ABSTRACT

TITLE:

A randomized controlled trial for comparing the use of rectangular grid plates versus conventional linear miniplates for fracture fixation in patients with mandibular angle fracture.

AIM AND OBJECTIVES:

The aim of study is to compare the treatment outcomes such as inferior border flaring, interfragmentary mobility and complications such as ease, duration of plate fixation, mouth opening, infection, paraesthesia, plate fracture, screw loosening, malunion and non-union between conventional linear miniplate and rectangular grid plates in open reduction and internal fixation of mandibular angle fracture.

MATERIALS AND METHODS:

A Randomized Controlled Trial of 52 patients was conducted. The patients were divided into two groups depending on the plates used for the fixation of angle fractures as Group 1 and Group 2. In group 1, 26 patients were treated with linear conventional miniplates and in group 2, 26 patients were treated with 3d rectangular grid plates. Patients are followed up through 1 week, 1st month and 3rd month post operatively. All patients who are included in the study underwent CBVT and any displacement in the fractured angle is noted. All patients are evaluated for observational variables such as Inter fragmentary mobility, Mouth opening, ease and Duration of plate fixation, Complications such as infection, paraesthesia, screw loosening are assessed and recorded.

RESULTS AND INTERPRETATION

Significant difference was noted in the Ease and Duration of plate fixation, inferior border flaring and the rate of infection and dehiscence between two groups. CBVT measurements proved that inferior border flaring is more in linear plates (group-1) and less in 3D plates (group -2) with P value < 0.05. Operating surgeon's felt that linear plates were easy and faster to fix compared to 3D plates. Rate of infection and dehiscence were more in linear plates when compared to 3D plates. There was no significant difference found between 2 groups in terms of inter fragmentary mobility, paraesthesia, screw loosening, non/mal union.

CONCLUSION

The study concludes by stating that 3D rectangular grid plates can be considered as an effective alternative for conventional linear plates in fixation of angle fractures with better stability, minimal inferior border flaring and lesser post operative complications.

. **KEYWORDS**

3D rectangular grid plates, conventional linear miniplates, inferior border flaring.