3D PLATES IN OMFS.A STUDY

Abstract

A second plate at a lower level gives more results, while more complications are reported with 2 plates by others 2. Its biomechanical results have shown good stability in the fixation of mandibular angle fracture 3. It also has good stability. The biomechanical and technical constraints of the conventional rigid internal fixation devices have prompted the current study to evaluate the efficacy of the three-dimensional titanium mini plates 1.

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Preface: The history of treatment of facial bone fractures parallels the development of modern oral and maxillofacial surgery. The maxilla and mandible are the keystones to the bony architecture of the face, and the presence of teeth in the maxillofacial region makes the management of maxillofacial trauma unique compared to long bones. If put on the timeline the management of trauma has evolved greatly over the years from supportive bandages, splints, circummandibular wiring, and extraoral pins to rigid fixation and more lately semirigid.1,2,3,4,5,6 It was only after the second world war that the treatment modality changed from closed reduction to open reduction and direct fixation using bone plates and screws.7 Rather internal fixation was born of necessity, due to limitations imposed by closed reduction techniques. 3D plate provides good results on all surfaces. Its biomechanical results have shown good stability in the fixation of mandibular angle fractures.

Aim: Three D plates for management of fracture site

Purpose: 3d plates evaluation with post-surgical occlusion, and postoperative complications.

The Inclusion Criteria

- Patients of either trauma, orthognathic, reconstructive, or craniofacial surgery in which 3D plates are indicated.
- Gender: Both Males and females.
- Race: All races and ethnicities are eligible for study.
- Health status: Healthy patients are eligible for study.

The Exclusion Criteria

- Pre-existing Systemic Illness: patients that are immunocompromised, patients with systemic diseases like uncontrolled diabetes.
- Medically compromised patients

I. MATERIAL & METHOD OF DATA COLLECTION

This study includes 15 patients of either trauma, orthognathic, reconstructive, or craniofacial surgery, in which three-dimensional plates are indicated. A clinical history and on-patient examination of all the patients. whoever has maxillofacial fractures is advised to an OPG. They are checked for post-surgical occlusion and postoperative complications.

All patients are followed for 3 months postoperatively. The evaluation is done at respective times

1. Case Photographs

Pre-Surgical

2. Front Profile

Lateral Profile (Left)

Lateral Profile (Right)

3. Pre-Surgical

Pre-Surgical OPG

Pre-Surgical Occlusion

4. Pre-Surgical

Pre-Surgical Occlusion (Left)

Pre-Surgical Occlusion (Right)

5. Operative

Surface Marking

Fracture Line
Operative

Reduction with Three-Dimensional Mini Plate

Skin Suture

6. Post-Surgical

Front Profile

Lateral Profile (Left)

Lateral Profile (Right)

7. Post-Surgical

Post-Surgical OPG

Post-Surgical Occlusio

8. Post-Surgical

Post-Surgical Occlusion (Left)

Post-Surgical Occlusion (Right)

Table 1: Post-surgical occlusion (Follow-up)

	Satisfactory	Unsatisfactory
	No. (%)	**No. (%)**
1st day	10(66.66%)	5(33.34%)
7th day	14(93.33%)	1(6.67%)
1st month	15(100%)	0
3rd month	15(100%)	0

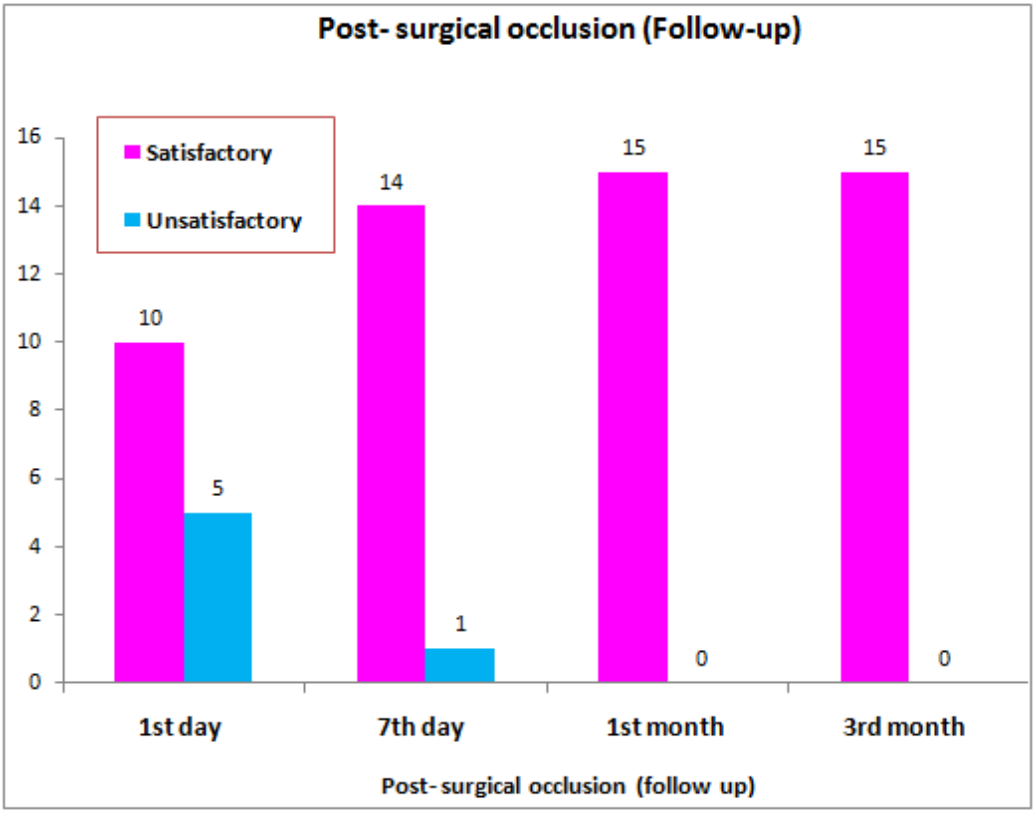
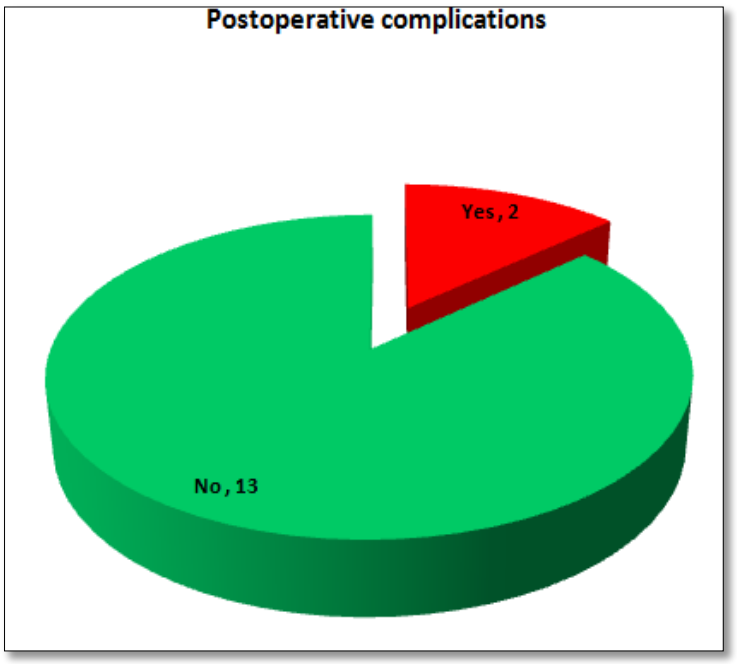


Table 2: Postoperative complications

	No. (%)
Yes	**2(13.33%)**
No	**13(86.67%)**
Total	**15**



II. RESULT

1. Post-Surgical Occlusion: Table No. 1 shows the comparison of post-surgical occlusion

Table No.3: By applying the Z test of difference, differ in the proportion of later surgical occlusion on the first, seventh day, first, and third Mon. ($p< 0.05$).

From the table, a total of 5 (33.34%) patients had occlusal discrepancy on 1st day postop, which was corrected by giving elastics & and it showed no discrepancy in 1st month follow-up. Only 1 (6.67%) patient had an occlusal discrepancy in the 7th day postop. which also showed no discrepancy in 1st month follow-up & and after 1st month postop no single patient had any occlusal discrepancy in the follow-up period. Hence post-surgical occlusion was satisfactory in all cases after the 1st month follow-up.

The same is illustrated in **Graph No. 1**

2. Postoperative Complications: Table No. 2 shows the post-operative complications

Table No.2: By applying the Z test of the difference between two proportions there are no significant postoperative complications in the study population ($p< 0.05$). From the table, we can see that, out of 15 patients, only 2 patients had postoperative complications (paresthesia), from which 1 patient showed normal sensation in the follow-up. but 1 patient still showing symptoms & and follow-up is going on for the same.

The same is illustrated in **Graph No. 2**

III. DISCUSSION

There is a reduction in vertical change .[19]In the present study, a total of 5 (33.34%) patients had unsatisfactory occlusion in 1st day postop. which was corrected by giving elastics and it showed no discrepancy in 1st month follow-up. Only 1 (6.67%) patient had unsatisfactory occlusion in 7th-day postop. which also showed no discrepancy in 1st month follow-up and after 1st month postop no single patient had any occlusal discrepancy in the follow-up period. Hence post-surgical occlusion was satisfactory in all cases. From the present study, we can see that, out of 15 patients only 2 patients had postoperative complications (paresthesia), from which 1 patient showed normal sensation in the follow-up. but 1 patient still showing symptoms and follow-up is going on for the same.

IV. SUMMARY & CONCLUSION

Lastly, these plates provide good stability and final results.A few post-operative complications were seen which were negligible Hence, in conclusion, three-dimensional mini plates are the best for segments in the maxillofacial region

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