

CASE REPORT

PAN FACIAL TRAUMA MANAGED IN EMERGENCY: A CASE REPORT

Rahul VC Tiwari,¹, Shaik Taj Nizam Shakeel², Mahendra Azad³, Preetham Ravuri⁴,
Lalitya Dandamudi⁵, Sirisha Kommuri⁶

ABSTRACT

Pan Facial Trauma is devastating to the functional, social and psychological well being for the victim. It not only affects the individual but also the family as a whole. Face is a very important structure of our body and it is a hall mark of identification. While managing such cases, we have to take care of multiple factors and need multidisciplinary approach. Achieving the function is always every surgeons major goal. We hereby present a case of Pan Facial Trauma where the mid face on the left side was having crush injury and mandible with three dimensional fractures along with horizontal and vertical displaced fractures which was managed in emergency via Intermaxillary fixation, semi rigid fixation and by Open Reduction and Internal Fixation doing Submental Intubation under General Anaesthesia.

Keywords: Pan Facial, ORIF, Submental Intubation, General Anaesthesia

INTRODUCTION

Airway breathing and circulation are the most important aspects of managing a life-threatening condition in Pan

Facial Trauma.¹ Once we secure the airway, stop the bleeding and control the circulation, the patient becomes haemodynamically stable. Managing trauma earlier when non-rigid fixations were the only methods which later evolved to semi rigid and then rigid fixations. Pan facial trauma is termed in diagnosis when there are fractures involving upper middle and lower third of the face. Our case also involves the fractures of upper middle and lower third of left side. Fractures present were Frontozygomatic Suture, Infra Orbital Rim, Zygomatic Arch, Zygoma body, Pyriform region of maxilla, Body of maxilla, Maxillary sinus, Nasal & Vomer bones, Mid Palatal Split, Vertical fracture of Ramus, Angle and Body fracture of Mandible. The newer developments are the Bio- degradable and resorbable bone plates and robotic surgery for the same.² Two different philosophies are followed when it comes to management of pan facial fractures. One being “Inside – Out” or the “Bottoms Up” approach and the other being “Outside-In” or “Top –Down” approach. The first approach involves reconstructing the maxillary – mandibular unit as the first step and then the mid facial structures. This would allow the occlusal relationship to be restored and then ‘Built out’ from that process.³

CASE REPORT

A 55-year-old male patient with history of road traffic accident reported to Emergency Department of Omni Hospital, Vizag. He was hit by an auto late midnight while he was walking back to his home. His Glasgow coma scale was 12/15 and patient was haemodynamically unstable. He was immediately shifted to critical care unit. He was having severe bleeding from nose, and oral cavity, the occlusion was deranged and there was a huge swelling on his left side of complete face. Periorbital oedema was present, and patient was unable to open his left eye. A retrograde nasal pack was kept to control the nasal bleed and oral cavity was thoroughly cleaned to maintain the airway. IV fluids, antibiotics, analgesics were started to make the patient haemodynamically stable. Airway, breathing and circulation were brought into control and the patient was referred for Three Dimensional Computed Tomography of complete Facial bones & skull. 3D CT revealed

1. MDS, FOGS, (PhD), Consultant Oral & Maxillofacial Surgeon, CLOVE Dental & OMNI Hospitals, Visakhapatnam, Andhra Pradesh, India.
2. MDS, Consultant Oral & Maxillofacial Surgeon, CLOVE Dental & OMNI Hospitals, Visakhapatnam, Andhra Pradesh, India.
3. MDS, Clinical Director & Chief Consultant, Maxillofacial Surgery, Implantology & Laser Dentistry, CLOVE DENTAL INDIA, Hyderabad, Telangana India.
4. ZCH & Consultant Orthodontist, CLOVE Dental, Visakhapatnam, Andhra Pradesh, India.
5. Clinic Head, OMNI-Clove & Consultant Pedodontist, CLOVE Dental, Visakhapatnam, Andhra Pradesh, India.
6. Clinic Head- Shantipuram Vizag & Consultant Prosthodontist & Implantologist, CLOVE Dental, Visakhapatnam, Andhra Pradesh, India.

Corresponding Author

Dr. Rahul VC Tiwari, MDS, FOGS, (PhD), Consultant Oral & Maxillofacial Surgeon, CLOVE Dental & OMNI Hospitals, Visakhapatnam, Andhra Pradesh, India.
Email: Rahul.tiwari@clovedental.in

Occipital Contusions. Fracture of Frontozygomatic Suture, Infra Orbital Rim, Zygomatic Arch, Zygoma body, Pyriform region of maxilla, Body of maxilla, Maxillary sinus, Nasal & Vomer bones, Mid Palatal Split, Vertical fracture of Ramus, Angle and Body fracture of Mandible. Patient was also complaining of chest pain while normal breathing. A Chest X-ray and ECG was taken. Open reduction and internal fixation (ORIF) of fractured facial bone fragments was planned under General Anaesthesia. Patient's attendants were informed about the condition and treatment plan. After their written consent and approval surgery was planned. Referrals were made to Neurology, Ophthalmology, General surgery, Orthopaedics and General Medicine. Complete Blood Investigations and Pre Anaesthetic check-up was done. Clearance was Obtained from Orthopaedics and General Medicine. Ophthalmologist gave the clearance after checking the vision of left eye and managed Periorbital oedema with medications. Neurologist suggested to keep Blood Pressure in mild hypotensive stage during surgery and restrict bleeding as patient was already hypertensive and Occipital contusions were managed by Eptoin & Levipil. Regarding Chest pain there was no rib fractures or any internal injury. It was an inter-coastal muscular tear due to fall which was managed medically.

Because of deranged occlusion and nasal fractures, it was difficult for an anaesthetist to do nasal or oral intubation. A submental intubation was done. Our main aim in this case was to first achieve the occlusion and function and then achieve the aesthetics. We started to fix the fractures top to bottom as per the protocol. Maxillary & Mandibular Arch bars were fixed and Intermaxillary fixation was achieved with the help of Fish wire. Occlusion was stabilized. FZ was plated with 2-hole miniplate and 6mm screws via frontozygomatic incision. A Keens Vestibular approach was taken to fix the maxilla, infra orbital area, pyriform region, nasal bone and zygoma. A 4-hole T-plate was used in the nasal and infra-orbital area with 6mm screws. 2-hole plate with 8mm screws was used to fix the anterior nasal spine region and to stabilize the palate. Pyriform region was stabilized by a 4 hole plate and 8 mm screws, Maxillary bone and zygomaticomaxillary buttress was stabilized by 4 hole, 2 hole and 6 hole plates respectively with 8 mm screws. Rest of the pieces were crushed so wiring was done for the infraorbital maxillary & zygoma to stabilize and maintain the bony continuity and framework for aesthetic concerns. A Hinds retromandibular approach was taken to fix ramal angle and body fractures, T-hole & 4 hole plate with 10mm screws were used for ramus and 2-2.5mm 4 hole plates were used for angle and body as per Champeys lines of osteosynthesis.

Surgical closure was done in layers of FZ and Hinds incision using 4-0 Vicryl absorbable sutures by mattress and continuous locking sutures for muscle fat and dermis. Skin was sutured by 5- Ethicon non-absorbable Prolene sutures by Subcuticular and Interrupted Suturing Technique. Keens approach was surgically closed by 4-0 Vicryl sutures by continuous locking technique. Submental intubation was removed and area was closed in layers. Total duration of surgery including anaesthesia was 3 hours and 30 minutes. Post-operative occlusion and mouth opening was satisfactory. Patient was shifted to ICU. 3D CT Scan was taken after patient was completely stable post-surgery. Ryles tube and catheter were removed after 24 hours and patient was shifted to the ward after 72 hours and discharged after 96 hours of surgery. IV medications were stopped, and he was kept under peri oral medications for 1 week. Post 1-week sutures were removed. Patient had satisfactory mouth opening, jaw movements, occlusion of teeth and aesthetics.

DISCUSSION

The ideal treatment of Facial fractures is open reduction and internal fixation but when the injuries involving complete or one side of complete facial bone happens we have to think twice about managing it.⁴ The ideal protocol is to fix the available bone in correct form. If the fractures are crushed or broken into multiple small pieces we cannot go for rigid fixation options, in such scenarios we have to opt semi rigid or non rigid fixations like wiring mechanisms.⁵ There are new titanium mesh and bone waxes available to fix such kind of fractures, but they are not economical.⁶ Reduction and fixation of these fractures is aimed for rehabilitation of patients functional, anatomical structures and three dimensional contours of face. Horizontal and vertical fractures combinedly hinders the transmission of mastication force to the base of skull causing severe pain and difficulty.⁷ So fixing each and every part in every form to attain correct function is very important task. It has been observed many times that in case of RTA the facial injury which occurs is usually bilateral, in such cases the route of intubation may change from oral to any other as it may hinder the management of injury so, submental intubation is most preferred one and easy to do without involvement of any super specialized instruments.⁸

CONCLUSION

The sequencing of Pan Facial Fracture repair should always be in a stepwise fashion. Prime goal is to achieve the function and then the aesthetics. This mandibular-maxillary unit is restored to its vertical height and position in relation to the skull base. Fixing each and every unit

in a proper fashion is of extreme importance as skull is a single complex unit. Ultimately, Pan Facial Fractures are managed through systematic sequencing steps focusing on the occlusion as the foundation for proper alignment.

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