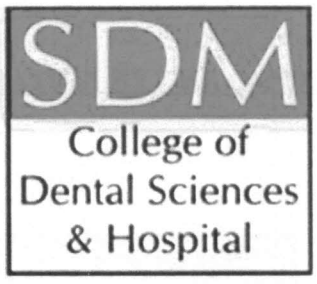



# "CRITERIA FOR SELECTING NUMBER OF FIXATION SITES IN ZYGOMATICO-MAXILLARY FRACTURES- A PROSPECTIVE STUDY"

by

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# ABSTRACT

**Introduction:** Zygomaticomaxillary complex (ZMC) fractures are a group of fractures that can significantly alter the structure, function and appearance of the midface. Like other facial fractures, the optimal management of operative ZMC fractures requires anatomic reduction of all fractures followed by rigid internal fixation. This study has been designed to assess criteria for selecting number of fixation sites while analyzing the zygomaticomaxillary complex fractures.

**Materials and Methods:** In this prospective study 42 patients with unilateral isolated ZMC fractures with no associated fractures were included. The study period was between November 2014 to September 2016. Preoperative assessment of all patients were done using clinical examination, photographs, CT scans and conventional radiographs( PNS). Patients were treated using 1 point, 2 point and 3 point fixation. Then, the number of fixation sites used were compared to the preoperative parameters such as mouth opening, paresthesia, frontozygomatic sutural diastasis, occlusion, infraorbital and zygomatico maxillary buttress step deformity. Statistical analysis was done using Chi Square and ANOVA test.

**Results**:

Thirty three (78%) out of the forty two patients were male. Road traffic accident was the most common etiology (85%). Malar depression was seen in 85% of the patients and patients who did not exhibit malar depression underwent 1 point fixation. the mean preoperative mouth opening who required 1point, 2point, 3point were 3.44cm,

2.69cm and 2.94cm respectively. Occlusion was maintained in 69% of the patients and patients who underwent 1 point fixation exhibited maintained occlusion predominantly. Infraorbital nerve paresthesia was seen only in 3 out of the total number of patients and the comparison was not significant. Step deformity in the zygomatico- maxillary buttress was absent in only 3 cases and those patients underwent 1 point fixation. Step deformity in infraorbital rim was absent in 10 patients and in 8 cases 1- point fixation was performed, in 1 case 2 point fixation and in 1 case 3 point fixation was done. The mean fronto- zygomatic suture diastasis in patients who underwent 1 point, 2 point, 3 point are 0.24±0.12cm, 0.30±0.14cms and 0.55±0.48cms respectively

**Conclusion** :

After assessment of the above mentioned parameters the following criteria were derived 1 point fixation can be done in cases where:

1. Malar depression is absent
2. Occlusion is maintained.
3. Step deformity only at one site( either ZM buttress/ infraorbital rim) with a frontozygomatic sutural diastasis of 0.24 ±0.12 cms.

2 point fixation can be done in cases where:

1. Mild malar depression
2. Step deformity at one or two sites (ZM buttress/ infraorbital rim) with a frontozygomatic suture diastasis of 0.30 ± 0.14 cms.

3 point fixation can be done in cases where:

1. Considerable Malar depression.
   Step deformity at both the sites (ZM buttress and infraorbital rim) with a frontozygomatic suture diastasis of 0.55 ± 0.48cms.

**Key Words:** Zygomatico-maxillary complex fractures, fixation sites.