

Utility of Postoperative Mandibulomaxillary Fixation after Rigid Internal Fixation of Isolated Mandibular Fractures

Silviu C. Diaconu, MD; Benjamin Barbetta, DDS, MD; Nicholas Wilken, DDS; Robin Yang, DDS, MD; Arvind Gowda, BS; Michael R. Christy, MD; Arthur J. Nam, MD, MS

Disclosure/Financial Support: No financial support. None of the authors has a financial interest in any of the products, devices, or drugs mentioned in this manuscript.

INTRODUCTION: The goal of treating mandibular fracture centers on re-establishing continuity of the mandible for bony union and occlusion. Many maxillofacial surgeons feel unnecessary to place the patients on post-surgical mandibulomaxillary fixation (MMF) after open reduction and stable internal fixation (ORIF). However, many feel necessary to add MMF after rigid internal fixation for improved follow up visit, and 'soft tissue rest' which may be associated with decreased wound complications.^{1,2} The purpose of this study is to retrospectively analyze if patients undergoing ORIF with post-operative MMF have improved outcome compared with those treated with ORIF alone at a major trauma center.

MATERIALS AND METHODS: A two-year retrospective review was performed on mandibular fractures which were treated by Division of Plastic, Reconstructive & Maxillofacial Surgery at R. Adams Cowley Shock Trauma Center / University of Maryland Medical Center, and Department of Oral & Maxillofacial Surgery. Patients who underwent ORIF of one or more mandibular fractures were included. Edentulous patients, and those who underwent non-rigid fixation or suffered other facial fractures were excluded. Two groups of patients were analyzed: one group was placed on MMF post-operatively after ORIF ('ORIF+MMF'); the other group had MMF removed intra-operatively after ORIF ('ORIF only'). Post-operative complications and follow up compliance were compared between these two groups.

RESULTS: A total of 100 patients were analyzed; 54 patients were in the ORIF+MMF group, and 46 patients were in the ORIF only group. Average follow up was 3.8 months. Average duration of MMF in ORIF+MMF group was 4.2 weeks (range 1 – 13.3wks). The difference between the two groups was compared using an unpaired t test and $p < 0.05$ for significance. The two groups were similar in terms of age, sex, weight, number of fractures, and smoking status ($P < 0.05$). There was no significant difference in post-operative complications between the two groups ($P = 0.45$); with 22 complications in ORIF+MMF group and 13 complications in ORIF only group. Follow-up compliance was higher in the ORIF+MMF group with 3 patients lost to follow-up compared to 9 in the ORIF only group ($P < 0.05$).

CONCLUSION: This study showed that post-operative MMF does not improve clinical outcome after ORIF in dentate patients with isolated mandible fractures. However, the use of post-operative MMF may improve follow-up rates.

REFERENCES:

1. Shenoy NA, Shah N, Shah J. A questionnaire survey on postoperative intermaxillary fixation in mandibular trauma: Is its use based on evidence? *Natl J Maxillofac Surg.* 2011;2(2):141-146.
2. Saman M, Kadakia S, Ducic Y. Postoperative maxillomandibular fixation after open reduction of mandible fractures. *JAMA Facial Plast Surg.* 2014;16(6):410-413.