

Poster Presentation

Judul:

Management of Severe Le Fort III Fracture in an Infant Patient: A Case Report



Oleh :

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Disampaikan Pada Acara:

4th JOGLOSEMAR CRANIOFACIAL FORUM

MANAGEMENT OF COMPLEX CRANIOFACIAL TRAUMA

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Solo Paragon Hotel & residences Surakarta

Management of a Severe Le Fort III Fracture in an Infant Patient : A Case Report

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ABSTRACT

- Le Fort fractures (at all levels) are almost never seen before age 2 while pediatric facial fractures are infrequent. They can be severe and have life-long consequences. Le Fort III fractures are caused by an impaction 30° above the orbitomeatal plane shearing the facial skeleton from the skull base. Multidisciplinary assessment and complete investigations through CT scans through various projections are important to determine the right surgical technique for the patient. Naso-orbito-ethmoid complex fractures require surgical reduction and fixation to restore facial aesthetic contours and proportions. If the medial canthal tendon is avulsed, it will need to be reduced. With significant blow-out or blow-in fractures, orbital walls need to be reconstructed. Here is a case report that aim to give a comprehension of facial fractures in pediatric patients and to aid the clinician with the management of this rare and very specific classification of trauma case. In this case, A 2 year-old girl presented to the emergency department following a vigorous motor-vehicle accident. Bicoronal approach was chosen to provide excellent surgical access for bone reconstruction with 1.2 and 1.6 Titanium internal fixation. NOE fracture was treated by cantilever costochondral graft harvested from the 7th rib. This was fixed to the nasofrontal area with 6.0 titanium screw. Canthopexy was performed by fixing medial canthal ligament to periosteum using 5.0 nylon Frontozygoma fractures were fixed with 1.6 non-absorbable plate. Post operation, the patient showed good result, no restriction of ocular motility and has telecanthus.

Keywords: Le Fort III, Naso-orbito-ethmoid complex fractures, cantilever costochondral graft

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INTRODUCTION:

In children younger than 5 years old, the reported incidence is approximately 1 % of all facial fractures seen in trauma centers. Le Fort fractures (at all levels) are almost never seen before age 2 while pediatric facial fractures are infrequent. They can be severe and have life-long consequences.

OBJECTIVE

The aim of this article is to give a comprehension of facial fractures in pediatric patients and to aid the clinician with the management of this rare and very specific classification of trauma case.

CASE

A 2 year-old girl presented to the emergency department following a vigorous motor-vehicle accident (Figure 1). She was conscious and it was reported that she vomited blood. There was no history of nausea.

PHYSICAL EXAMINATION

Clinical findings revealed periorbital hematoma in both eyes with normal vision with saddle-nose deformity (Figure 1). There was normocclusion. Ophthalmic check was normal.

CT SCAN

Right and left Zygomatic arch and frontozygoma fractures involving the lateral and inferior orbital walls

Fractures of the nasal bones and medial orbital walls

(Figure 2) .

MANAGEMENT

Bicoronal approach was chosen to provide excellent surgical access for bone reconstruction with 1.2 and 1.6 Titanium internal fixation.

NOE fracture was treated by cantilever costochondral graft consisting around 3/4 bone proximally and cartilage at the 1/3 distal end harvested from the 7th rib. This was fixed to the nasofrontal area with 6.0 titanium screw.

Canthopexy was performed by fixing medial canthal ligament to periosteum using 5.0 nylon Frontozygoma fractures were fixed with 1.6 non-absorbable plate .

Orbital wall reconstruction was considered unnecessary because of the minimal deformity and absence of dysfunction.

DISCUSSION

- Le Fort III fractures are caused by an impaction 30° above the orbitomeatal plane shearing the facial skeleton from the skull base. LeFort fractures (at all levels) are almost never seen before age 2. While they are very rare in this age group, when the injury is significant it may be potentially life-threatening.
- Naso-orbito-ethmoid complex fractures require surgical reduction and fixation to restore facial aesthetic contours and proportions. If the medial canthal tendon is avulsed, it will need to be reduced. With significant blow-out or blow-in fractures, orbital walls need to be reconstructed.
- The nose is reconstructed with cantilever costochondral graft extending to tip with no caudal strut, fixed to the nasal bone with a 6.0 screw
- This technique can produce a stable, predictable nasal contour and tip projection without significant bone graft resorption.
- The problem with this technique is that area around the hardware is under stress and may lead to loosening up of the framework and subsequent collapse.
- 1 week post-op, the patient showed good result, no restriction of ocular motility and has telecanthus. (Figure 3)

CONCLUSION

Multidisciplinary assessment and complete investigations through CT scans through various projections are important to determine the right surgical technique for the patient

Surgical management can improve function and appearance in patients with facial fractures

The use of the cantilever bonegraft technique gives good results in patients with NOE fractures

References

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David, D. J., & Moore, M. H. (1989). Can3lever Nasal Bone Gra3ing with Miniscrew Fixa3on. *Plas3c and Reconstruc3ve Surgery*, 83(4), 728–732.



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POSTER
Jumat, 3 Juni 2022
(Ballroom)

Rundown Poster Presentation (CI: dr. Ahmad Fawzy, SpBP-RE & dr. Affandi W, SpBP-RE / dr. M Fahmi S

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Day/Date	Sub Theme	Time	Topic	PIC/Speaker
Friday, June 3rd 2022	Poster Presentation	09.00- 09.05	Opening	dr. Ahmad Fawzy, SpBP-RE
	Moderator : Ahmad Fawzy, MD	09.05- 09.15	MANAGEMENT OF CONDYLAR FRACTURE OPEN REDUCTION VERSUS CLOSE REDUCTION : A CASE SERIES	Gusti Ayu Putu Ratih Pradnyandari, MD (Plastic Reconstructive and Aesthetic Surgery Division Faculty of Medicine Udayana University/Sanglah General Hospital Bali)
	Judge Panel :	09.15- 09.25	BOTULOLINUM TOXIN AS AN ADJUNCTIVE TREATMENT OF TRAUMATIC TEMPOROMANDIBULAR JOINT ANKYLOSIS	Ida Bagus Agung Indra Pramana, MD (Plastic Reconstructive and Aesthetic Surgery Division, Faculty of Medicine Udayana University / Sanglah General Hospital Bali)
	Dewi Haryanti K, MD			
	M. Rosadi Seswandhana, MD	09.25- 09.35	SUCCESSFUL RECONSTRUCTION OF SEVERE TRAUMATIC SCALP DEFECT WITH EXPOSED BONES: A CASE REPORT	Erdo Puncak Sidarta, MD (Department of Surgery, Prof. Dr. W. Z. Johannes General Hospital, Kupang, East Nusa Tenggara, Indonesia)
	Siti Isya Wahdini, MD	09.35- 09.45	COST OF CRANIOMAXILLOFACIAL FRACTURE IN A TERTIARY CARE HOSPITAL IN INDONESIA	Valencia Jane Martin, MD (Fakultas Kedokteran Universitas Indonesia, Jakarta, Indonesia)
	M. Rizqi Setyarto, MD	09.45- 09.55	MANAGEMENT OF BLOWOUT FRACTURES WITH BONE GRAFT : A CASE SERIES	Rr. Theodora Ratih Labdagati Iswara, MD (Department of Plastic Reconstructive and Aesthetic Surgery, Bali Mandara Hospital)
	Nurardhilah Vityadewi, MD	09.55- 09.58	REPAIR OF ENOPHTHALMUS IN NEGLECTED TETRAPOD ZYGOMA FRACTURE WITH DICED CARTILAGE GRAFT AND FASCIA LATA SLING GRAFT: A CASE REPORT	Jessica Halim, MD (Cleft and Craniofacial Center, Division of Plastic Reconstructive and Aesthetic Surgery, Department of Surgery, Faculty of Medicine Universitas Indonesia, Cipto Mangunkusumo General Hospital, Indonesia)
		09.58- 10.01	THE EXCELLENT OUTCOMES AFTER SURGICAL RECONSTRUCTION ON PANFACIAL FRACTURE: A CASE REPORT	Winsen Haryono, MD (General Practitioner, Dr. Soedarso General Hospital, Pontianak, Indonesia)
		10.01- 10.04	HEMIFACIAL MICROSOMIA IN CRANIOFACIAL TRAUMA: TWO CASE REPORTS	Erdo Puncak Sidarta, MD (Department of Surgery, Prof. Dr. W. Z. Johannes General Hospital, Kupang, East Nusa Tenggara, Indonesia)
		10.04- 10.07	POSTOPERATIVE OUTCOMES OF ZYGOMATIC ARCH FRACTURES TECHNIQUES: AN OVERVIEW	Dewi Kusuma Wangsa, MD (Kristen Krida Wacana University (UKRIDA))
		10.07- 10.10	EXTENSIVE HEMIFACIAL OPEN DEGLOVING INJURY MANAGED WITH ADVANCEMENT FLAP: A CASE SERIES	Nurmalia Fitria Ningrum, MD (FK Udayana RSUD Sangah)
		10.10- 10.15	BREAK	BREAK

Rundown Poster Presentation (Continue)

		10.15- 10.18	DIAGNOSIS AND TREATMENT OF LE FORT I-II FRACTURE AND RIGHT ORBITAL FLOOR FRACTURE WITH BILATERAL MAXILLARY AND ETHMOID HEMATOSINUSES	Grace Claudia, MD (Bali Mandara Hospital)
		10.18- 10.21	ABSORBABLE FIXATION MODALITIES IN PEDIATRIC MAXILLOFACIAL TRAUMA (A SISTEMIC REVIEW)	Jenny Maria, MD (FK Unika Atma Jaya / RSUD Labuha)
		10.21- 10.24	PEDIATRIC NOSE RECONSTRUCTION WITH PARAMEDIAN FOREHEAD FLAP : A CASE REPORT	Daniel Stephen Widjaja, MD (RSPAL Dr. Ramelan Hospital Surabaya)
		10.24- 10.27	MELOLABIAL ISLANDED FLAP WITH EAR CARTILAGE GRAFT FOR ALAR RECONSTRUCTION IN DRUG INDUCED TRAUMA	Caroline Dewi, MD
		10.27- 10.30	FACIAL RECONSTRUCTION USING FORHEAD FLAP AFTER FACIAL GIANT TUMOR REMOVAL : A CASE REPORT	Alexandria Stephanie (Intern Doctor, Plastic Reconstructive and Aesthetic Division, RSD Gunung Jati, Cirebon)
		10.30- 10.33	AN ABSCESS FOLLOWING THE USE OF RESORBABLE PLATES IN PEDIATRIC MAXILLOFACIAL FRACTURES: A CASE REPORT	Shania Priza Adelia (Plastic Surgery Unit of Airlangga University Hospital)
		10.33- 10.36	APPLICATION OF TUBED PEDICLED FLAP IN DEFECT RECONSTRUCTION POST-MAXILLOFACIAL TRAUMA : A CASE REPORT	Nathasya Fernanda (General practitioner, Intern in Plastic Reconstructive Surgery Division, Department of Surgery, Regional General Hospital Prof. Dr. Margono Soekarjo , Purwokerto)
		10.36- 10.39	PROFIL PASIEN TRAUMA MAKSILOFASIAL DI RUMAH SAKIT UMUM DAERAH WAIKABUBAK SUMBA BARAT TAHUN 2018 – 2021	Angela Djunaedi (Rumah Sakit Umum Daerah Waikabubak, Sumba Barat, Nusa Tenggara Timur, Indonesia)
		10.39- 10.42	Management of a Severe Le Fort III Fracture in an Infant Patient : A Case Report	Ulfa Elfiah (Faculty of Medicine Jember University/Dr. Soebandi General Hospital Jember)
		10.42-10.45	DIFFERENCES IN THE EFFECTIVENESS OF BONE HEALING IN THE TREATMENT OF MANDIBULAR FRACTURE WITH BONE DEFECT USING MANDIBULAR RECONSTRUCTION AND SYNTHETIC BONE SUBSTITUTE GRANULE WITH MANDIBULAR RECONSTRUCTION WITHOUT SYNTHETIC BONE SUBSTITUTE GRANULE IN RSUD DR. MOEWARDI	Alfian Fahmy (Surgery Specialist Doctor Education Program, Faculty of Medicine, Universitas Sebelas Maret)

Rundown Poster Presentation (Continue)

		10.45- 10.48	Nasolacrimal duct reconstruction using canthopexy jumping man flap for posttraumatic dacryostenosis due to malunion of naso-orbitoethmoidal fracture: a case report	Bertha Kawilarang (Division of Plastic, Reconstructive and Aesthetic, Department of Surgery, Faculty of Medicine Udayana University/Sanglah General Hospital, Bali, Indonesia)
		10.48- 10.51	A RARE CASE OF A COMPLETE UNILATERAL RIGHT FACIAL CLEFT ON A YOUNG GIRL REPAIRED WITH LABIOPLASTY	Anak Agung Bagus Satria Brahmananta (Division of Plastic Reconstructive and Aesthetic Surgery Department of Surgery Faculty of Medicine Udayana University/Sanglah General Hospital Bali Resident)
		10.51- 10.54	ANKYLOSING TMJ CAUSED BY OLD FRACTURE OF THE LEFT CONDYLE MANDIBLE	Muhammad Aries Fitriani (Plastic Surgery Division, Department of Surgery, Faculty of Medicine, Public Health and Nursing, Gadjah Mada University)
		10.54-10.57	THE OLD AND FORGOTTEN TECHNIQUE FOR MIDFACE FRACTURE STABILIZATION USING SUSPENSION WIRE : A CASE SERIES	Maria Karina Jaya Swana, FKUB
		10.57- 11.00	Closing	Moderator

*The posters were not sorted yet by the rank

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4th Joglosemar Craniomaxillofacial Forum

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The use of the cantilever bonegraft technique gives good results in patients with NOE fractures

Figure 1. Clinical photo show patient in pre-operative condition by front view(a); pre-operative condition by side view (b); during operative conditions (c); post-operative condition (d).



Figure 2. CT Scan finding in 3D (a); coronal section (b); transversal section (c,d); axial section (e,f)



Figure 3. Patient follow up photo 1 week after surgery (a); 8 month after surgery by front view (b). 8 month after surgery by side view (c).



MANAGEMENT

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MANAGEMENT OF COMPLEX CRANIOMAXILLOFACIAL TRAUMA

June 3rd - 5th, 2022

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- *Soft Tissue Management for Each Aesthetic Unit*
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- *etc*

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 Amru Sungkar, M.D.
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 Desy Kurniawati Tandiyu, M.D.
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 Sarwastuti Hendradewi, M.D.
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- Labioplasty *
- Maxillomandibular Fixation *
- Osteosynthesis on Mandibular Fracture *
- Wound Management **

* for General Surgeons, Plastic Surgeons, and Residents of Plastic/General Surgery
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SECRETARIAT

Plastic Reconstructive & Aesthetic Surgery Division, 4th Floor of Anggrek, RSDM Jl. Kolonel Sutarto No. 132 Surakarta 57126

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