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MANDIBULAR ANGLE FRACTURE;

COMPARISON OF COMPLICATION RATES OF INTRA ORAL AND TRANSBUCCAL APPROACH.

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ABSTRACT… Objectives: To compare the outcome of treatment of mandibular angle fracture by using intra oral, vs. transbuccal approaches in terms of complications. **Setting:** Oral & Maxillofacial surgery department, Faculty of dentistry Liaquat University of Medical & Health Sciences, Jamshoro/ Hyderabad. **Duration:** 1st March 2017 to 31st August 2017. **Design:** Randomized controlled trail. **Subject and Methods:** 180 patients consuming bilateral mandible angle fracture were involved in this study. 90 randomly allocated patients were managed with transbuccal approach and 90 managed by intra oral approach. Follow up was continued for each patient after every one week for 8 weeks. **Results:** The average age of the patients was 35.09±5.96 years. Rate of infection, malocclusion, scar formation, facial nerve injury and non-union was significantly low in transbuccal approach as compare to intra oral approach. **Conclusion:** In conclusion, transbuccal approach was preferred over the intra oral approach due to easy usage, negligible requirement for plate twisting, and enablement of plate engagement in the neutral mid-point zone.

Key words: Mal Occlusion, Mandibular Fractures, Intra Oral, Transbuccal Approach.

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INTRODUCTION

Angle fracture is the second most usual site of fracture mandible and linked with elevated proportion of complication.[1,2] Reason of mandibular fracture arises as an upshot of road traffic calamity, assault, and interpersonal violence; they are also precipitated by heavy consumption of alcohol, drug abuse and inadequate oral health.[3]

Variety of techniques can be used to treat this fracture such as intra oral, extra oral and transbuccal approach. Open reduction and internal fixation is the mode of superiority for the handling of angle fracture.[5,6]

Mandibular angle fracture have higher complication rate than other mandibular fracture, incidence range from 0 to 32%, biomechanics of the angle make treatment difficult,[7,8]

Smoking, drinking alcohol, oral hygiene, deferral in getting to theater after injury, presence of wisdom tooth in the line of fracture, and degree of fracture displacement are the main culprits for increase rate of infection after angle fracture.[9]

Intraoral procedure implicates surgery through an incision set through the buccal mucosa and gingiva, transbuccal methodology involve an intraoral incision plus minor cut on facial covering, that allows the usage of transbuccal trocar to permit device (drill or screw driver) to delivered through it.[10] Minimal time consumption makes transbuccal method superior than other methods but it necessitate distinctive instruments, skilled surgeon and assistant. Transbuccal approach has no exterior damaging & also it permits straight visualization and validation of the wanted occlusion during settlement of miniplates.[11,12]

Purpose of this study is to compare the outcome of treatment of mandibular angle fracture by using intra oral, VS transbuccal approach in terms of union and complications. The technique which shows better outcome results was recommended

for adaptation in future for better management and outcome.

DATA COLLECTION PROCEDURE

All the patients those fulfilling the inclusion criteria was selected in the study. After gaining short-term history of period of ailment and checkup, permission was taken. Essential laboratory inquiries including radiology was carried out. Patients were haphazardly distributed into two assemblies by lottery method, patients in group one was managed with transbuccal approach and patients in group two was managed by intra oral approach. All the data regarding age, sex, mode of injury, duration of injury and complications was documented. Prophylactic antibiotic was given preoperatively. Treatment was performed by consultant surgeon with more than 5 years of experience in Oral and Maxillofacial surgery. After treatment patient was discharged after two days. Follow up was done every one week for 8 weeks.

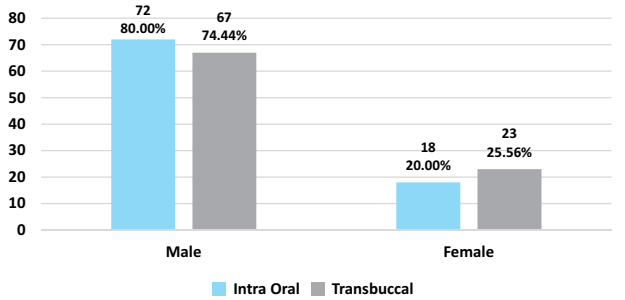

Figure-1. Shows gender distribution: n=180

RESULTS

Chi-Square test applied

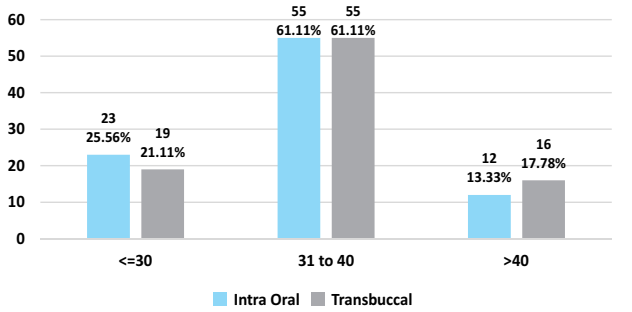

Figure-2. Shows age distribution: n=180

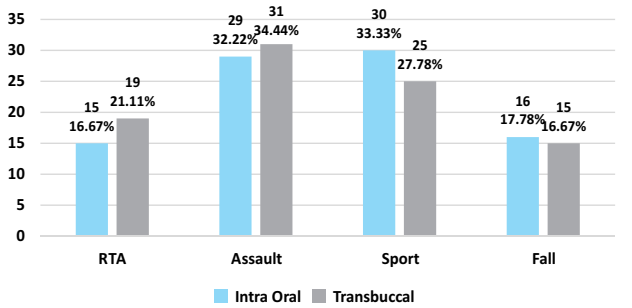

Figure-3. Shows mode of injury: n=180

DISCUSSION

In this study the middling age of the patients was 35.09±5.96 years. In Khandeparker et al[13] saw ages fluctuating between 17 to 53 years, with a mean age of 26.73 in a study over 60 patients.

There were 102(75.6%) male and 33(24.4%) female in present study. In this study regarding mode of injury, most of the patients were injured by assault and sport. RTA was the utmost seen etiological reason 86.7%) shadowed by assault (13.3%). The findings stood in support with a study lead by Kumar et al.[14] which described the configuration of orofacial fractures in 2,731

Complications	Intra Oral n=90	Transbuccal n=90	P-Value
Infection	16(17.8%)	6(6.7%)	0.023
Malocclusion	14(15.6%)	3(3.3%)	0.005
Scar Formation	8(8.9%)	1(1.1%)	0.017
Facial Nerve injury	9(10%)	2(2.2%)	0.029
Non Union	10(11.1%)	1(1.1%)	0.005

Table-I. Shows rate of complications: Comparison of the outcome (complications) of mandibular angle fracture between groups

patients.
In Khandeparker et al [13] the male to female ratio was 6:1. Road traffic accidents were the most frequent cause (n=2,086, 76%), followed by assault (n=260, 12%).

In present study rate of infection, malocclusion, scar formation, facial nerve injury and non-union was significantly low in transbuccal approach as compare to intra oral approach. In two studies Rehman B etal[15] mentioned complications of intra oral approach as infection 1(5.56%), Marginal Mandibular Nerve damage 0 (0%), malocclusion 2(11.10%), scar 0 (0%). Wan k et al [16] reported complications of transbuccal as fractured plate 2.70%, Loose screw or plate 7.6%, Infection 8.07%, Nonunion/malunion0.9%.

In transbuccal approach, none of patient advanced palsy of facial nerve, while 1 out of 227 (45%) settled a hypertrophic mark stated by Wan et al.[16] Sugar et al.[17] told parallel results in a group of 84 patients. No rate of facial scarring and facial nerve palsy from the transbuccal approach was prominent, while 1 incident (3.3%) of hypertrophic scarring and no occurrence of facial nerve palsy in group B.

Barry and Kearns[18] retrieved infected plate stated in 4 out of 50 patients. Ellis and Walker[19] reported infection happening inside two weeks of surgical procedure in 2 out of 81 patients.
The incidence of nonunion and malunion is between 1% and 2% in the literature.[20] Tooth in the line of fracture has been implicated among causes of non-union in mandibular fractures.[21]

Infection is the most common complication with mandibular fractures, especially those at the angle. Infections evaluated in all included studies, Infections were 8.1% with the transbuccal approach and 11.7% with the extraoral approach which could be due to enlarged operative period and inappropriate patient care and wound dehiscence.[74]

CONCLUSION

The transbuccal approach was superior to the intra oral approach with significantly low rate of infection, mal occlusion, scar formation, facial nerve injury and non-union. Transbuccal approach was favored over the intra oral approach due to ease of use, negligible necessity for plate bending, and easing of plate engagement in the neutral mid-point region.

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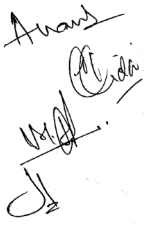
AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Anand Kumar	Principal author, Data collection, References.	
2	Syed Fida Hussain Shah	Assessment of complication.	
3	M. Hamid Ali	Data analysis.	
4	Syed Ghazanfar Hassan	Study design, Data collection, Results.	