Retrospective Cohort study of Mandibular fractures

Abstract

The craniofacial region is one of the most frequently injured parts of the body, and mandibular fractures is one of the commonest facial skeletal injuries. The reported diversity of their incidence and etiology is due to a range of environmental, cultural and socio-economic factors. Over the years numerous authors have described different treatment modalities for managing these fractures ranging from close reduction only to open reduction with plates and screw. This study will investigate the epidemiology, treatment methods, postoperative complications and association of mandibular fractures with other facial skeleton fractures.

Purpose：

The aims of this retrospective study to comprehensively evaluate the clinical epidemiology of mandibular fractures, treatments, and outcomes. Well understanding of the problem can advance the prediction of the fracture patterns, the impact of diagnoses and the treatments in a way leading to the prevention of the mandibular fractures and associated complication. By this we can make a Database for researchers and government to be used in future.

Methods:

All patients with Mandibular fractures MFs during the past five years (starting from January 2013) treated at In-patients department of Tianjin Stomatological Hospital of Nankai University were Included in this study. The predictor variables were age, gender, Ethnicity, etiology, and type of treatment methods for various sites of MFs. The outcome variables were postoperative complications of different MFs and number of corrective revision surgery. Inclusion criteria were 1- All age-group patients treated at this period. 2.All patients treated at In-patient department with Mandibular Fractures and receive follow up. Exclusion criteria were 1-Patients with incomplete Information. 2- Patients received Primary treatment in other hospital and subject to plate removal in our hospital.

3- Patients Reject treatment. 4- Patients transfer to other hospital for priority treatment of other problems.

Results:

211 patients with 301 mandibular fractures were identified in this study with a mean of 1.42 (±0.4465) fracture per mandible. Han ethnic group accounted for 95.7%. Male/female ratio was 3:1 with the third decade accounted for 30.9%. Traffic accidents (40.8%) were the most common etiology followed by falls. Symphysis/ parasymphysis (29.3%) and mandibular body (26.24%) were the most common fracture sites. More than 83.8% of the patients received surgical interventions, while the remaining treated non-surgically. The complication rate was 26.5% with teeth loosewas the most common complication (11.8%) followed by nerve damage (5.8%) and infection (5.6%).There was no significant difference between the administration of antibiotics and the incidence of postoperative infection (P = 0.289). The overall complications rate was statistically significant among systemic diseased and allergic patients than among healthy individuals (P=0.012). The complication rate was also statistically significant in patients with multiple mandibular fractures versus those with single fracture (P=0.017). Malocclusion was significant with closed reduction particularly those with combined condyle fracture (P =0.032).

Conclusions:

In conclusion, a well understanding of the epidemiology of mandibular fractures and variables' correlations are clinically significant in advancing the prediction, diagnosis, treatment and prevention of mandibular fractures in a specific population. The severity of trauma, medical health, interval to repairing and behaviors are significantly affecting the outcomes of mandibular fracture repair. Social, cultural, and economic factors are also affecting the treatment choices and subsequently the outcomes. Closed reduction was significantly associated with malocclusion particularly closed reduction of condylar fractures. ORIF with miniplate is reliable and recommended for compound fracture particularly those with a high interval to the repair. Antibiotic therapeutic effect against infection in MFs remains suspected.

Key words:Mandibular Fracture; Epidemiology; Treatment; Outcomes; Complication; Open reduction; Closed reduction.

Originality Statement of the Thesis of Nankai University

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