|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||

Available online on http://www.ijmbs.info

International Journal of Medical and Biomedical Studies; 2024; 8(3); 93-97

Case Report

Emergency Management Patient with Multiple Mid-Lower Face Fracture and Tissue Avulsion of 1/3 Mid Face : A Case Report

Atikah Mawardhani Putri[1], Melita Sylvyana[2], Harmas Yazid Yusuf[3]

[1]Resident, Department of Oral and Maxillofacial Surgery, RSUP Dr. Hasan Sadikin, Faculty of Dentistry, Padjadjaran University, Bandung 40161, Indonesia

[2]Oral and Maxillofacial Surgery Department, RSUP Dr. Hasan Sadikin, Padjadjaran University, Bandung 40161, Indonesia

[3]Oral and Maxillofacial Surgery Department, Faculty of Dentistry, Padjadjaran University, Bandung 40161, Indonesia

Received: 11-03-2024 / Revised 16-04-2024 / Accepted 12-05-2024
Corresponding author: Atikah Mawardhani Putri
DOI: **https://doi.org/10.32553/ijmbs.v8i3.2790**
Conflict of interest: Nil

Abstract:

Introduction : Facial trauma can be defined as bone and or soft tissue damage in the face region. Severe facial trauma might cause life threatening and permanent damage such as vision loss, unable to speak, swallows and chews because there are many bones, blood vessels, nerves, muscles and sensory organs at the face region. The facial damage could be a facial bone fracture with severe avulsion of facial tissue so two-dimensional and three-dimensional measurement of the wound is taken to assess the size of tissue to be covered. The aim of this case report was to give an explanation regarding the emergency management patient with multiple mid-lower face fracture and tissue avulsion of 1/3 mid face.

Case Report : A 46 years old male traffic accident patient came to Emergency Department Hasan Sadikin General Hospital with facial fracture and had a severe avulsion of facial tissue. He also had an active bleeding from his face and based on immediate examination the airway was not clear. The patient has been diagnosed with Le Fort I, right orbital rim inferior aspect, nasal, right zygoma and parasymphisis of mandible bone fracture and Tissue loss at upper lip, nasolabial, left nose, left buccal and Multiple lacerated wound at facial region. He was treated with tracheostomy to clear the airway continued with open reduction internal fixation at right orbital rim inferior aspect, nasal, right zygoma, bilateral maxilla bone and parasymphisis of mandible bone with wound closing using rotational and sliding loco regional flap technique.

Conclusion : Emergency treatment on multiple facial fracture with severe avulsion of facial tissue must be done to prevent life threatening condition, permanent damage and also to support the secondary reconstruction.

Keywords : *Severe avulsion of facial tissue, Mid lower face fracture, Open reduction internal fixation, Rotational flap, Sliding loco regional flap*

Introduction

In the last four decades maxillofacial trauma has become an unavoidable theme among physicians due to increased frequency as a result of the growing incidence

of motor vehicle accidents and urban violence. In developing countries such as Indonesia, the incidents of maxillofacial trauma keep increasing as the number of traffic accidents also rising. Approximately, the incidence of traffic accident was 17.3/1000 per year worldwide. Maxillofacial trauma is classified into injuries involved the lower, middle, and upper of the face. It is including the soft and hard tissue, and oral cavity.[1,2]

Facial skin and bone are extremely exposed to such trauma due to their anterior location. Maxillofacial region frequently results in injuries not only to soft tissue but also to major skeletal components of the face, including the mandible, maxilla, zygoma, naso-orbital-ethmoid (NOE) complex, and supraorbital structures.[3]

Maxillofacial injuries can be a life-threatening injuries. Life threatening maxillofacial injuries can complicate the initial management of a trauma patient due to presence of concomitant injuries to airway, head, or cervical spine. Other potentially life-threatening problems such as excessive bleeding should also be addressed. Participation in the treatment and rehabilitation of the patient with maxillofacial trauma involves a thorough understanding of the types of, principles of, evaluation for, and surgical treatment of facial injuries. [4, 5, 6]

The reconstruction of midface maxillofacial injuries with severe skin defect represents a challenge for the oral and maxillofacial surgeon due to its renowned role in defining important facial traits. The functionality and high aesthetical consideration of the midface require the surgeon to find solutions to restore form and function. Emergency management of maxillofacial injuries must be done with open reduction internal fixation and wound closure with any flap to prevent risk of complications such as infection, malunion, trismus, pain, malocclusion, and death.[7]

The aim of this article was to report a case report about Emergency Management Patient with Multiple Mid-Lower Face Fracture and 1/3 Part of Mid Face Tissue Loss that was treated with tracheostomy to clear the airway continued with open reduction internal fixation at right orbital rim inferior aspect, nasal, right zygoma, bilateral maxilla bone and parasymphisis of mandible bone with wound closing using rotational and sliding loco regional flap technique.

Case Report

A 46 years old male traffic accident patient came to Emergency Department Hasan Sadikin General Hospital with facial fracture and had a severe loss of facial tissue. He also had an active bleeding from his face and based on immediate examination the airway was not clear. The condition when he was arrived at Emergency Department Hasan Sadikin General Hospital was difficult to breath from nose or mouth.

From the clinical examination, there were tissue loss at 1/3 mid facial region, among there are upper lip, nasolabial, left nose, left buccal, and multiple lacerated wound at facial region. There was an expose alveolar bone at anterior maxiila and mandible (Figure 1). From the 3D Head CT Scan examination, there were bone discontinuity at right orbital rim inferior aspect, nasal, right zygoma, bilateral maxilla and parasymphisis of mandible bone (Figure 2). The patient's condition was difficult to breath with respiration rate about 32x/minute. From the blood analysis, there was anemia, leukocytosis, hyperglicemia.

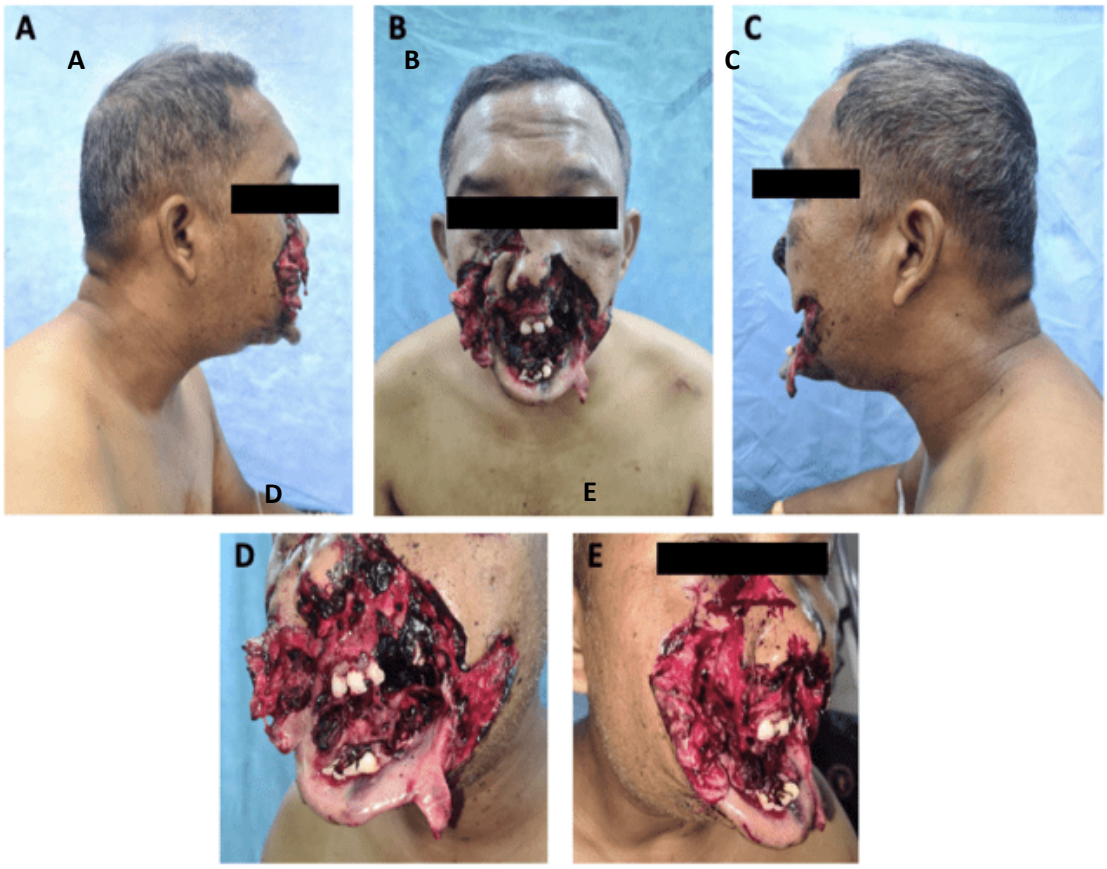

Figure 1: Pre operative. (A,C) Pre operative lateral view. (B) Pre operative profile. (D,E) The tissue loss at 1/3 mid facial region and intaoral view

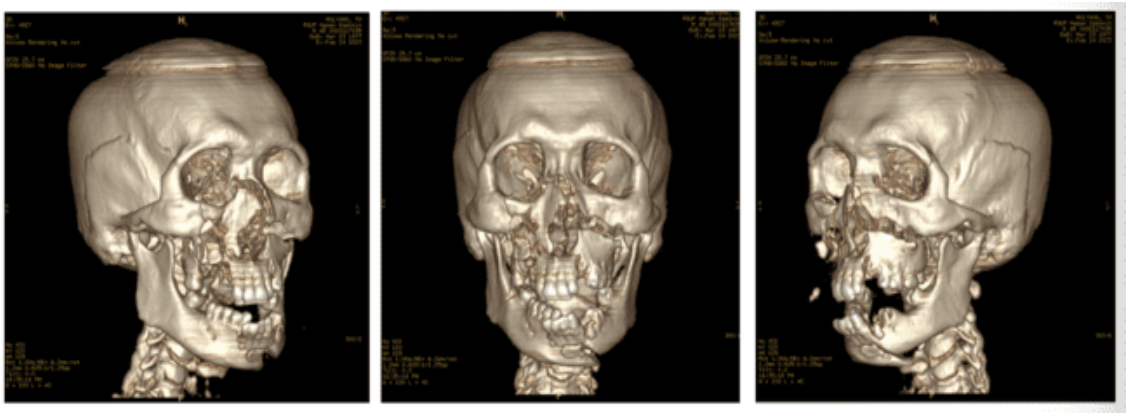

Figure 2: 3D Head CT Scan.

According to the clinical examination, CT Scan, blood analysis, and other supportive examination, the patient was decided to get the emergency treatment with tracheostomy by ENT Department to clear the airway, continued with open reduction internal fixation (Figure 3) at right orbital rim inferior aspect, nasal, right zygoma, bilateral maxilla bone and parasymphisis of mandible bone with wound closing using rotational and sliding loco regional flap technique (Figure 4).

Figure 3: Post Operative ORIF. (A,B) Plate and screw placement at right orbital rim inferior aspect, nasal, zygoma, and maxilla bone . (C) Plate and screw placement at left zygoma and left maxilla bone. (D) Plate and screw placement at parasymphysis of mandible bone

Figure 4: Post operative (A,B) Design flap to wound closure. (C,D) Closing the wound

Discussion

Maxillofacial injuries may result in life-threatening complications. The gold standard in the management of the injured patient is Advanced Trauma Life Support (ATLS) system of care. Management of ATLS consists of a rapid primary survey with simultaneous resuscitation of vital function. The primary survey encompasses the ABCDEs of trauma care and identifies life-threatening conditions by adhering to this sequence: Airway maintenance with restriction of cervical spine motion, Breathing and ventilation, Circulation with hemorrhage control, Disability (assessment of neurologic status), and Exposure/Environmental control. One of the factor that might causes potential difficulties with airway maneuver is significant maxillofacial or mandibular trauma. Any obstacles / A difficult airway could make the intubation more difficult to do. The patient was observed with LEMON Assessment to assess the airway anatomy and with Mallampati classification to visualize the hypopharynx. In this case report, the airway is not clear and its hard to do intubation on the patient with a severe facial trauma so the visualization of the airway could not be done and it was decided to performed tracheostomy first.[8,6]

Maxillofacial injuries can involve facial soft tissues, facial bones, or both. In this case, the fracture involves soft tissues and bones so the fracture is an open fracture. Open fractures are at increased risk of infection because of exposure of tissue and bone to the environment, and common treatment protocols involve early initiation of prophylactic antibiotics, wound irrigation and debridement, and surgical stabilization and repair of the fracture, for example, via open reduction internal fixation (ORIF).[5] One of the common clinical presentation of soft tissue injuries is avulsion injuries. Avulsion injuries involve

significant tissue loss. Avulsion can be considered a very severe, wherein all layers of skin are torn off and the underlying structures are grossly exposed. There should be closed as early as possible. Primary closure of a wound should be completed within 8 h of injury when possible.[9]

Severe avulsion of facial tissues region must be reconstructed with attention to the uniqueness of each defect. Local flaps are often used for facial reconstruction as they offer many advantages to the patient and often able to replace the skin with like skin and are capable of being tailored to the specific wound. Advancement and rotational flaps are considered random pattern local flaps, referring to the arterial blood supply of the flap being derived from perforating musculocutaneous blood vessels within the flap's pedicle feeding into the dermal-subcutaneous microcirculatory plexus. Local, advancement and rotational flaps can be used to reconstruct the severe avulsion of facial tissue. **[9, 10]**

Conclusion

Emergency treatment on multiple facial fracture with severe tissue loss must be done to prevent life threatening condition with clear the airway with tracheostomy, prevent the permanent damage with early initiation of prophylactic antibiotics, wound irrigation and debridement, and surgical stabilization and repair of the fracture, for example, via open reduction internal fixation (ORIF) and close the severe tissue lost with local, advancement and rotational flaps to support the secondary reconstruction.

References

1. Vujcich N, Gebauer D. Current and evolving trends in the management of facial fractures. Australian dental journal. 2018;63:S35-S47.
2. Tambayong EF, Atmadjaya NK, Golden N, Wiargitha K, Tjokorda GBM. Facial injury severity scale score as a predictor of length of stay for maxillofacial fracture at sanglah general hospital, Denpasar, Bali, Indonesia. Open Access Macedonian Journal of Medical Sciences. 2020;8(B):291-4.
3. Salzano G, Maffia F, Vaira LA, Committeri U, Copelli C, Maglitto F, et al. Locoregional Flaps for the Reconstruction of Midface Skin Defects: A Collection of Key Surgical Techniques. Journal of Clinical Medicine. 2023;12(11):3700.
4. Hupp J. Contemporary Oral and Maxillofacial Surgery 7th. Vol. 7. Elsevier; 2019.
5. Bonanthaya K, Panneerselvam E, Manuel S, Kumar VV, Rai A. Oral and Maxillofacial Surgery for the Clinician: Springer; 2021.
6. Sandeep S, Jawalkar S. Condition and Management: Emergeny in Maxillofacial Trauma-A. 2019.
7. Stanford-Moore GB, Niyigaba G, Tuyishimire G, Yau J, Kulkrani A, Nyabyenda V, et al. Effect of Delay of Care for Patients with Craniomaxillofacial Trauma in Rwanda. OTO open. 2022;6(2):2473974X221096032.
8. Stewart RM, Brasel K, Shock H, Stewart R, Brasel K, Henry S. Advanced trauma life support student course manual. American College of Surgeons, The Committee on Trauma. 2018;3:43-61.
9. Datarkar A, Tayal S. Management of Soft Tissue Injuries in the Maxillofacial Region. Oral and Maxillofacial Surgery for the Clinician. 2021:997-1012.
10. Sciegienka S, Hanick A, Branham G. Rotation and transposition flaps in facial plastic and reconstructive surgery. Plastic and Aesthetic Research. 2022;9(9):1.