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Comparative study on Dual surgeon versus single surgeon in maxillofacial trauma surgery

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Abstract:

Most surgeries in different departments are operated by dual surgeons , particularly for non-urgent, non-cancer surgeries. But when it comes to road traffic accident which leads to facial trauma , multiple fractures the case becomes an emergency which has to be treated right away , many a times number of surgeries are operated by single surgeon, operating with a second surgeon may reduce the chance of patient harm. Our study aims at determining whether any difference in outcome of surgical factors occurs in maxillofacial trauma. Thus also increase the confidence , achievement of occlusion and more importantly shorter duration of time.

Methods :

patients undergoing IMF from 2019 to 2021 were included. Patient demographics, X-ray and perioperative outcomes were collected and collated based on primary surgeon. Bind study was conducted for facial trauma for moderately displaced unfavorable fractures. Analysis was performed for single versus dual surgeons.

Keywords: Nil

Introduction:

The maxillofacial fractures involving dental occlusion are treated based on the intermaxillary fixation (IMF), aiming to re-establish the occlusal functions. The IMF, before the proper fracture reduction and fixation, is fixation, it has some disadvantages, such as difficulty maintaining good oral hygiene, periodontal ischaemic necrosis, loss of tooth vitality, dental extrusion, and high risk of stick needle injuries to the surgeon6 . Furthermore, Erich arch bars placement and postoperative maintenance can result in substantial discomfort for the patients, which can affect their quality of life.Advantages of this method were reported: ease of placement in a short time, lower financial cost, reduced risk of injury to the operator,[4] as well as reduced trauma to the gingival margins and easier oral hygiene maintenance for the patient, when compared with the Erich arch bar . However, a broad comparison between In this way, the quality and results reliability of the studies found in the literature were also analysed through GRADE assessment.

Operating with two surgeons:

In the healthcare field, working closely with experienced peers is not a novel concept. For many years colleagues have utilized the power of working within multidisciplinary teams (MDT) with good evidence that this improves patient outcomes.

Interaction with other clinicians enables shared decision making, supervision, mentorship, and the combination of skills. The need for dual surgeon operating is both procedure and operator dependant but can be guided by the surgical skills currency barometer and personal reflection.[3] Trainees must also take advantage of dual surgeon operating scenarios to observe and develop nontechnical skills including communication, team-working, and leadership.

Material and methods:

This blind prospective study analyzed 60 maxillofacial surgery patients (30 in each group), which was carried out in two centers from June 2019 to December 2021. Institutional ethical board

approval was obtained for this study. The two authors operated on all the patients. All patients in the dual attending surgeon group were operated, whereas in the single surgeon group, 24 patients were operated..

The exclusion criteria were patients who were undergoing revision surgery, and patients who refused to participate in the study. The objective of this study was to investigate the perioperative outcome of imfs patients who underwent posterior

(Group 1) versus a dual attending surgeon strategy (Group 2).

Results:

60 cases, performed by 4 surgeons were included. Two surgeons were highly experienced, 1 of whom was also high volume. Five cohorts were studied: a single senior high volume (S1) (n=45), dual-junior surgeons[1] (n=73), dual senior–junior (SJ) (n=36), dual-senior (DS) (n=21) and a single senior, standard-volume surgeon alone (S2) (n=87). Radiographic parameters were similar between the groups (p>0.05). Preoperative Cobb was signifcantly higher for DS compared to S1 (p=0.034) Pre- and post-op imf were similar (p>0.05). Cobb correction was similar (p>0.05). Levels fused, fixation points, anesthesia and surgical times were similar (p>0.05). When the standard-volume surgeon operated with a second surgeon, [2]radiographic parameters were similar (p>0.05), but anesthesia time, surgical time, and hospital length of stay were significantly shorter.

Groups	Time	Dual surgeon	Outcome	Resuturing	Infected plate removal	Post op infection	Intra armentarium cost	Responding time	Significance
Group 1 Dual surgeon	45mins	257.4± 52.3	Satisfactory and precise	0	0	0	less	On time	0.09
Group 2 Single surgeon	55mins - 60mins	Single surgeon 256.0+4 545.8	Satisfactory	0	6	0	More	On time	0.03

Discussion:

The evidence suggests that the manual reduction results in a better anatomical reduction, less occlusal disturbance, fewer revision procedures and less infective complications compared to the IMF and takes less operative time. Only four comparative studies were found, and they had an unclear risk of bias Our study reported patient reported outcome measures like the length of stay, quality of life or patient satisfaction.[4] A period of dual surgeon operating is likely to improve confidence and patient safety while surgeons regain currency.. All stakeholders should recognize the value of dual surgeon operating in the acute phase of returning to normal surgical capacity and how its implications for patient safety [.5],outcomes, and surgeon confidence. Additionally, the pooled expertise of two experienced surgeons decreases operating time[6-7]

During intermaxilary fixation achieving occlusion for the patients is bit more difficult and time taking if the assistant does not belong from the same background , here in our study we had dual surgeon assisting and holding the wire in exact position which is required . in our study we have evidence that its very beneficial in terms of time and efficient outcome of IMF .

.The need for dual surgeon operating is both procedure and operator dependant but can be guided by the surgical skills currency barometer and personal reflection.[6]In terms of saving the time

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during open reduction for maxillofacial fractures the time was saved and was managed very well.

While some may worry that this could impact training case numbers, except for the most complex and challenging cases. For low-volume, complex operating, routine dual surgeon operating allows surgeons to remain current for cases they would otherwise rarely encounter.

Conclusion:

Dual surgeon have better outcomes in terms of span of operating time where it was noticed the panfacial trauma were handled more precisely if assistant was from maxillofacial background , the occlusion was achieved better when compared to single surgeon .

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