

POST MANAGEMENT COMPLICATIONS OF FRACTURE MANDIBLE AT THE ANGLE – AN ANALYSIS

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ABSTRACT

The aim of the study was to investigate post management complications of the fracture of mandible at the angle. Age and sex distribution was also studied.

750 patients who suffered maxillofacial trauma were seen during the period 1991-97 at Khyber College of Dentistry, Peshawar. 546 had mandibular fractures, 125 of these showed fracture at the angle. 20 (16%) suffered from some kind of complications. Break up showed five (25%) suffered from infection, seven (35%) had delayed union, one (5%) non-union, two (10%) showed malunion/ malocclusion, two (10%) trismus and three (15%) anesthesia / paraesthesia. Study subjects from 21-30 years showed highest (46%) prevalence of management complications. Males dominated females 4:1. RTA remained highest causative factor in the fracture (65.20 %).

Key words: Mandible fracture, angle, complications

INTRODUCTION

Mandible is the most vulnerable part of the face to the maxillofacial trauma. Angle of the jaw is more susceptible to fracture. Main complications are infection, delayed union, malunion, deformity, disorder of occlusion, impaired function of temporomandibular joint and anesthesia of lower lip. In a study analysis for complications in 96 patients with mandibular angle fractures treated overall complication rate was 17%. Infection was the most common complication, occurred in 17 fractures.¹ Fractures of the mandibular angle are plagued with the highest rate of complication of all mandibular fractures. Open reduction and internal fixation using a single miniplate, are associated with the fewest complications.² The rate of major complications are higher in comminuted fractures (17%) than that in simple mandibular fractures (2.3%).³ Rate of complications for the Transoral and extra oral treatment approaches for the angle fracture were found similar.⁴ According to a study similar osteosynthesis

failure rates were shown for one miniplate and 2 miniplate used to treat the mandible fractures.⁵

METHODOLOGY

This study was carried out in the Department of Oral and Maxillofacial Surgery, Khyber College of Dentistry during 1991-97. 750 patients who suffered from maxillofacial trauma were included in the study. The diagnostic criteria was history, signs and symptoms, clinical examination and different views of extra oral and intra oral radiographs i.e. orthopantomogram, posteroanterior view, occlusal view (mandibular). All patients with the fracture of mandible irrespective of the approach to its treatment were included in the study. All medically compromised patients like diabetics', renal failure, patients with malignancy and patients with pathological fracture were excluded.

RESULTS

Out of 546 mandibular fractures, 125 had angle fracture. Only 20 cases suffered from some kind of

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complications (16%), five from infection, seven for delayed union, one for non-union, two for malunion/malocclusion, two from trismus and three from anesthesia/paraesthesia.

Infection cases were treated with drainage, extraction of 3rd molar in fracture line, and antibiotic therapy. Delayed union was treated according to the cause with the removal of the fibrous tissue interpositioning through exposure of the fracture line, and increasing duration of immobilization. Malocclusion cases were treated by horizontal osteotomy, and occlusal splint with intermaxillary fixation restricted mouth opening cases were dealt with exercise. Two cases of anesthesia were followed for six month for spontaneous recovery which occurred. Only one patient did not show recovery who had suffered from trauma by fire arm injury. A case of non union was treated by corticocancellous graft from iliac crest.

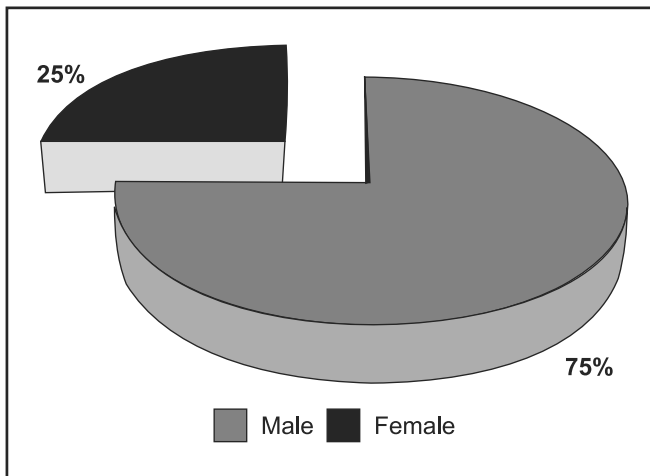


Fig 1: Gender distribution

TABLE 1: COMPLICATIONS ACCORDING TO TYPE

S. No	Complication	Number of patients	Percentage
1	Infection	05	4%
2	Delayed Union	07	5.6%
3	Non-union	01	0.8%
4	Malunion/Malocclusion	02	1.6%
5	Trismus	02	1.6%
6	Anesthesia/Paraesthesia	03	2.4%
7	No Complication	105	84.0%
	TOTAL	125	100%

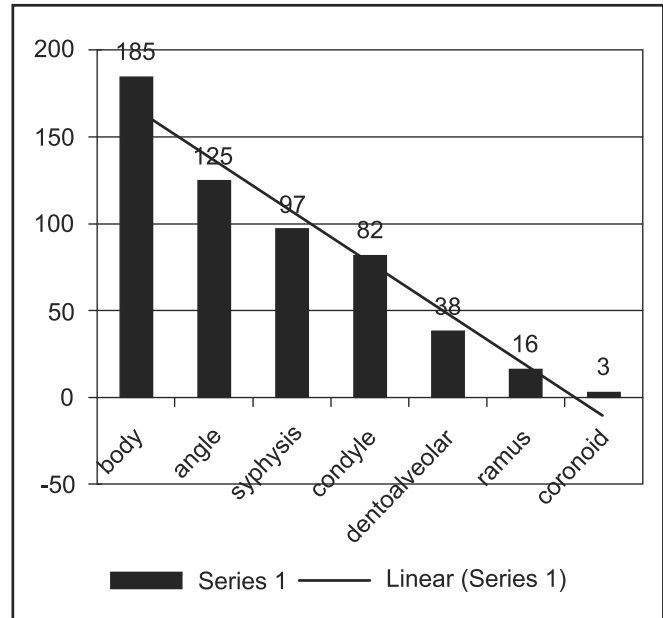


Fig 2: Distribution of mandibular fracture

DISCUSSION

Mandibular fracture at the angle due to any cause is treated by closed or open reduction either through intraoral or extraoral approach and is always prone to complications. This morbidity ranges from mild swelling to severe infection, delayed union to non union.

The high incidence of delayed union and infection found in this investigation agree with the results of Biller et al. Of the 84 patients in that study, 11 had infectious and 10 had technical complications. The incidence of technical complications was remarkably higher in patients repaired after 3 days.⁶

Chamber and Skully stated that in their study infection occurred in 40.3% of the patients and contributed significantly to the high prevalence of delayed and non union. The high incidence of infection may be due to long delay between injury and definitive treatment and the absence of prophylactic antibiotic therapy, the frequent existence of concomitant soft tissue injuries, unclean environment and lack of wound hygiene during transfer to the maxillofacial unit. Present study reported 20 cases out of 125 with complications comprising 5 cases of infections which coincides with the study of Fox and Kellman who reported two patients (2.9%) developed infection. One patient was noted to have a serous yellow-tan drainage within the first week after surgery.⁷

In a Study by Iizuka and Lindqvist who evaluated 113 patients with angle fractures treated with lag screw fixation, compression plates, or neutral reconstruction plates, postoperative infection was identified in 8 cases (6.6%). The authors found an association with infection and the use of compression plates at the angle after tooth extraction in the fracture line.⁸

The lesser percentage of trismus 1.6% in this study differs from the work of Chamber and Skully who reported 8.7% cases. There were two cases of malunion/malocclusion reported in this study which differs with the study of Chamber and Skully who reported 15 cases of malunion. Present study also reported 3 cases of mandibular angle fracture with paraesthesia/anaesthesia which was due to the inferior dental nerve damage or compression.⁸ This study also differs with the work of Ellis and Sinn who reported 32% cases of infection, 18.46 % of delayed union and only 1.53% of malunion which later caused malocclusion.⁹ In the study of Jennifer Lamphier of the 594 fractures 79 cases (13.30%) suffered from complications. The most common complication was wound infection, which occurred in 35 cases, followed by nonunion, which occurred at 30 sites.¹⁰

CONCLUSION

Post management complications of the mandible fracture at the angle produce morbidity which is not only a financial burden but also increases the hospital stay, and weight loss due to lack of adequate food intake.

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