



## Improvement of treatment methods of combined traumas of maxillofacial region

**V.V. Shamov, A.A. Kholikov, D.R. Fattayeva**

Tashkent State Dental Institute 5th year student

Tashkent 7 state 7 city clinical hospital

Tashkent State Dental Institute

### ABSTRACT

Improvement of methods of diagnostics and treatment of concomitant traumas of the maxillofacial region should be aimed at improving the quality of diagnosis for more accurate planning of surgery, reduction of traumatization during surgery, acceleration of rehabilitation period

### ARTICLE INFO

Received: 8<sup>th</sup> October 2022

Revised: 8<sup>th</sup> November 2022

Accepted: 13<sup>th</sup> December 2022

### KEY WORDS:

traumas of maxillofacial region, combined traumas, maxillofacial surgery

Initial assessment of a patient with combined trauma of Maxillofacial region is important.

Assessment in emergency room during primary survey is mainly clinically oriented to identify bleeding coming from soft tissues deep wounds, anterior epistaxis, and oral hemorrhages.

The supine position can mask posterior bleeding from oral or anterior nasal laceration, accumulated in the pharyngeal space. They have to be discovered through inspection and continuous suction of the pharynx, at the same time as the oral cavity evaluation to exclude possible displaced jaw fractures or mucosal lacerations.

Patients with severe cranio-maxillofacial injuries need to be given necessary out-of-hospital emergency treatment, such as rapid removal of oral and nasal secretions and foreign bodies to keep the respiratory tract unobstructed; establishment of emergency venous channels, timely infusion of balancing fluid, blood volume supplementation, correction of hemorrhagic shock; rapid identification of active bleeding points on maxillofacial wounds, clamp or pack compression to stop bleeding. 173 patients were treated by plastic surgery specialists (Department of Plastic Surgery, The First Hospital of China Medical University, No.155, Nanjing North Street, Shenyang 110001, China.), and under the multidisciplinary coordination with other related departments, especially emergency department, critical care medicine, anesthesiology, ophthalmology, neurosurgery, and orthopedics, the rescue was successful, and the reduction and internal fixation of jaw fractures achieved satisfactory results.

The multidisciplinary team (MDT) must be mainly composed of experts in the emergency department, trauma center, plastic surgery, neurosurgery, orthopedics, and ophthalmology. For patients with oral bleeding, respiratory obstruction and suffocation, the anesthesiologist was asked to perform emergency tracheal intubation to relieve the suffocation, debride, stop bleeding, and suture; if there was a hematoma in the neck or floor of the mouth, an emergency tracheotomy was performed; for the patients with spine

fractures, paid attention to avoid causing or aggravating cervical spinal cord injury during the inspection and handling;



Relatively conscious patients can blow blood stagnant in the pharynx, especially in moderate bleeding which can remain misdiagnosed for a long time with the late onset of vomiting and further risk for airways and “unclear” cervical lesions.

During the secondary survey, traditional radiology is obviously not indicated in complex facial fractures. Each patient who requires total body or brain CT, with concomitant external evidence of facial involvement, must be studied with thin-slice CT scan with additional tridimensional reconstruction. This is diagnostic gold standard especially in patients with middle third, orbital, cranial base, or panfacial

involvement. Contrast medium is unnecessary and no other additional information is given. Logically only stable or stabilized patients must be subject to CT.



It is concluded from the results of the study that axial, coronal and 3D computerized tomography is of crucial importance to assess the extent of maxillofacial trauma. It should be preferred for all suspected comminuted and displaced fractures over plain radiographs. 3D computerized tomography should also be advised for comminuted fractures of the mandible. The technique also offers to choose the suitable fixation methods during the surgery. It is not recommended for the diagnosis of minimally displaced fractures.

(Diagnostic Efficacy Of 3D CT Vs Conventional Radiographs In Maxillofacial Trauma -A Comparative study

1234 Md.K. Ansari , S.S. Ahmed , R. Kumar \*, Ekramullah)

Bleeding after facial trauma often goes away on its own, especially in patients with hypotension caused by concomitant bleeding from other sources. Thus, truly life-threatening bleeding in facial fractures is very rare (1.4 to 11% of severe facial injuries) [5, 6].

Although facial trauma is most visible, it is rarely an effective life-saving priority [7].

Prompt detection and rapid management of craniofacial bleeding is of paramount importance in ensuring safe access to the airway and in preventing increased blood loss, in the presence of other significant body injuries, with deterioration of hemodynamics.

However, its improvement, as well as rapid local hemostasis, should never interfere with the comprehensive work of the emergency care team in patients with concomitant and multiple injuries.

In any case, severe trauma should be treated as an evolving problem, and patients should be periodically reassessed after stabilization to confirm the effectiveness of treatment, i.e., after normal hemodynamic parameters have been restored.

The clinical evaluation begins with a specific hemorrhagic risk assessment based on a dynamic analysis of the injury and subsequent assumption of trauma, as well as a pharmacological and pathological history highlighting conditions that may lead to persistent bleeding.



In case of profuse rhino-oropharyngeal bleeding, if anterior-posterior nasal packing is immediately necessary, we suggest the use of modern silicone dual lumen devices (Bivona<sup>®</sup>), which can variably inflate (with air or physiologi-cal solution) separate balloons for the anterior and posterior nasal spaces.

Their positioning is fast, easy, and effective, with few reports in literature about its accidental intracranial ecto- pic placement, in patients with concomitant skull base injuries.

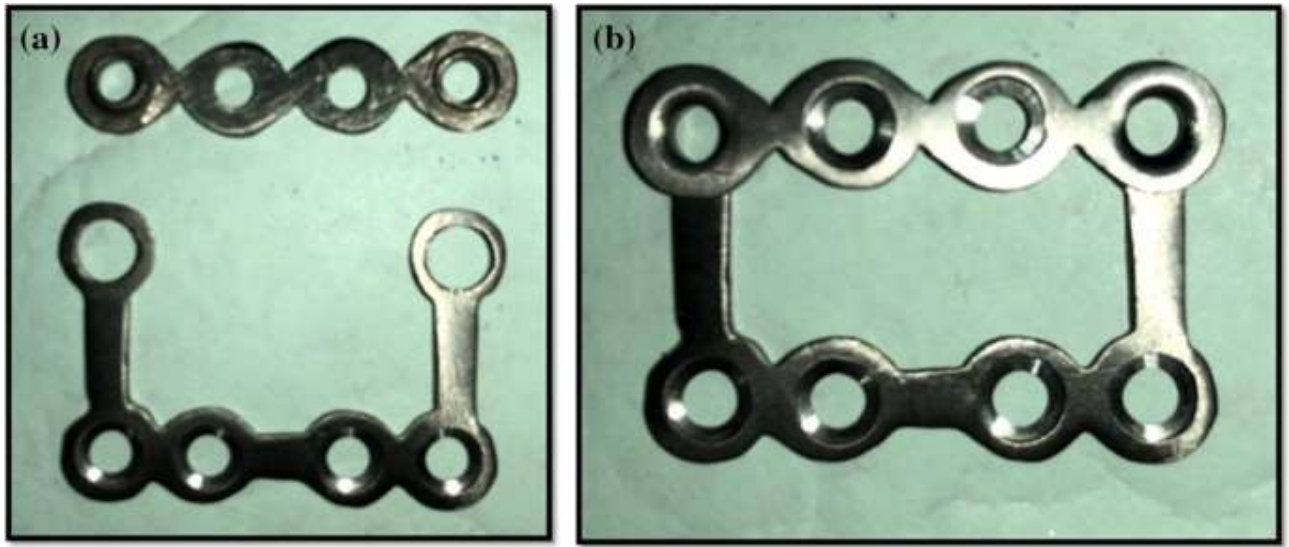
This enhances prudential attitude and formal contraindication in those patients with this kind of lesions that, however, more than any others, could benefit from these devices to save time toward definitive control of bleeding.



In our experience correct device positioning, if necessary to control copious bleeding, is a safety maneuver also in patients with cranial base fractures.

For the management of facial bone fractures, now Maxillofacial surgeons perform open reduction and internal fixation(ORIF) whenever needed. In the case of ORIF, Surgeons use mini plates either 3D or Conventional Plates for stabilising the fractured segments. This technique requires skill and experience and is also expensive. The advantages of this method are improved quality of life ([Jaques \*et al.\*, 1997](#)).

The objective of this review is to compare 3- Dimensional plates versus Conventional plates in the management of maxillofacial trauma.



**3-Dimensional Plates**



3-D plates were first introduced by (Farmand and Dupoirieux, 1992) in 1992. It is quadrangular in shape. It is two mini plates connected by interconnecting bars. Because of this configuration, these plates are stable enough to withstand forces, and it is resistant to torsional forces. The significant advantage of these plates is relatively easy.



### Conventional Plates

For the management of facial fractures, two different treatment modalities are performed using mini plates and screws.

### Rigid Fixation

Using bicortical screws, the lower border of the mandible is fixed using compression plates. These plates were introduced by (Spiessl, 1973; Farmand and Dupoirieux, 1992). The fractured bones healed by primary intention. The disadvantages of these plates are it is difficult to adapt, bulkier, nerve injury due to different oral approach.

### Semi-Rigid Fixation

Champy *et al.* (1980) defined the concept of “Ideal line of Osteosynthesis”. This technique was performed with monocortical screws without compression, and fixation was done using mini plates (Figure 1). The advantages of using these plates are relatively thin, can be done by intraoral approach, easy to adapt, easy to place. Champy *et al.* (1980); Luhr (1987) found that these conventional mini plates were not stable enough to withstand forces which necessitated the need of the IMF.

### Discussion

Facial trauma includes Maxillary fractures, Mandibular fractures, Orbital Fractures, Nasal Bone Fractures, soft tissue injury such as lacerations, bruises etc. Over the years, there are many refinements in the management of maxillofacial trauma. The incidence of maxillofacial trauma is more in males because they are involved in more physical activities and assault compared to women.

Sadhwani and Anchlia (2013); Yadav and Shrestha (2017) reported that the significant aetiology of maxillofacial trauma was Road Traffic Accidents (RTA)

The management of maxillofacial trauma includes the use of Maxillomandibular fixation using wire osteosynthesis, conventional mini plates and 3-D plates.

In the case of angle fractures, where powerful elevator muscles are attached, powerful forces are created. So a heavy plate is needed to counteract the forces. In such cases, instead of using conventional plates, 3-D plates can withstand the forces since the screws are fixed in box configuration. Since it is broad, it may act as a platform to resist the torsional forces. This was discussed by [Alkan \(2007\)](#).

In the case of the symphysis and parasymphysis fracture also the stability of 3-D plates are reasonable compared to conventional plates. In the case of midfacial fractures reported by [Singh \(2015\)](#) there was a significant reduction of 72% and occlusal stability of 72%, and there was no neurosensory deficit.

Duration of surgery is minimal while the surgeons used 3D plates compared to conventional plates. [Al-Moraissi and Ellis \(2014\)](#); [Shapoo et al. \(2017\)](#) also reported that the operative time is shorter while they used 3D plates. However in angle region placement of 3-D plates required extra time as reported by [Feledy et al. \(2004\)](#); [Sadhvani and Anchlia \(2013\)](#).

From the review, we can conclude that 3-Dimensional plates are better than conventional plates as 3D plates have better stability, lesser duration of surgery, resistance to torsional forces, reduced infection rate and it is small.

## Conclusion

The use of modern methods of treatment of patients with extensive traumas of the maxillofacial region allows reducing the time and quality of diagnosis primarily for maintenance and restoration of vital functions of the body, clear identification of localization and for further planning and surgical treatment itself.

## References

1. Fattaeva D. R., Rizaev J. A., Rakhimova D. A. Efficiency of Different Modes of Therapy for Higher Sinus after COVID-19 in Chronic Obstructive Pulmonary Disease //Annals of the Romanian Society for Cell Biology. – 2021. – С. 6378–6383-6378–6383.
2. Фаттаева Д. Р. и др. CLINICAL PICTURE OF SINUSITIS IN PATIENTS AFTER COVID-19 WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE //УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ. – 2021. – Т. 2. – №. 2.
3. Холиков А. и др. ПЕРЕЛОМ ЧЕЛЮСТИ ДИАГНОСТИКА И ЛЕЧЕНИЕ //Stomatologiya. – 2020. – №. 2 (79). – С. 88-93.
4. Холиков А. и др. JAW FRACTURE DIAGNOSTICS AND TREATMENT //Stomatologiya. – 2020. – Т. 1. – №. 2 (79). – С. 88-93.
5. Холиков А. и др. Сравнительная характеристика методов лечения переломов нижней челюсти //Журнал вестник врача. – 2020. – Т. 1. – №. 4. – С. 109-114.
6. Холиков А. и др. Анализ современной эпидемиологической картины переломов нижней челюсти //Журнал вестник врача. – 2020. – Т. 1. – №. 4. – С. 103-108.
7. Fattayeva D. R. ADVANTAGES OF EARLY DETECTION AND TREATMENT OF ODONTOGENIC HEMORRHOIDS IN PREVENTING COVID-19 COMPLICATIONS //British Medical Journal. – 2021. – Т. 1. – №. 1.2.
8. Фаттаева Д., Ризаев Ж., Рахимова Д. ОСОБЕННОСТИ КЛИНИЧЕСКОГО ТЕЧЕНИЯ ХРОНИЧЕСКОГО ГАЙМОРИТА ПРИ БРОНХО-ЛЕГОЧНОЙ ПАТОЛОГИИ //SCIENTIFIC IDEAS OF YOUNG SCIENTISTS. – 2021. – С. 28.
9. Рахимова Д. А., Садыкова Г. А., Фаттаева Д. Р. ВЛИЯНИЕ РЕЗОНАНСНОЙ ТЕРАПИИ НА СОСТОЯНИЕ КАРДИОРЕСПИРАТОРНОЙ БОЛЕЗНЬЮ ЛЕГКИХ ПЕРЕНЕСШИХ COVID-19 //Теоретические и прикладные проблемы современной науки и образования. – 2021. – С. 376-380.