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MAXILLOFACIAL FRACTURES IN PATIENTS WITH MULTIPLE INJURIES AND POLYTRAUMA

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ABSTRACT

Introduction Severity and complexity of combined maxillofacial trauma require not only multidisciplinary approach, but prevention of trauma is also of extreme importance, as this may reduce direct and indirect social economic losses. Understanding the trauma etiology, types, and severity may support clinical priorities determination, increase treatment effectiveness, and also may achieve certain trauma prevention. In polytrauma patients, omissions in early injury diagnostics is often observed, especially in uncooperative and intoxicated patients, as well as in patients in unconscious state. MFS is important in multiple trauma patients and is essential for exact and correct diagnosis, as well as for adequate maxillofacial trauma treatment.

Purpose The aim of this study is to identify the maxillofacial fractures in patients with multiple trauma or polytrauma and to analyze whether there are any factors related to associated injuries.

Material and methods A total of 3a52 traumatic patients were retrospectively and prospectively examined for the period of 6 years (05.2005 - 12.2011), treated at Department of Oral and Maxillofacial surgery at the St. Anna University Hospital , Sofia, on grounds of the accurately kept hospital documents in conformity with accepted standards and with ethical requirements for performing such studies.

Results Associated injuries were observed in 129 patients (36%). In combined maxillofacial trauma (ÑMFT), the most common maxillofacial fracture is lower jaw fracture (46.5%), followed by zygomatic bone trauma (34.9%) and nasal bones trauma (21.7%). The occurrence of associated injury correlated significantly with trauma mechanism and fracture type; high-speed accidents and severe facial fractures were significant predictors of associated injury. Alcohol plays a key role in maxillofacial trauma appearance, whereas the alcohol relation is significant with interpersonal injuries (42%), with falling (20%) and with motor vehicle accidents (5.7%).

Conclusion Applying of multidisciplinary approach (anaesthesiologists, neurosurgeons, abdominal surgeons, traumatologists, maxillofacial surgeons) in traumatic patients provides optimum results and the best possible outcome in their treatment.

Key words: maxillofacial trauma, polytrauma, multiple trauma, combined trauma

INTRODUCTION

The maxillofacial area traumas have specific characteristics arising from their topographic, anatomic-physiology and functional maxillofacial area (MFA) features. Near it, vital organs are located and their damage explains the large complexity and variety in clinical picture.

Head and neck are one of the most resilient, but also of most vulnerable topographic area in human body. There is no such other area with so many vital structures, located on so restricted area. Traumas, penetrating or not, regardless of the force and mechanism of injury, can cause life-threatening conditions because of possible damage of brain, eyes, trachea, larynx, esophagus, large blood vessels, cerebral nerves or spinal cord, as well as cervical root damages. Surgeons dealing with these injuries must be aware about anatomic structures of head, maxillofacial area and neck, in order to provide safe, fast and predictable as a result treatment.

Combined trauma have always been interesting for medical thought and practice. At some part of these traumas, except damages in maxillofacial area, there are also serious injuries in other organs and systems, which is one of the reasons those patients to not receive medical aid and therapy of facial trauma in due time. To prevent omissions in diagnostics and to improve prognosis, in conformity with ATLS principles, overall patient's examination is required, as well as early adequate consultations to relevant specialists, as well as dynamic monitoring and re-estimation of their status.

Definition of combined trauma. Per International Classification of Diseases these injuries, in which several anatomic areas are damaged at the same time, are determined as combined traumas. These traumas require interdisciplinary (multi profile) diagnostic and therapeutic approach.

Definition of polytrauma and polytraumatism. A polytrauma is a combined trauma, in which there are two or more severe injuries that affect at least two anatomical regions; rarely, two or more severe injuries in one anatomic area, whereas at least one of these is life-threatening [1]. The term "polytraumatism" that is used in practice, is not actually a synonym of polytrauma, but is directly related to it. Polytraumatism is a concept that requires a complex of diagnostic therapeutic measures and includes solving of serious social problems arising from polytrauma [1, 2, 3].

The aim of this study is to identify the maxillofacial fractures in patients with multiple trauma or polytrauma and to analyze whether there are any factors related to associated injuries.

MATERIAL AND METHODS

A total of 352 traumatic patients were retrospectively and prospectively examined for the period 05. 2005 - 12. 2011, treated at the MFS Ward at the St. Anna University Multidiscipline Active Treatment Hospital in Sofia, whereas ÑMFT were determined in 129 patients.

Place of study: the MFS Ward at the St. Anna University Multidiscipline Active Treatment Hospital in Sofia.

We choose "St. Anna" University Multidiscipline Active Treatment Hospital for our survey because of the fact that it serves a large randomized population of patients – city and rural population from Sofia and district of Sofia; it has the suitable ward structure (emergency gait), capacity and volume and the study has a representative extract. Both accidently appeared patients and specially directed to our clinic patients from other wards where the patients were treated.

MATERIAL AND METHODS

129 CMFT patients were studied retrospectively (disease history) and prospectively for a period of 6 years (05. 2005 - 12. 2011) on grounds of the accurately kept hospital documents in conformity with accepted standards and with ethical requirements for performing such studies.

Methods we use in this survey were: clinical and paraclinical evaluation of patients, consultations with other physicians, related to specific associated trauma.

RESULTS

For our study we used clinical and the follow paraclinical evaluation: radiography (orthopantomography, modified Hirz, paranasal sinuses, axial radiographies), CT, MRI, ultrasound, laboratory tests.

Conventional radiography examination was performed in 78 (60.5%) of studied patients, in 10 (7.8%) of them – a CT examination, and in 41 (31.8%) – both imaging diagnostics methods.

Consultations of combined trauma patients of adjoining specialties, related to diagnostics and treatment – neurosurgeon, ophthalmologist, traumatologist, abdominal surgeon, anaesthesiologist.

Consultations with adjoining specialities were performed, as follows: neurosurgeon - 109 (84.5%), ophthalmologist - 18 (14%), traumatologist - 21 (16.3%), abdominal surgeon - 11 (8.5%), otorhinolaryngologist – 3 (2.3%).

The treatment of these patients was made according principles of ATLS. Therapeutic plan of these patients includes: soft tissue injuries treatment, temporary immobilization, definitive fragment reposition and fixation, reconstructive interventions.

In 64 (49.6%) of patients we have studied, in definitive MFT treatment, a general anaesthesia was used, in 56 (43,4%) – local anaesthesia was used and in 9 (7%) – atar-analgesia/sedation and local anaesthesia. MFT treatment in 33 (25.6%) of patients was performed up to the 3rd day after obtaining trauma, in 38 (29.5%) of patients – between 3rd and 5th day, in 33 (25.6%) – between 5th and 10th day, and in 25 (19.4%) – after the 10th day. In 44 (34.1%) patients, splinting with standard teeth splint was used; in 24 (18.6%) patients – osteosynthesis with wire bone suture; in 11 (8.5%) – circular ligatures(wiring) and suspensive fixation; in 34 (26.4%) patients –osteosynthesis with titanium plates; in 23 (17.8%) patients – reposition and anterior nasal tamponade; in 10 (7.8%) patients – a reconstruction with frozen cartilage, and in 8 (6.2%) patients – closed zygomatic bone reposition.

Data analysis regarding trauma aetiology and MFT

After the clinical material analysis it was determined that in road traffic accidents (RTA), most often lower jaw(LJ) is affected - 28 (16.5%), followed by zygomatic bone - 14 (8.2%), nasal bones - 10 (5.9%), orbit - 7 (4.1%), upper Jaw(UJ) - 6 (3.5%) and dentoalveolar (DA) - 4 (2.4%). In assault, again, the most affected is LJ - 26 (15.3%), followed by zygomatic bone - 19 (11.2%), nasal bones - 8 (4.7%), UJ - 5 (2.9%), orbit - 3 (1.8%) and DA fractures - 1 (0.6%) (Table 1).

Table 1. Data according to trauma aetiology and MFT

Trauma aetiology	**MFT (total for 129 patients)**						**Total number**	**MultipleMFT (in 23 patients)**
	UJ	**LJ**	**ZB**	**Orbit**	**NB**	**DA**		
RTA	6	28	14	7	10	4	69	7
Assault	5	26	19	3	8	1	62	9
industrial	0	0	3	2	1	0	6	1
Sport	0	1	1	0	3	0	5	0
Fall	1	1	5	2	3	1	13	1
From a height	3	4	2	0	2	0	11	4
Firearm	0	0	1	1	1	1	4	1
Total number	**15**	**60**	**45**	**15**	**28**	**7**	**170**	**23**

This study indicates that as a result of falling, the most common MFT is the zygomatic bone fracture, and as a result of falling from a height - LJ.

In our study, only RTA and thrash were analysed as reasons for combined trauma, as well as MFT that affects upper and lower jaw, zygomatic bone and nasal bones, be-

cause of expected lower incidence and lack of authentication of results in the other reasons and MFT.

Results of our study indicate that in 106 (82.2%) patients, there is one MFT that comes together with the combined trauma. In 23 (17.8%), there are two or more MFT that come together with the combined trauma, defined as multiple MFT.

It was determined that in 46.5% of combined trauma cases that engage the MFA, lower jaw takes part, followed by a zygomatic bone trauma - 34.9%, and nasal bones trauma - 21.7%. This trend of MFT distribution is also observed in single MFT. In multiple MFT, the most common are nasal bones traumas (65.2%) together with zygomatic bone traumas (60.9%), of lower (52.2%) and /of upper jaw (52.2%). Significantly higher is the relative share of affected upper jaw, zygomatic bone (ZB) and nasal bones (NB) in multiple MFT in comparison to single MFT (x2, p<0.05). Significantly higher is the relative share of orbital fractures in single MFT compared to multiple MFT (x2, p=0.005) (Table 2).

This way a conclusion can be made that affection of UJ, ZB and nasal bones is more typical for multiple MFT.

Table 2. MFT participation in combined traumas

MFT	MFT (total n=129)		Single MFT (n=106)		Multiple MFT (n=23)		Level of significance
	Number	%	Number	%	Number	%	
Upper jaw	15	11.6	3	2.8	12	52.2	p<0.001
Lowe jaw	60	46.5	48	45.3	12	52.2	p=0.355
Zygomatic bone	45	34.9	31	29.2	14	60.9	p=0.005
Orbit	15	11.6	13	12.3	2	8.7	p=0.005
Nasal bones	28	21.7	13	12.3	15	65.2	p<0.001
Dentoalveolar	7	5.4	5	4.7	2	8.7	p=0.364

* As a total, percents are more than 100, as in some patients there are more than one MFT.

During the analysis of mutual relation between MFT and combined traumas, only cerebral trauma, musculoskeletal system trauma and ophthalmologic combined traumas are taken into account, which are also the most common traumas.

Results of our examination indicate that there is no mutual relation between fractures of upper jaw, zygomatic bone, nasal bones and dentoalveolar fractures with neurosurgical traumas, musculoskeletal system traumas or ophthalmologic combined traumas (x2, p>0.05) (Table 3).

Table 3. Data regarding MFT and combined trauma

Combined trauma / MFT	Neurosurgical		MSS trauma		Ophthalmologic		Level of significance
	There is	There isn't	There is	There isn't	There is	There isn't	
Upper jaw	7	85	2	10	1	9	p=0.619
Lower jaw	40	50	9	3	0	10	p<0.001
Zygomatic bone	32	60	2	10	5	5	p=0.233
Orbit	6	86	0	12	7	3	p<0.001
Nasal bones	23	69	2	10	1	9	p=0.441
Dentoalveolar	6	86	1	11	0	10	p=0.501

After analyzing the clinical material it was determined that in distribution of lower jaw, orbit and orbital floor fractures, significant differences are observed. Results show that lower jaw fractures are typical for MSS traumas and are missing in ophthalmologic combined traumas (x2, p<0.001). In ophthalmologic combined traumas, more common are orbital fractures (mostly of orbital floor) (x2, p<0.05). The most common neurosurgical combined traumas are accompanied by lower jaw fractures in 40 patients (31%), of zygomatic boned in 32 patients (24.8%) and of nasal bones in 23 patients (17.8%), but no significant differences are determined.

Results of our study show that 100% of analysed polytrauma cases are of male gender. When analyzing data, again it is determined that the most affected group is aged between 20-39 (4, 57.2%)

Results of this study indicate that the most common MFT is the lower jaw fracture - 5, followed by upper jaw - 3, and zygomatic bone - 3. Multiple MFT are observed in three patients.

Clinical material data analysis shows that polytrauma patients have suffered mainly as a result of high energy injury sources – on the first place, RTA - 4 (57.1), of falling from a height - 2 (28.6), and one suffered by a thrash (14.3%)

Patients with suspected or determined MF fracture may turn directly to MFS for treatment. Under these cir-

cumstances some of associated injuries may be omitted and therefore an adequate consultation with specialists of adjacent specialists is necessary. Until determining of clear, based on facts recommendations, clinical approach must be based on knowledge of physiology, logics and collective experience gathered.

In providing a specialized medical aid to traumatic patients on grounds of own results analysis and their adaptation to ATLC "golden standard", it is required the ÑMFT treatment to be presented as a several steps protocol for optimization of work in MFS wards:

1. Stabilizing of the patient – per ATLS (patients with steady haemodynamics – no need of vasoactive or inotropic medicines, without presence of hypoxemia or hypercapnia, lactate serum levels <2.5 mmol/l, normal coagulation status, normothermia, normal urine excretion (>1 ml/kg/h).

2. Injuries identification.

3. Performing of imaging diagnostics (radiography / CT) and preparation, if possible and if necessary, of laboratory models (including stereo lithographic models).

4. Appointing of consultations with relevant specialists.

5. Soft tissues processing and obtaining material for microbiologic examination per indications (if need).

6. Temporary immobilization of bone fragments.

7. Preparing a preoperative plan and choosing an approach.

8. Fragments repositioning and fragments and soft tissues restoration.

9. When necessary, performing of a secondary reconstruction – placing of implants, contour plastics, cicatrices correction, vestibuloplastics.

DISCUSSION

Chronologically, for a first time Hippocrates, around 400 years before Christ, informed about a relation between the closed facial trauma and blindness [4]. Later on, in 1557, Vesalius for a first time described a case of aorta thoracic department rupture after falling down from a horse [5].

According to Grover & Antonyshyn [6], bone injury severity at MFT is determined by two main factors: traumatic agent force (G – the force) and anatomic area affected by the hit. The amount of energy - reason for injury, is a function of the mass (m) x acceleration (a). Low hit speed can cause localized fractures. High velocity hits, such as those at road traffic accidents (RTA), are connected with fragmented fractures, fractures with significant dislocation and inclusion of near anatomic regions [7].

The hit zone is extremely important because of different steadiness of various facial skeleton parts. Nasal bones are suspect for injury even at low hit force, while maxilla and forehead bone are much more resilient (elastic). It is important to note that the force, generated as a result of a 60 km/h hit, actually exceeds the admissible limits of all facial bones [7].

The hit steadiness is determined by the facial skeleton architectonics. Basically, facial skeleton surrounds and contains cavities (sinuses). It is build so that to act as an absorbing the energy shield, thus decreasing the hit force and to some extent, vital structures are protected – brain, cervical spine of spinal cord and eye bulb [7].

According to publications of Martin et al. [7], facial skeleton has evaluated so that to protect brain from influence and from energy transfer of the traumatic agent. Condyle fractures, resulting from a chin hit, protect the brain stem. Mid-face region can be examined as a part of sagittal and transversal counterforces, between which sinuses are located, which, on turn, are covered by a thin bone. Thick vertical counterforces resist to functional load – chewing [7].

Biomechanically, in the mid-face skeleton, there are reinforcing bone supports – counterforces – sagittal and transversal, that provide its strength (resistance), and between them sinuses are located, which, in turn, are covered by a thin bone. Structurally, vertical counterforces resist to functional load – they provide distribution of chewing forces from teeth to skull so that to resist the vertically directed load. They are less capable to resist the equivalent transversal or cross forces, resulting from frontal or lateral hits [6]. Horizontal counterforces, on their turn, „shelter" the eye bulb and determine the face form, but they are relatively weak and cannot resist a strong impact [8].

It is considered that facial skeleton bones take some part of the traumatic agent energy and thus, to some extent, brain is protected. During their study, Keenan et al. [9] make an interesting conclusion. They examined patients that suffered a trauma as bicyclers and indicate that intracranial haemorrhage risk increases almost 10 times if there is a maxillofacial injury (MFI) in comparison to those patients in which such injury is not determined. Authors conclude that there are no clear evidence that facial fractures have a preventive role and protect brain from injuries, on the contrary, presence of MFF is a marker for an increased risk of brain trauma [9].

Perry [8] examines MFI as follows:

1. Specific injuries can be received as a result of face impact. Although cervical spine injuries are described in connection with mid-face injuries, cervical spine vertebrae fractures to a large extent are connected to mandible fractures cases [10].

2. Fractures, obtained as a result of interpersonal conflicts, are simple, relatively easy to treat (usually by reposition and fixation), in contrast to high energy traumas, which often require a large set of procedures, as well as an open reposition and rigid fixation.

3. Multiple fractures of facial skeleton are connected to a large risk of bleeding, oedema and respiration disturbance. These complications may also arise in lack of fractures in patients which are on anticoagulant or antiaggregant therapy, as well as in patients with haemorrhagic diatheses [11].

Retropharyngeal hematoma (at injury of cervical spinal cord) may lead to respiratory tracts obstructions [12]. It is possible oedema to worsen both by the increased blood pressure and by the disturbed lymph drainage.

4. Although laminating of windscreens and presence of air bags contribute to reducing mortality in case of accidents, injuries of periorbital tissues, eye bulb, soft tissues, temporomandibular joint and of associated with them frac-

tures of posterior arcs of C1 and C2 are often observed according to the Blacksin's study [8].

5. Localized impact on the bone (bones are plastic) can deform it for a short time. Optical nerve injury may be expected after a frontal area trauma and injury of mid-face region. In case of orbital tip syndrome, nerves and vessels damages are possible and as a result – blindness [8]. Similarly, in case of a hit in the area of cheeks, an isolated fracture of orbital floor may be obtained – a „blow out" fracture.

6. Loss of vision usually appears suddenly, right after the trauma, but may also appear subsequently. Also, it may follow after a seemingly insignificant trauma [8].

7. Severe hypotension may lead to loss of vision (ischemic neuropathy) even in case that there is no craniofacial trauma [8]. On the contrary – hypertension during the resuscitation may increase intraocular bleeding. At adults, dilated pupils may be a sign for an eye problem. Acute glaucoma may be caused by medicines and by a general anaesthesia – this must be taken into account in presence of tensed, painful, red eye [8].

This way a conclusion can be made that affection of UJ, ZB and nasal bones is more typical for multiple MFT.

Our results are close to those of Haug et al. [13], who in their study inform about correlation of 6:2:1 of mandibular : zygomatic : maxillary fractures. Similar results were published by Down et al. [14], who also indicate as a most common MFT the mandibular fracture - 28.6%, followed by ZB and UJ fracture – equal percentages - 16.8%, nasoethmoidal - 11.8%, dentoalveolar - 9.3%, orbital - 6.8%; Thoren et al. [15] - 33.4% mandibular fractures; 31.7% zygomatic-orbital; 9.7% fractures that affect mid-face; 8.2% orbital fractures; 5.2% nasal bones fractures; 3% dentoalveolar, multiple fractures of facial and maxillary bones - 7%, upper facial third fractures - 1.8%; while Gassner [16] indicates the serious prevalence of mid-face fractures - 71.5%, mandibular fractures - 24.3% and frontobasal and orbital - 4.2%.

According to Keel & Trentz [2], primary "hits" (hypoxia, hypotension, fractures, injuries of soft tissues and organs), as well as secondary "hits" (ischemia, reperfusion damages, surgical interventions, infections, syndrome of compression in a restricted space - compartment syndrome (oppression of nerves, blood vessels and muscles to a rigid pad, most often a bone) – i.e. as a result of applied pressure in a closed space, circulation is disturbed, tissue trophics and innervations in this space (Rankin, 1981) induce their own immunomodulated response. This response is performed by local and systemic release of cytokines, metabolites, derivates of arachidonic acid, complement system factors, hormonal mediators, coagulation system factors and other proteins.

The most severe injuries have patients from the polytrauma subgroup. When determining a polytrauma, presence of traumatic shock and/or haemorrhagic hypotension is important, as well as serious affection of one or more vital body functions. According to Kroupa [1], this term is not actually a final diagnosis, but is used to express presence of a life threatening trauma, and it is necessary to be specified additionally using exact morphology and functional diagnoses that clarify patient's status. MFTs take a significant part in polytrauma patients and it is necessary to underline the importance of early inclusion of maxillofacial surgeon in estimation and treatment of these patients. Compared to our study, where polytrauma patients are 5.4%, Thoren [15] indicates a higher percentage - 7.5, while Down et al. [14] make the conclusion that 16% of polytrauma patients also have significant MFI, and according to other authors, 25% of all MFA multiple fractures patients have polytrauma [2]. Because the number of polytrauma patients in our study is not so big, statistically significant conclusions cannot be made, but results are presented graphically to emphasize the MFT importance as a part of polytrauma, as well as the fact that early inclusion of MFS is essential for accurate diagnostics and treatment of these patients. Small traumas affecting muscular-skeletal system, may be omitted in the polytrauma context. Various studies show that during the initial examination, up to 65% of injuries are omitted, whereas 50% of them are muscular-skeletal. Therefore, it is necessary treatment teams to be aware about the trauma mechanisms and the most common injuries related to it. [3, 15]. According to the study of Martin et al. [7], septic complications incidence in polytrauma patients has increased during the last decade. Closed wounds with large soft tissue injury, neglected soft tissues injuries as well as opened wounds and fractures may play the role of a door for microorganisms entering . In comparison, inflammatory process was not observed in any of the polytrauma patients examined by us. Central venous catheters, intratracheal tubes, urological catheters are often contaminated and increase the risk of infection in traumatology patients. The most often cause for post trauma sepsis is the pneumonia occurred at the hospital, catheter infection, intra abdominal and wound infection.

In our study, 85.7% of polytrauma patients were admitted at the Anaesthesia and Intensive Cares Clinic, and 14.3% - at the neurosurgical wards, where the necessary measures on general status stabilization were taken. Polytrauma patients can be devided depending on their response regarding volume substituting therapy and "pharmaceutical resuscitation" to: patients that respond to their therapy, those who do not respond, and boundary patients.[2,3] Boundary patients, patients with high degree of unfavorable outcome (head trauma), bilateral lung contusion patients, with multiple long bones fractures, with coagulopathies, with hypothermia or if their status allows performing a surgery after the 6th hour, must be treated so that to avoid secondary hit. Life saving procedures in these patients must be performed without any delay and must include: haemorrhage control (surgical control in massive haemorrhage in thoracic and abdominal cavity, as well as in case of pelvic fracture and traumatic amputation , coagulation, ligation, organ removal), decompression in extremities compartment syndrome by means of fasciotomy or of the abdomen by means of decompressive laparotomy and reducing the possibility for contamination in cavital organs injury, as well as of opened fractures. Antibiotic post trauma

treatment (Cephalosporin) decreases the risk of post traumatic wound infection.

In polytrauma patients, there is an increased risk regarding omissions in early injury diagnostics. This most often happens in patients that do not cooperate, intoxicated patients, unconscious patients. [2, 3]

Our study results indicate that in order to prevent omissions in diagnostics and to improve prognosis, an overall patient examination is required, as well as suitable consultations with the relevant specialists, dynamic monitoring and re-evaluation of patient's status in conformity with ATLS principles.

The traumatic agent force determines primary injuries of organs or of soft tissues, as well as of fractures (primary "hit"). This is connected with a local tissue injury, as well as with activating the system immune response [17, 18]. Secondary exogenic and endogenic factors play a major role in initiating and severity of progress of post traumatic complications. Typical endogenic secondary "hits" are respiratory distress with hypoxia, repeated cardiovascular instability, metabolic acidosis, ischemia / reperfusion damages, unviable tissues, infections as a result of contaminated catheters, tubes etc. [17, 18].

According to most studies, knowing the mechanism of injury is a significant component in evaluation of traumatic patients status [15, 19, 20]. In case of falling from a height of 3 or more meters, there is a high risk of presence of spinal cord trauma, of long bones and pelvis trauma [8]. A RTA with anterior-posterior hit, as well as with incident at a sudden slowing down the car are also alarming [19]. Therefore, diagnostics of some potential life threatening injuries (especially mediastinal) is based on: mechanism of trauma, radiography of the thorax or ultrasound examination [17]. According to Perry [8], clinical study and repeated radiography of the thorax are not so reliable in estimation of the thorax status, and the estimation of abdominal area status may also be too difficult, especially if the patient is unsociable.

Most studies confirm the thesis that brain injury is more likely at high energy traumas - RTA, height traumas and also in cases of more serious facial skeleton injuries [15, 20]. Our study confirms the role of alcohol influence as a co-factor for CMFT appearance. From the results obtained it is evident that patients with alcohol related injuries are often patients of MFS Wards. Our study regarding CMFT etiology indicates the large percentage of injuries as a result of thrash - 38.8%.

This study shows that no significant differences are determined in combined trauma patients according to use of alcohol (x2, p=0.478)

CONCLUSION

Early inclusion of maxillofacial surgeon is extremely important and plays responsible role in diagnostics, planning and performing of therapy of polytraumatiezed patients. CMFT require an early multidisciplinary approach because of maxillofacial area iniquity, determined by proximity of multiple crucial anatomic structures. Maxillofacial surgeon must perform an integral role in interdisciplinary traumatic patients treatment. The advantage for existence of such team of specialists is in creating of coordinated protocols in combined work, as well as in more arranged and logical approach in these patients treatment.

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