, algorithm, questionnaires, scales, combined maxillofacial and craniocerebral trauma, differentiated approach.

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1. Introduction

According to the World Health Organization (WHO), approximately one million people die each year as a result of road traffic accidents (RTA), and 15–20 million suffer injuries of varying severity [6,7]. In developing countries, RTAs are the leading cause of maxillofacial injuries [7,8,9]. However, in high-income countries, the most common causes of both TBI and maxillofacial injuries (MFI) are domestic injuries, violence [1,7,9,12], falls from standing height, and catastrophes [13]. Traumatic brain injury (TBI), due to its high prevalence, is a widespread and significant health and social issue, with high patient mortality and disability rates (global averages are 2-4 per 1000 population per year), severe complications, and consequences, including permanent or temporary disability, imposing financial costs on families, society, and the state [6,7,10]. Adverse consequences of mandibular fractures include the development of complications, primarily of inflammatory origin. Their incidence is 35-58%. A large number of mandibular osteosynthesis methods based on the use of fixation devices have been developed to prevent complications [2,3,5,13]. According to the literature, CT allows for the visualization of bones and soft tissues in any plane without summation. Multiplanar analysis of isotropic images obtained using MSCT allows for the diagnosis of both displaced and non-displaced fractures. Moreover, MSCT is more sensitive than orthopantomography in diagnosing fractures of the angle, branches, and condyle of the mandible [10,11]. In the treatment of patients with moderate to severe brain contusions, their continuous

hospitalization with dynamic monitoring using MSCT or MRI is essential to monitor the condition of the brain [11,14]. Quality-of-life assessment is increasingly being used in clinical medicine because it allows for the study of the impact of the disease on various components of the patient's health and the identification of additional benefits or drawbacks of the treatment. The introduction of advanced quality-of-life assessment methods into clinical practice has provided access to important information on aspects of patient functioning. These data can be used in the development of treatment and rehabilitation programs and monitoring the patient's condition during treatment [4]. The goal is to improve treatment outcomes for patients with combined maxillofacial trauma by applying modern methods of comprehensive diagnostics, differentiated treatment strategies, and quality-of-life assessment.

2. Methods

We analyzed data from 234 patients with combined maxillofacial injuries treated in the Maxillofacial Surgery Department of the Tashkent Medical Academy of the Ministry of Health of the Republic of Uzbekistan between 2019 and 2024. Our differentiated approach to treatment tactics, conservative and surgical treatment, was based on the clinical presentation, objective instrumental examination findings, the severity of neurological signs, and assessment of patient consciousness using the Glasgow Coma Scale and other methods. Quality of life was assessed using the Euro Qol-5D and the Visual Analogue Scale (VAS) to determine pain intensity, both of which had undergone a standard validation procedure. After diagnosis, all patients underwent surgery, including colostomy, various anastomoses, and other reconstructive procedures.

3. Results and Discussion

All 234 patients with combined maxillofacial trauma were divided into two groups based on the severity of the injury. The first group included 104 (44.4%) patients with moderate-severity injuries who received conservative treatment of the lower maxillofacial region and moderate brain contusions. The second group included 130 (55.5%) patients with severe injuries and severe brain contusions who primarily underwent surgical treatment of the lower and middle maxillofacial region. We assessed the severity of patients with combined maxillofacial trauma upon admission to our hospital emergency department using the Glasgow Coma Scale and other scales and questionnaires that determine the degree of injury for a differentiated approach to treatment.

Our differentiated approach to tactics, conservative and surgical treatment, was based on the clinical presentation, objective instrumental examination findings, and patient age and gender characteristics. It should be noted that patients often sustained injuries from falls from low heights at home: in the bathroom, from a chair, sofa, bed, cot, windowsill, stairs, or while riding a bicycle. In the first group of patients with combined maxillofacial trauma, the overwhelming majority (60.7%) were at home (falls from standing height) and, among these, falls from standing height were the most prevalent (61.1%). Criminal injuries were recorded in 12.4%, and road traffic accidents in 15.4%. The most common cause of combined maxillofacial trauma was home trauma – 142 (60.7%); Road traffic accidents (RTA) – 36 (15.4%); criminal injuries were recorded in 29 (12.4%); industrial injuries accounted for 14 (6.0%); and 13 (5.5%) patients were admitted with an unknown cause. According to our data, the largest number of patients had domestic injuries, accounting for more than half of all patients (60.7% and 61.1%, respectively), followed by RTAs (15.4%), criminal injuries (12.4%), and unknown causes of injury in 5.5% of cases.

Of the total 234 patients, the overwhelming majority were conscious and moderately obtunded, accounting for 168 (71.8%), while the remaining fifth (63 (26.9%) were in severe condition, ranging from profound obtundation to varying levels of coma. In the case of domestic injuries, the proportion of patients in extremely severe condition increased to 3 (1.3%). According to our study data, a significant proportion of patients with combined maxillofacial injuries were working-age men (184, 78.6%), which is a pressing issue from both social and economic perspectives.

Our observations revealed that the same patient could have a combination of two or more somatic diseases, particularly cardiovascular diseases; these patients received additional courses of treatment after examination by a specialist. Examination of their somatic status revealed that among the 234 patients, 94 (40.2%) had somatic pathology, manifested as arterial hypertension (30, 31.9%), neurological pathology (31, 32.9%), and coronary heart disease (7, 7.4%). Seven (7.4%) cases were treated in gastroenterology, seven (7.4%) in ENT organs, seven (7.4%) in endocrinology, three (3.2%) in oncology, two (2.1%) in ophthalmology, and one (1.1%) in renal failure. During our examination, we noted concomitant somatic diseases in patients, which undoubtedly influenced the course of combined maxillofacial trauma. Thus, of the 234 patients, 94 (40.2%) had concomitant somatic pathology, either isolated or in

combination (see Fig. 1).

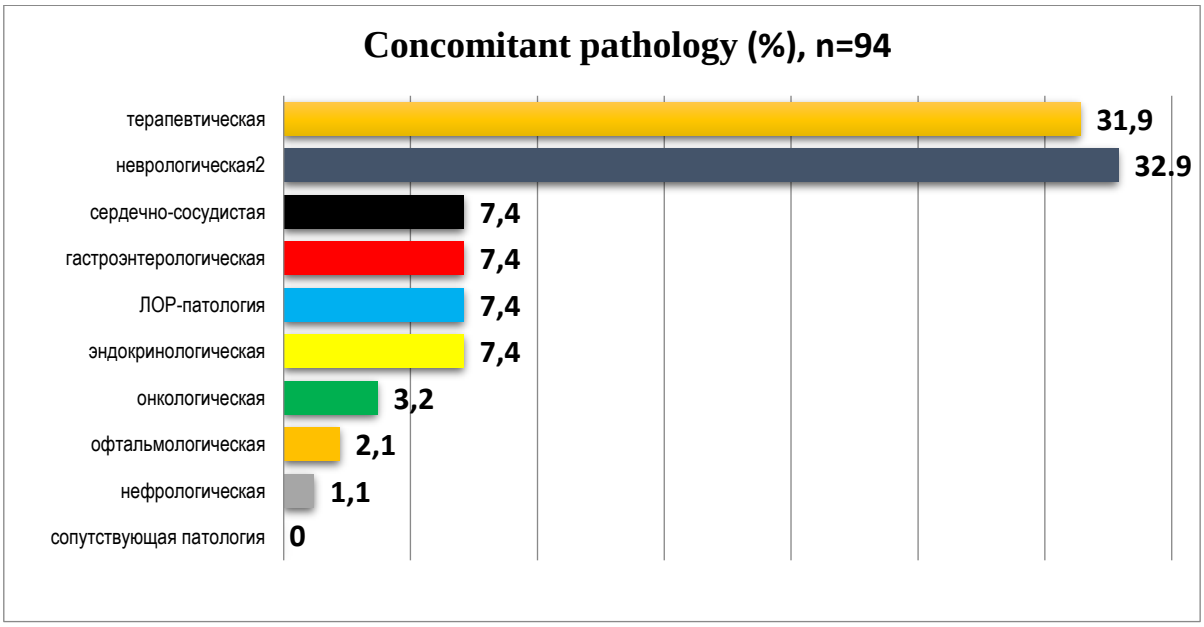

Fig. 1. The presence of somatic pathology in patients with combined maxillofacial injuries (n=234)

Of considerable interest from the point of view of diagnostics, determination of differentiated tactics, results and outcomes of treatment is the study of the clinical course of patients with combined maxillofacial trauma. Depending on the clinical phase of the course, patients with combined maxillofacial trauma were divided as follows: 128 (54.7%) patients - in the clinical compensation stage; 64 (27.3%) - in the clinical subcompensation stage; 33 (14.1%) - in the moderate clinical decompensation stage; 9 (3.9%) - in the clinical decompensation stage. In our observations, out of 234 patients with combined maxillofacial trauma admitted to hospital for treatment, 117 (50%) were in moderate condition upon admission, slightly more than a third, 85 (36.3%), were in severe condition, and only 29 (12.4%) had a satisfactory condition; 3 (1.3%) cases were admitted in extremely serious condition (see Fig. 2). In all 234 patient examinations, we assessed each case individually and made differentiated decisions when determining further treatment. In our studies, critical condition was observed in 3 patients (1.3%) with severe brain contusion, basal skull fracture with basal scull fracture, and multiple midface injuries. Severe condition was observed in 85 patients (36.3%) with multiple midface injuries and severe brain contusion. A total of 117 patients (50%) with moderate brain contusions and lower facial fractures were assessed as having moderate severity. In our observations, 29 patients (12.4%) were in satisfactory condition.

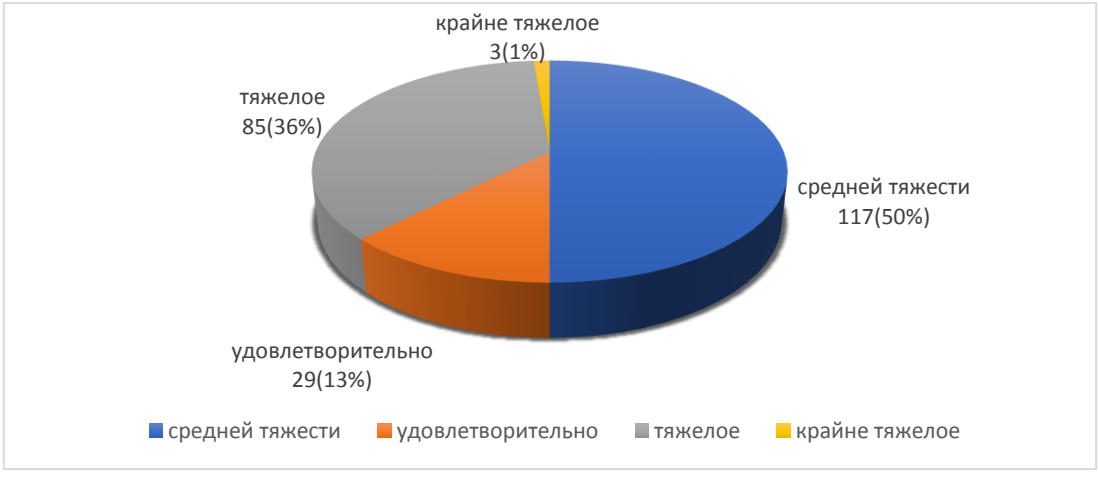

Fig. 2. Condition of patients with combined maxillofacial trauma upon admission n=234

Severe condition was observed in 85 patients (36.3%) with multiple midface injuries and severe brain contusion. A total of 117 patients (50%) with moderate brain contusions and lower facial fractures were assessed as having moderate severity. In our observations, 29 patients (12.4%) were in satisfactory condition. Patients with combined maxillofacial trauma underwent a general clinical and neurological examination upon admission to the hospital, including an assessment of the level of impaired consciousness, the severity of general cerebral, focal, dislocation, brainstem, and meningeal symptoms. All 234 patients studied underwent a clinical and neurological examination upon admission and over time, assessing the level ofimpaired consciousness using the GCS, as well as the severity or presence of general cerebral, focal, brainstem, and meningeal symptoms. In our sample of 234 patients with combined maxillofacial trauma, 135 patients retained clear consciousness, accounting for 57.7% of cases. Thirty-three (14.1%) patients were moderately obtunded, and 24 (10.3%) were profoundly obtunded. The distribution of patients in severe condition was as follows: stupor - 16 (6.8%), coma I - 14 (6.0%), and coma II - 9 (3.8%). The remaining three (1.3%) patients were in grade III coma (see Table 1).

Table 1

Assessment of the level of impaired consciousness in patients with combined maxillofacial trauma (n=234)

Level of consciousness	GCS, points	abs.	%
Lucid	14-15	135	57,7
Moderate stupor	13	33	14,1
Deep stupor	11-12	24	10,3
Stupor	9-10	16	6,8
Coma I	7-8	14	6,0
Coma II	5-6	9	3,8
Coma III	3-4	3	1,3
Total		234	100

Our analysis revealed key patterns in the clinical course of combined maxillofacial injuries. Specifically, a characteristic change in consciousness, ranging from clear consciousness to coma, was noted. In our hospital's emergency department, the Glasgow Coma Scale and other scales and questionnaires were used to determine the degree of injury for a differentiated treatment approach.

All 234 patients with combined maxillofacial injuries underwent instrumental examinations upon admission based on existing standard treatment methods and our own algorithm and scale for maxillofacial fractures. In our study of 234 patients, no skull fractures were recorded in 85 (36.3%), while craniography revealed skull fractures in 149 (63.7%) cases. Given the stable condition of all 234 patients with combined trauma and the absence of focal symptoms or early stages of dislocation syndrome, the neurosurgeon treated them conservatively.

A total of 149 patients (100%) had vault fractures (120 (80.5%)), vault and base fractures (26 (17.5%)), and base skull fractures (3 (2.0%)) (see Table 2).

Table 2

Number of patients with skull vault and base fractures, n=234

Number of patients	Total patients	fractures Fracture	of the vault Fracture	of the base of the skull

234	149	120	26	3
%	63,7%	80,5%	17,5%	2,0%
Note: the differences between the indicators are statistically significant. (P <0,001)				

According to our data from our study of 234 patients, 149 had fractures of the vault of 120 (68.6%), fractures of the vault and the base of the skull could be combined with each other in our observations there were 52 (29.7%) cases, a fracture of the base of the skull 3 (1.7%), a total of 175 (100%) cases of observations the combination of several fractures affected the severity and course of the injury, worsening their well-being, aggravating the concomitant pathologies that were present upon admission (see Table 3).

Table 3

Incidence of skull vault and base fractures in patients, n=204

Number of cases Fracture	**of the arch Fracture**	**of the arch and base**	**Fracture of the base**
175	120	52	3
%	68,6%	29,7%	1,7%
Note: the differences between the indicators are statistically significant. (P <0,001)			

In our study of 234 patients, the absence of skull fractures was recorded in 85 (36.3%) cases, while the presence of skull fractures during craniography was observed in 149 (63.7%) cases. Moreover, there were 120 (80.5%) fractures of the vault of the skull, 26 (17.5%) fractures of the vault and base of the skull, and 3 (2.0%) fractures of the base of the skull, for a total of 149 (100%) patients. This breakdown by group would look as follows (see Table 4).

Table 4

Number of patients with skull vault and base fractures, n=234

Fracture Locations	total n=234, %	1 group n=104, %	2 group n=130, %
Vault	120 (51,3%)	19 (8,1%)	101 (43,2%)
Fracture	26 (11,1%)	0	26 (11,1%)
Vault and Base	3 (2,0%)	0	3 (2,0%)
Fracture	149	19	130
Note: the differences between the indicators are statistically significant. (P <0,001)			

In a study of 149 patients, fractures of the vault were found in 120 (68.6%), fractures of the vault and the base of the skull could be combined with each other in our observations, there were 52 (29.7%) cases, a fracture of the base of the skull in 3 (1.7%), a total of 175 (100%) events in the context of groups will look as follows (see Table 5).

Table 5

Number of patients with skull vault and base fractures, n=234

Fracture Locations	total n=234, %	1 group n=104, %	2 group n=130, %
Vault	120 (51,3%)	19 (8,1%)	101 (43,2%)
Fracture	52 (22,2%)	0	52 (22,2%)
Vault and Base	3 (2,0%)	0	3 (2,0%)
Fracture	175	19	156
Note: the differences between the indicators are statistically significant (P <0,001)			

All 234 patients with combined maxillofacial trauma were divided into two groups based on the severity of the injury. Our 234 patients did not undergo neurosurgical procedures, as they were screened based on the severity of their injuries at the diagnostic stage, using a developed algorithm and a scale for maxillofacial fractures. According to our data, the time from injury to hospitalization for patients with combined maxillofacial trauma ranged from a few minutes to several days. The treatment distribution of all 234 patients was as follows: 104 (44.4%) underwent conservative treatment, while 130 (55.5%) underwent surgical treatment. Of the 130 patients in the second group, 104 (80%) underwent surgical treatment. According to the dislocation of fractures of the maxillofacial region and treatment methods, patients were distributed as follows: representatives of the first group received conservative treatment 104 (44.4%), of which 74 (31.6%) had fractures of the lower jaw, 21 (9.0%) of the zygomatic bone, 5 (2.1%) of the upper jaw and 4 (1.7%) of the nasal bone.

The second group included 130 (55.5%) of which 104 (80%) patients were operated on, with fractures of the lower jaw in 96 (41.0%) cases, zygomatic bone in 6 (2.6%), upper jaw in 1 (0.4%) and pearl nose in 1 (0.4%) cases, treated conservatively with fractures of the lower jaw in 16 (6.8%), zygomatic bone in 8 (3.4%), upper jaw in 1 (0.4%) and pearl nose in 1 (0.4%) cases of observations (see Table 6).

Table 5

Number of patients with skull vault and base fractures, n=234

Number of patients, types of treatment		Upper jaw	Lower jaw	Zygomatic bone	Nose bones
1 group n=104 (44,4%)	All patients were treated conservatively.	5 2,1%	74 31,6%	21 9,0%	4 1,7%
2 group n=130 (55,5%)	Surgical treatment 104 (80%)	1 0,4%	96 41,0%	6 2,6%	1 0,4%
	Conservative treatment 26 (20%)	1 0,4%	16 6,8%	8 3,4%	1 0,4%
total 234		7 3,0%	186 79,5%	35 14,9%	6 2,6%
Note: the differences between the indicators are statistically significant (P <0,001)					

If we examine the conducted analysis of the obtained research data in the context of groups with fractures of the maxillofacial region of 234 patients, the number of cases will look as follows: a total of 456 (100%) cases: 362 (79.4%) mandibular fractures, 66 (14.5%) zygomatic bone fractures, 16 (3.5%) maxillary fractures, and 12 (2.6%) nasal bone fractures. In our studies, the indicators of the first group were 54 (14.9%) fractures in the chin region, 50

(13.8%) in the angle region of the mandible, 34 (9.4%) in the condylar process region, 13 (3.6%) in the body of the mandible, and 6 (1.7%) in the ramus region of the mandible. According to our data, the second group had 71 (19.6%) chin fractures, 65 (17.9%) posterior angle fractures, 44 (12.1%) condylar fractures, 18 (5.0%) posterior body fractures, and 7 (1.9%) ramus fractures. Our analysis of the obtained data from the study of 234 patients with maxillofacial fractures revealed the following: 186 (79.5%) mandible fractures, 35 (15.0%) zygomatic fractures, 7 (3.0%) maxillary fractures, and 6 (2.5%) nasal bone fractures.

In the first group, 157 (34.4%) mandible fractures, 32 (7.0%) zygomatic fractures, 7 (1.5%) maxillary fractures, and 9 (2.0%) nasal bone fractures. In the second group, there were 205 mandibular fractures (44.9%), 34 zygomatic fractures (7.5%), 9 maxillary fractures (2.0%), and 7 nasal bone fractures (1.5%). Based on the analysis of the obtained study data for the groups with mandibular fractures in 234 patients, the number of cases will look as follows: a total of 362 (100%) cases, of which 125 (34.5%) were fractures in the chin area, 115 (31.8%) in the angle area of the mandible, 78 (21.5%) in the condylar process area, 31 (8.6%) in the body of the mandible, and 13 (3.6%) in the ramus area of the mandible. According to the results of our study, a combination of two or more fractures was observed in the same patient, this was especially characteristic of the mandible. Our study found that 94 (20.6%) fractures occurred in the middle and 362 (79.4%) lower maxillofacial regions, with a total of 456 cases observed. Our findings are consistent with published data from international researchers and are reliable (see Table 7).

Table 7

Rates of maxillofacial fractures in patients by group, n=456

Localization of fractures	total n=234, %	1 group n=104, %	2 group n=130, %
In the middle section, total fractures	94 (100%)	41 (43,6%)	53 (56,4%)
Fractures of the teeth and alveolar process of the maxilla	6 (6,4%)	1 (1,1%)	5 (5,3%)
Upper maxillary fracture (Le Fort III)	6 (6,4%)	2 (2,1%)	4 (4,2%)
Middle maxillary fracture (Le Fort II)	8 (8,5%)	4 (4,2%)	4 (4,2%)
Lower maxillary fracture (Le Fort I)	6 (6,4%)	3 (3,2%)	3 (3,2%)
Nasoorbitoethmoidal complex (NOE) fracture	12 (12,7%)	5 (5,3%)	7 (7,4%)
Zygomaticomaxillary complex (ZMC) fracture	56 (59,6%)	26 (27,7%)	30 (31,9%)
In the lower section, total fractures	362 (100%)	157 (43,4%)	205 (56,6%)
Mental region fracture	124 (34,2%)	54 (14,9%)	70 (19,3%)
Angle fracture of the mandible	114 (31,5%)	50 (13,8%)	64 (17,7%)
Condylar process fracture of the mandible	77 (21,3%)	34 (9,4%)	43 (11,9%)
Body/ramus fracture of the mandible	4 (1,1%)	1 (0,3%)	3 (0,8%)
Ram fracture of the mandible	31 (8,6%)	13 (3,6%)	18 (5,0%)
Nasal bone fracture	12 (3,3%)	5 (1,4%)	7 (1,9%)
Total number of fractures and points	456 (100%)	198 (43,4%)	258 (56,6%)
Note: the differences between the indicators are statistically significant. (P <0,001)			

All 234 patients with combined maxillofacial trauma were divided into two groups based on the severity of the injury. Our 234 patients did not undergo neurosurgical procedures, as they were screened based on the severity of their injuries at the diagnostic stage, using a developed algorithm and a scale for maxillofacial fractures. According to our data, the time from injury to hospitalization for patients with combined maxillofacial trauma ranged from a few minutes to several days. The treatment distribution of all 234 patients was as follows: 104 (44.4%) underwent

conservative treatment, while 130 (55.5%) underwent surgical treatment. Of the 130 patients in the second group, 104 (80%) underwent surgical treatment. Based on the location of maxillofacial fractures and treatment methods, patients were distributed as follows: 104 patients (44.4%) in the first group received conservative treatment, including 74 (31.6%) with mandibular fractures, 21 (9.0%) with zygomatic bone fractures, 5 (2.1%) with maxillary fractures, and 4 (1.7%) with nasal bone fractures. Thus, based on the analysis of the data obtained in our study, mandibular fractures were most frequently observed in the chin area (125 cases, 34.5%), the angle of the mandible (115 cases, 31.8%), and the condylar process (78 cases, 21.5%), which is consistent with data from international researchers.

In our study of 234 patients, clinical and radiographic examination revealed that 456 fractures occurred in the middle and lower maxillofacial region. This is due to the anatomical location of structures during injuries of various origins and their vulnerability. The quality of life assessment of 234 patients was conducted using the Euro Qol-5D Quality of Life Questionnaire.

We believe that treatment should primarily focus on pain relief, which significantly impacts patients' quality of life. QOL assessments were conducted before and after treatment in all groups (Table 8).

Table 8

Euro Qul-5D questionnaire scores before treatment (n=234)

Groups	Number of patients	M (mobility)	S (Self-service)	HA (Household activity)	P/Д (Pain/Discomfort)	P/Д (Pain/Discomfort)	EQ-балл state of health
1	104	1	1	0,39658	0,123	0,08611	0,66271
2	130	1	1	0,3404	0,123	0,08465	0,6645
Total:	234	1	1	0,36138	0,123	0,08601	0,661705
Note: the differences between the indicators are statistically significant. (P <0,001)							

Our analysis of the quality-of-life study results for 234 patients showed that the data obtained in the two groups differed. Quality of life significantly deteriorated and recovered slowly in patients with comorbid somatic pathology. According to our data, the most significant deterioration in the Euro Qol-5D questionnaire parameters, such as pain/discomfort and anxiety/depression, occurred in all study groups. The quality-of-life study results for patients in the first group were stable, as their injuries were moderate in severity. The results for the second group were labile, as their injuries were severe, and pain was a major concern. This significantly worsened their quality of life, aggravating their overall condition and somatic status (see Table 9). We believe that treatment should primarily focus on relieving pain, which significantly impacts patients' quality of life. The study of the quality of life of patients in all groups was conducted before and after treatment (Table 9)

Table 9

Euro Qul-5D questionnaire scores after treatment (n=234)

Groups	Number of patients	M (mobility)	S (Self-service)	HA (Household activity)	P/Д (Pain/Discomfort)	P/Д (Pain/Discomfort)	EQ-балл state of health
1	104	1	1	0,38922	0,4979	0,95208	-0,57638

2	130	1	1	0,3259	0,5244	1,025	-0,6124
total:	234	1	1	0,354912	0,464848	0,975237	-0,54345
Note: the differences between the indicators are statistically significant. (P <0,001)							

A study of 234 patients' quality of life showed that the most significant impact was on pain/discomfort and anxiety/depression, which was driven by emotional state, which, in a vicious cycle, reinforces each other and worsens quality of life.

In our research, we used a visual analog scale to determine pain intensity in our patients.

Based on our research, we believe that pain, as a strong irritant, primarily impacts patients' emotional state, provoking deterioration in their condition and quality of life (see Table 10).

Table 10

VAS scores before treatment (n=234)

groups	Number of patients	1- no pain (0)	2- mild pain (1-3)	3- moderate pain (4–6)	4- very severe pain (7-9)	5- unbearable pain (10)
1	104	0	20	7	0	0
2	130	0	22	33	1	1
total:	234	0	42	40	1	1
Note: the differences between the indicators are statistically significant. (P <0,001)						

Our studies using the VAS scale after treatment for various surgical procedures yielded the following results: after treatment, pain regressed to complete disappearance in all two groups. Mild pain persisted in only two patients in the first group and one patient in the second group, demonstrating the effectiveness of treatment methods with a differentiated approach. Postoperative pain parameters reported by patients are presented in the following table (Table 11).

Table 11

VAS scores after treatment (n=234)

groups	Number of patients	1- no pain (0)	2- mild pain (1-3)	3- moderate pain (4–6)	4- very severe pain (7-9)	5- unbearable pain (10)
1	104	100	2	0	0	0
2	130	131	1	0	0	0
total:	234	231	3	0	0	0
	Note: the differences between the indicators are statistically significant. (P <0,001)					

An analysis of the study data from all 234 patients suggests that vigilance and monitoring of harmful factors, as well as the belief that these signals indicate disease progression, can transform even mild pain into unbearable pain. Thus, based on our research, the following conclusions can be drawn: avoidance behavior is rapidly reinforced, leading to

increased fear, limited physical activity, and other physical and psychological consequences that contribute to disability and the spread of pain. All of these factors, in turn, contribute to a deterioration in patients' quality of life.

4. Conclusions

1. According to the data obtained in our study, a significant proportion of patients with combined maxillofacial trauma were men of working age (184 patients, 78.6%), which is a pressing issue from both social and economic perspectives.

2. When examining the somatic status, it was revealed that among 234 patients, 94 (40.2%) had somatic pathology, manifested as arterial hypertension in 30 (31.9%) cases, neurological pathology in 31 (32.9%), ischemic heart disease in 7 (7.4%) cases. In 7 (7.4%) cases, gastroenterology, ENT organs 7 (7.4%), endocrinology in 7 (7.4%), oncology 3 (3.2%), ophthalmology 2 (2.1%) patients with liver pathology and 1 (1.1%) renal failure.

3. Analysis of the obtained study data by group of 234 patients with maxillofacial fractures revealed the following number of cases: 456 (100%) mandibular fractures, 362 (79.4%) zygomatic bone fractures, 66 (14.5%) maxillary fractures, 16 (3.5%) maxillary fractures, and 12 (2.6%) nasal bone fractures, which is very relevant.

4. We determined the severity of patients with combined maxillofacial fractures upon admission to our hospital emergency department using the Glasgow Coma Scale and other scales and questionnaires that determine the degree of injury for a differentiated approach to treatment.

5. A study of 234 patients showed that the most severely impacted QOL parameters were pain/discomfort and anxiety/depression, which is facilitated by the patients' emotional state. The visual analogue scale and its five parameters allow for a more detailed analysis of pain syndrome.

References

1. Akramova N.A., Khodjibekova Yu.M. / Use of sonography in identifying fractures of the maxillofacial bones // Congress of the Russian Society of Roentgenologists and Radiologists: collection of materials. Moscow, 2019. P. 8-9.
2. Vorobyov A.A., Sargsyan K.A., Andryushchenko F.A., Dyachenko D.Yu., Gavrikova S.V. / Clinical and anatomical features of the mandible for the use of its exoskeleton // Russian Medical and Biological Bulletin named after academician I.P. Pavlov. - 2016. - No. S2. - P. 37-38.
3. Efimov Yu.V., Stomatov D.V., Efimova E.Yu., Telyanova Yu.V., Dolgova I.V., Stomatov A.V. / Analysis of the results of using bone suture in victims with oblique fractures of the mandible // Bulletin of Volgograd State Medical University. - 2015. - No. 4. - P. 60-62.
4. Nikolaev E.L. / Assessment of health-related quality of life: are doctors healthier than teachers? // Bulletin of the Chuvash University. - 2014. - No. 2. - P. 310-315.
5. Khasanov A.I., Khakimov A.A., Abobakirov D.M. / Modern methods of osteosynthesis of the mandible // Stomatologiya. 2020. No. 1. P. 82-87.
6. Zhang Sh., Petruk P.S., Medvedev Yu.A. / Fractures of the mandible in the body and angle area: structure, epidemiology, principles of diagnostics. Part I // Russian Dental Journal. - 2017.- No. 2. –P. 100-103.
7. Yakhyaev B.M. / Organization and tactics of emergency medical care for patients with combined craniomaxillofacial injuries // Stomatologiya. 2017. No. 2. P. 17-22.Dewan M.C. / Estimating the global incidence of traumatic brain injury // J. Neurosurgery. – 2018. Vol. Apr 1: - P. 1-18.
8. Khan T.U., Rahat S., Khan Z.A., Shahid L., Banouri S.S., Muhammad N. / Etiology and pattern of maxillofacial trauma. PLoS ONE 2022; 17(9): e0275515, https://doi.org/10.1371/ journal. pone.0275515.
9. Koen V., Milou K., Jurre B., Harm J., Bram J., Joukje N. / Blood-based biomarkers of inflammation in mild traumatic brain injury: A systematic review // Neuroscience & Biobehavioral Reviews. Volume 132, January 2022, Pages 154-168.
10. Ludlow J.B., Timothy R., Walker C., Hunter R., Benavides E., Samuelson D.B., et al. / Effective dose of dental CBCT- A meta-analysis of published data and additional data for nine CBCT units. // Dentomaxillofac Radiol 2015; 44(1): 20140197. https://doi.org/10. 1259/dmfr.20140197.
11. Mosaddad S., Gheisari R., Erfani M. / Oral and maxillofacial trauma in motorcyclists in an Iranian subpopulation. // Dent Traumatology. 2018 Oct;34(5): P. 347-352.
12. Singaram M., Sree V.G., Udhayakumar R.K. / Prevalence, pattern, etiology, and management of maxillofacial trauma in a developing country: a retrospective study. // J Korean Assoc Oral Maxillofacial Surg. 2016; 42(4): 174–181, https://doi.org/10.5125/jkaoms.2016.42.4.174.

13. Tonkopi E., Duffy S., Abdolell M., Manos D. / Diagnostic reference levels and monitoring practice can help reduce patient dose from CT examinations. // AJR Am J Roentgenology 2017; 208: 1073–81. https://doi.org/10.2214/AJR.16.16361.