Missile Injuries to the Lower Face, Incidence, Effects, Early Management and Possible Early Complications

A Thesis
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Abstract

Background:

In the recent few years there were increasing numbers of maxillofacial missile injuries in the city emergency rooms in our country.

Aims of Study:

The thesis demonstrates the incidence of missile injuries and the effect of missiles on mandible and the early management of patients suffering from missile injuries to the lower face region and registers the early complications resulted from these missiles.

Materials & Methods:

This prospective study was conducted in Al-Yarmouk Teaching Hospital in the period between Oct. 2006 to Oct. 2007, on (60) patients with missile injuries to the lower face region.

Results:

The male to female ratio was (6.5:1), age ranged from (3-72) years (mean 37.5 years). The majority of patients were injured by military rifles (28) representing (46.7%) of the injuries, causing perforating wounds in (19) patients. The bullets were the most common type of injured missile in (44) patients than shrapnels (16) patients at a bullet to shrapnel ratio of about (2.75:1). The perforating missile wounds were the most common wound type found in (36) patients about (60%) of the total missile wounds. Fifteen patients representing (25%) have only soft tissue wounds without bone fracture while (45) patients about (75%) have soft & hard tissue injury. The cheek was the most common missile inlet site found in (15) patients, while the body region of mandible was the most common outlet missile site occurred in (19) patients. The cheek was the most common site of settled missiles diagnosed in (5/14) patients with settled missiles. Floor of the mouth was the most commonly adjacent soft tissues injured structure occurred in (31.6%) of cases. Isolated mandibular fractures diagnosed in (35) patients and associated facial bone fractures were detected in (10) patients, of these, the maxillary bone was the most commonly fractured facial bone diagnosed in (7) patients. The most common mandibular fracture site was the body found in (30) patients. Seventy eight fractures were diagnosed in (45) patients with mandibular fractures giving a ratio of about (1.73) per patient. Single unilateral fracture occurred in (22) patients while multiple fractures diagnosed in (7) patients. Comminuted fractures were the most

common of these fractures representing about (76.9%) from the total number of fractures. Displaced fractured bone ends detected in (33) patients while undisplaced fractures diagnosed in the other (12) patients. Twenty patients about (33.3%) have at least one or more concomitant body injuries in which the eye was the most commonly injured structure found in (6) patients.

Most of the patients were conscious upon admission while only one patient was unconscious but respond to pain. (18) Patients about (30%) required urgent airway management, in that oral endotracheal intubation was done for the unconscious patient while tracheastomy was done to (17) patients. Airway intervention was mainly required in association with the perforating and avulsive wounds. The most common fracture site requiring urgent airway intervention was the angle of mandible (58.3%) while there was no need for urgent airway intervention when the fracture occurred in condyle, coronoid, or ramus sites and this relation was found statistically significant. Also, highly significant relationship was found between the need for urgent airway intervention and direction of missile path. Three patients about (5%) required immediate surgical intervention and exploration to arrest the active bleeding. Closed reduction was the most common modality of treatment done in (32) patients, in which the arch bars were the most common mean of fixation done in (23) patients. Primary closure was the most common modality of soft tissue treatment done in (48) patients about (80%) in that (92.3%) of penetrating wounds and (80.6%) of perforating wounds and all the lacerating wounds were closed primarily. Settled missiles were removed in (11) patients about (78.6%), and left within the tissues in the other (3) patients. Early complications were detected in (40) patients in that the complication rate was (66.7%) and the most common of these complications was inferior alveolar nerve deficit diagnosed in (28) patients about (46.6%).

Conclusions:

There was a statistically significant relationship between the missile velocity and the pattern of mandibular fractures. Highly significant relation was found between the wound type and modality of soft tissue treatment. Early complications were highly significant increased in patients with avulsive and perforated wounds and there was a statistically highly significant relationship between the missile velocity and early complications. In our study, the extent and outcome of missile injuries related to many factors, of these, the weapon type, the missile velocity and the anatomical path of missile were the most important.