FACIAL FRACTURES AND RELATED INJURIES IN DEPARTMENT OF MAXILLO-FACIAL SURGERY, UNIVERSITY HOSPITAL 'ST. ANNA', SOFIA

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ABSTRACT:

Maxillofacial fractures often occur with serious concomitant injury in trauma patients, and knowledge of the type and severity of associated injuries can assist in rapid assessment and treatment. The objective was to identify the most commonly occurring injuries associated with facial fractures in severely injured trauma patients.

Key words: maxillofacial trauma, associated injuries

INTRODUCTION:

The recently published literature contains several investigations dealing with associated injuries in patients who have sustained facial injuries in general and facial fractures in particular. Comprehensive analyses of associated injuries in patients with facial fractures are scarce.

PURPOSE:

A retrospective analysis of 276 patients was performed and associated injuries was detected to 87 patients with midface or mandibular fractures. The aim of our investigation is to illustrate the multisystem nature of traumatic injuries associated with fracture of the facial skeleton, covering the period from 2005 to 2009. Knowledge of these associated injuries provides useful strategies for patient care and prevention of further complications. A multidisciplinary and coordinated approach is important for optimum stabilization and ongoing treatment of patients with facial fractures.

MATERIALS AND METHODS:

We report polytraumatized patients- 87 who had sustained oral or maxillofacial trauma with concomitant injuries for 4 years period. Hospital records were reviewed for all patients with associated injuries who were admitted to the Department of maxillo-facial surgery, University Hospital 'St. Anna', Sofia.

RESULTS:

A retrospective analysis was made for 87 patients. The largest number of patients belonged to the age group 20 to 30 years. (Fig.1)

Fig. 1. Distribution according to age.

The great majority was male- 72%. The male to female ratio was 2.7:1.(Fig. 2)

Fig. 2. Analysis according to gender.

Our experience presented (as epidemiological information) that the predominant mechanism of injury is motor vehicle accidents (42%) rather than assault (36,8%), fall(12,6%), sports(4,6%).(Fig. 3)

Fig. 3. Distribution according to mechanism of trauma.

The most common fracture types were exclusively mandibular fracture(72) followed by nasal(66), zygoma complex fracture(45) and maxilla fractures(25). Some of patiets were with more than one bone fracture.(Fig. 4)

Distribution of the types of trauma for the period

Fig. 4. Distribution according type of maxillofacial trauma trauma for the periods

The most frequently associated injury was closed head trauma with documented loss of consciousness (63%), followed by extremity fractures (22%), ophthalmologic injuries (18%), traumatic brain injuries (13%), and cervical spine injuries (5%), abdominal injuries (1%).(Fig.5)

Fig. 5. Distribution of associated injuries for the period.

DISCUSSION

Related injuries was observed in almost1/3 (34,8%)of the trauma patients in the present study which. The highest incidence was in the 20-30 years age group. The most common mechanism of trauma in our investigation was motor vehicle incident (42%), followed by assault and confirmed the results of the other authors for high speed trauma mechanism in associated injuries.

The most common category of concomitant injury was closed head trauma with documented loss of consciousness (63%). We observed that cerebral hematoma and subdural hematoma was not so frequent.

Although cervical spine injury is rarely associated with maxillofacial traumas we observed in our investigation, it should be suspected when injuries above the clavicle occur. In 90% of the cases, the cervical spine injury was caused by a road accident. The typical patient with concomitant neck and facial trauma is male, 40 years old, and usually involved in a traffic accident. Cervical spine injuries were diagnosed using lateral x-rays in three cases and with computed tomography in the remaining patients. Our findings indicate that the site of trauma greatly influences the severity of hyperextension spinal cord injury. Although an association has been reported between mandible fracture and cervical spine injury, we did not observe a preferential association between injuries of the lower third of the face and spinal injury. Cervical spine immobilization should never be removed until cervical spine injury has been excluded using a lateral x-ray of the cervical spine. In males with significant blunt craniomaxillofacial trauma caused by high-energy impact accidents such as car and motorcycle accidents, computed tomography is the radiological examination of first choice to exclude cervical spine injuries and intracranial hematoma. Lastly, the presence of a cervical spine injury - acute hyperextension spinal cord injury without bone damage did not result in modified or delayed treatment of maxillofacial fractures.

Clinical ocular findings and injuries are a relatively common complication of orbitozygomatic fractures, occurring in 19 (18%) patients in this study. These injuries occur more often in patients with orbital blow out fractures compared with comminuted orbitozygomatic complex fractures or simple orbitozygomatic complex fractures. Ophthalmology consultation is recommended for all patients presenting with orbitozygomatic fractures, and is essential for patients with orbital blowout fractures, based on the high incidence of clinical ocular findings and injuries in this subgroup of patients.

Commonly occurring categories of injury included: extremity fracture, rib or sternum fracture, and pelvic fractures. Abdominal organ injury, pneumothorax, pulmonary contusion, spine fracture were rarely detected.

It is mandatory that the surgical team should be organized in the treatment of patients with concomitant injuries coexisting with maxillofacial fractures. There was no significant difference in day of operation for the management of facial fractures between those with isolated facial injuries and those with other concomitant injuries.

CONCLUSION:

The analysis of conducted therapeutic work and previous experience allows suggesting the medical tactics concerning the problems of terms, methods and volume of specialized care rendered to the patients with combined maxillofacial trauma. It implies that combined injury of jaws with other body segments requires rendering of specialized

care in whole volume, early periods, just immediately after getting the patient from shock.

Cerebral and pulmonary injuries are often associated with maxillofacial fractures in severely injured trauma patients. Knowledge of these associated injuries provides useful strategies for patient care and prevention of further complications. A multidisciplinary and coordinated approach is important for optimum stabilization and ongoing treatment of patients with facial fractures. The results of this study underline the importance of proper clinical and computed tomographic evaluation in cases of facial fractures for recognition of additional cervical spine trauma. Detection of cervical spine trauma can be missed, especially when pain or symptoms from other parts of the body dominate.

Pupillary involvement, papilloedema, and ocular motor paresis pointed to a more severe head injury. To our knowledge, this is the only prospective study recording ocular findings in the first few hours and attempting a correlation with the final outcome.

Fractures from motor vehicle collisions should never be viewed as an isolated injury but rather as part of a spectrum of significant and sometimes life-threatening injuries that require thorough trauma evaluation at the time of presentation. Surgical management of multiple traumatized patients with head and neck trauma is highly individualized and depends on a number of factors including etiology, intracranial pressure, concomitant injuries, patient age and the possibility of an interdisciplinary procedure.

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