

PATTERNS OF MAXILLOFACIAL INJURIES IN UNIVERSITY HOSPITAL 'ST. ANNA', SOFIA

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ABSTRACT:

Purpose: To compare the etiology, presentation, type of trauma in Department of maxillofacial surgery, University Hospital 'St. Anna', Sofia over a period of 4 years.

Materials and methods: During the period of from 01.05.2005 -31.01.2009 276 patients with maxillofacial injuries were identified from Department of maxillofacial surgery, University Hospital St. Anna, Sofia. Patients were grouped into the following categories: age, gender, etiologies, soft tissues injuries, type and location of fracture and associated injuries.

Results: There were a total of 276 patients. Of these 216 were male and 60 were female with the mean age of 10-85 years. A total 216 bone fractures were identified. Of these 49 were zygomatic complex fractures, 15 orbital blow out fractures, 70 mandible fractures, 66 nasal complex fractures.

There was increase in the number of nasal and mandible fractures over the 4 years period. The most common cause of injury was assault followed by road traffic accident. We will present a detailed analysis of other patterns of injuries.

Conclusion: The changing pattern of trauma has several implications for injury prevention as well as surgical training. Our study highlights the areas which will require further focus in any future local health strategy.

Key words: maxillofacial injuries, associated trauma, pattern

PURPOSE:

The aim of this study is to describe the patterns of facial injuries presenting to the Department of Maxillo-facial surgery, 'St. Anna' University Hospital, Sofia and to identify risk indicators for maxillofacial trauma.

MATERIALS AND METHODS:

Patients referred to our department for the treatment of maxillofacial injuries from 2005 to 2009 were retrospectively analyzed. Age, sex, cause of injury, anatomic location of facial trauma and alcohol involvement were recorded. Demographic data, drug and alcohol impairment screening, and comorbidity data were obtained from database

searches of trauma records.

Associated injuries were subdivided into orthopedic, neurological and abdominal injuries.

RESULTS:

The number of facial fractures treated in the Department of Maxillo-facial surgery, 'St. Anna' Hospital annually almost doubled over the 4-years study period (2005 to 2009).

The high proportion of males (78%) in our study was hardly surprising. The sex distribution showed an overall male-to-female ratio of 3.6:1 and those in the age group most affected were between 20 and 55 years of age.

Fig. 1. Gender

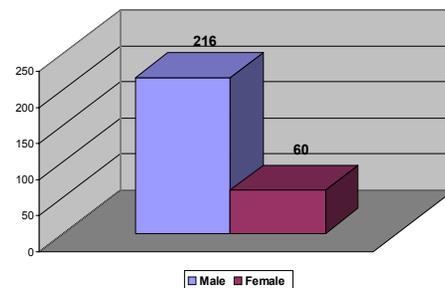


Fig. 2. Gender

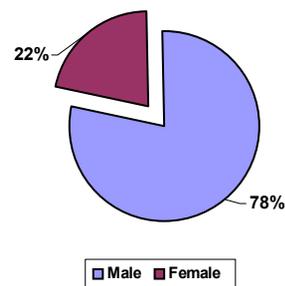
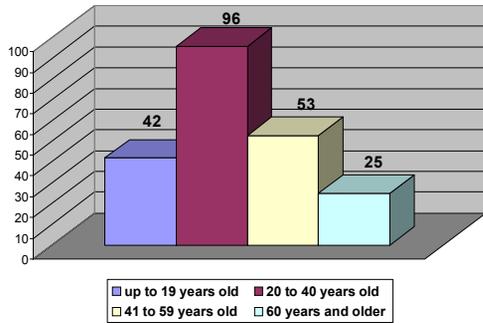


Fig. 3 Age

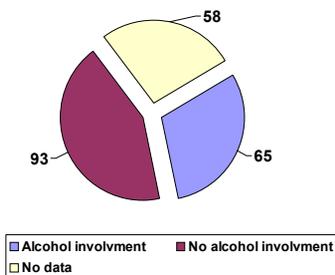


This is only one example of the well known phenomenon of the male preponderance in facial trauma.

Forty percent of those presenting with maxillofacial injuries were aged between 20 and 40 years.

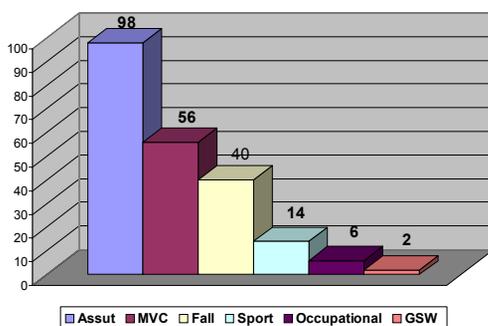
Interpersonal violence and road traffic accidents were the most frequent causes of facial fractures. The high proportion of violence (assault) is quite unusual; in most comparable studies, vehicle accidents were predominant cause of injury. Alcohol consumption was associated with just over 1/3 of all cases, and was strongly associated with interpersonal violence and road traffic accidents.

Fig. 4. Traumas related with alcohol consumption



The most common etiology of trauma was assault (98), followed by motor vehicle collision (MVC) (56), fall (40), sports (14), occupational (6), and gunshot wound (GSW) (2).

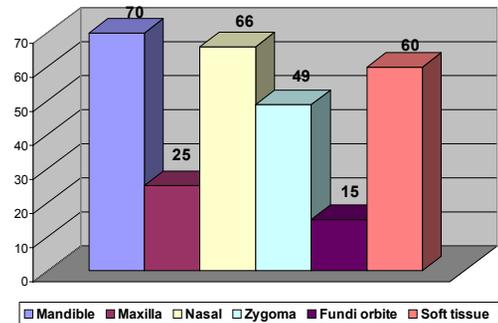
Fig. 5. Etiology



The most common fracture type was mandible fractures (70), followed by nasal bone fracture (66). Fifteen of them had lacerations; four others had only facial abrasions.

MVC was found to be a significant predictor of panfacial fractures, as was GSW. Sports injuries were a significant predictor of isolated upper midface fractures, and assault was a significant predictor for isolated mandible fractures. MVC and GSW each were found to lead to significantly higher severity of injury than assault, fall, and sports.

Fig. 6. Type of injury

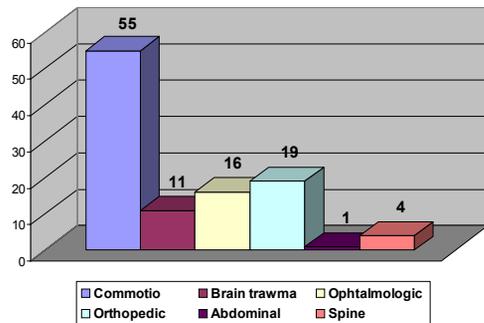


The probability of sustaining maxillofacial trauma at work is correlated to the nature of the occupation. Individuals (mostly men) using tools or machines at work are exposed to a much higher risk of work-related maxillofacial trauma.

Road traffic accidents continue to be one of the leading causes of maxillofacial fractures. Use of airbags is associated with less severe maxillofacial injuries compared with either a seat belt alone or no restraint. There is an inherent risk of minor maxillofacial injuries with airbag usage, but the severity of injury is distinctly reduced.

Associated injuries were common and include facial lacerations, non-mandible facial bone fractures, intracranial injury, internal injuries, fractures of the upper limb, fractures of the lower extremity, and cervical fractures. The clinician should maintain a high level of suspicion for associated injuries that occur more than one fourth of the time and even more frequently in motor vehicle accident victims. Associated intracranial injury is particularly important to rule out. Associated facial fractures, intracranial injury, internal injuries, and extremity injuries are all more common than cervical fractures. The most frequent other associated injuries recorded were orthopedic and head injuries.

Fig. 7. Associated injuries



The late presentation for treatment appears to be related to the rural and semi-urban dwelling of the patients and the attendant transportation and economic difficulties.

Eighty-three percent of patients with maxillofacial injuries required an operative intervention during their hospitalization.

CONCLUSION:

Presentation of patients with facial fractures at the Department of Maxillofacial surgery, 'St. Anna' Hospital almost doubled over the 4 years. Risk indicators for presentation with a maxillofacial fracture included male gender, alcohol consumption, and interpersonal violence. There is an urgent need for appropriate health promotion to reduce interpersonal violence. There is a need to reinforce legislation aimed to prevent MVA and the total enforcement of existing laws to reduce maxillofacial injuries among children and adolescents.

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