Craniofacial trauma of 3-year-old child—A critical case report

Rahul Tiwari1,*, Heena Tiwari2, Philip Mathew3, Shilpa PH4, Bhaskar Roy5

1FOGS, MDS, Dept. of OMFS & Dentistry, JMMCH & RI, Thrissur, Kerala, 2BDS, PGDHHM, Government Dental Surgeon, CHC Makdi, Kondagaon, Chattisgarh, 3HOD, Dept. of OMFS & Dentistry, JMMCH & RI, Thrissur, Kerala, 4Senior Lecturer, Faculty of Dentistry, AIMST University, Semeling Kedah Malaysia, 5PG Student, Dept. of OMFS, KVG Dental College and Hospital, Sullia, D.K. Karnataka, India

*Corresponding Author: Rahul Tiwari
Email: drrahulvctiwari@gmail.com

Abstract
Craniofacial Trauma in pediatrics and adults shows almost similar pattern of injuries. Incidence and prevalence of pediatric craniofacial trauma is comparatively less than adults. In pediatric trauma craniofacial injuries are much observed due to the large cranial fossa and body. Management of pediatric trauma case becomes more difficult due to obvious reasons as there is less incidence of pediatric traumas which indeed lacks our experience to manage it. Craniofacial trauma requires a multidisciplinary team approach for the better management. In this case report we present a 3-year-old male child with craniofacial trauma due to natural disaster of wall collapse.

Keywords: Pediatric, Craniofacial, Trauma, Management, Multidisciplinary.

Introduction
History and published literature gives us ample amount of data to diagnose and treat craniofacial trauma promptly.1-3 But still during a pediatric case when compared to adult case is unamenable. In the past decades there is significant advances in pediatric craniofacial trauma management.4-5 Management of these cases are troublesome because pediatric fractures are very easily over looked due to the smaller size than adults.6 Craniofacial surgeons stuck up in dilemma to choose between the different reduction and fixation techniques.7 Three-dimensional computed tomography is a viable imaging technique to rule out the hard tissue injuries. In craniofacial region the cranial base fracture and naso-orbital-ethmoid fractures creates a challenging scenario. Due to their certain anatomical and physical factors like growth and timing of treatment the surgical approach differs among surgeons.8 Trauma causes deleterious effect in the craniofacial structures. The primary goal of management of such craniofacial fractures is to restore the function, form and achieve esthetics.9 Management of injuries in children has significant implication in future due to craniofacial growth and development.10 In every six months due to growth and morphological variations carries a huge impact in child’s life which makes surgeons management sensitive.11

Case Report
A 3-year-old baby boy came to the emergency department of the hospital with history of natural disaster of wall collapse in a very critical situation with Glasgow Coma Scale of 6/15. Eye opening was 2/4 i.e. opens eye in response to pressure, Verbal response was 2/5 i.e. makes sounds, Motor response was 2/6 i.e. extension to painful stimulus (decerebrate response). Patient was having the difficulty in breathing which was suggestive of airway compromise. So, immediate endotracheal intubation was done. On monitoring pulse oximeter vitals were unstable so intravenous fluid was started to avoid hemorrhagic shock. Initial physical examination showed as extensive through and through contused lacerated wound from the lateral crux and ala of the nose on left side travelling through the philtrum area and base of the nose disrupting minor and major cartilage of the right side extending towards right side of cheek till the posterior part or ramus region of mandible on face. Skin, subcutaneous tissue, superficial muscular aponeurotic system, muscles and maxillary vestibule were completely obliterated. Abrasions near by the contused lacerated wound superiorly on the nose, toward the check, infraorbital region, zygomatic region and pre-auricular region was present. Inferiorly complete upper lip, corner of the mouth on the right side till the base of the body and angle region of mandible was present. Soft tissue hematoma was present on the above-mentioned areas. (Fig. 1) Bilateral epistaxis and otorrhea was present. There was swelling on the hands and legs on the right side. On fast track basis due to critical situation of child a computed tomography of brain and Three-dimensional computed tomography scan of craniofacial region was taken including chest X ray, ECG, right hand and right leg radiograph was taken. As this case needs multidisciplinary approach so maxillofacial surgery, neurosurgery, pediatric surgery, plastic surgery, orthopedics and ENT were advised for consultation. Computed tomography scan of brain showed occipital fracture and temporal fracture with mild pneumocephalous on right temporal region. Three-dimensional computed tomography scan of craniofacial region elicited bilaterally displaced sub condylar fracture and angle fracture on right side of mandible. (Fig. 2) It also showed occipital fracture running from...
foramen magnum posterosuperiorly towards sagittal suture. (Fig. 3). Also, there was a fracture of temporal bone and infratemporal fossa. (Fig. 4) Due to lack of availability of ventilator bed patient was referred to higher center with complete investigation and diagnosis for better treatment as the patient compulsory needs ventilation.

Conclusion
Diagnosis and management of pediatric craniofacial trauma is a challenging task which needs extra careful evaluation and methodology. Higher diagnostic imaging are viable options for diagnosis. Management is always debated between open and closed reduction in which bioresorbable plates are eminent option for rehabilitation. Multidisciplinary team approach must be considered for craniofacial trauma cases to increase the quality of life of patient.

References