CHOC Children's
Children's Hospital of Orange County

Mandibular Distraction Clinical Guideline (MDO)

Inclusion Criteria:
- All infants with micrognathia with respiratory distress, glossoptosis

Exclusion Criteria:
- Known lower airway obstruction
- <36 weeks

Available Resources:
- MDO Order Set
- MDO Airway Box

Clinical Evaluation

Admission:
- Admit to NICU or PICU ** For any consults or testing assure they have been completed outpatient
- Initiate reflux precautions and position to maintain airway (side lying or prone) as needed or indicated
- Consults: (if not previously consulted)
  - Genetics
  - Otolaryngology
  - Plastic Surgery
  - Pulmonary
  - GI
  - PICC Team
  - Developmental Team
  - Child Life
  - Music Therapy
  - Ophthalmology (prior to discharge)
- Laboratory:
  - Chromosomal Microarray
  - Stickler Panel if indicated
- Bedside Procedures
  - NAP Study
  - 3D CT Scan for virtual surgical planning (non-contrast face CT with 0.5-millimeter cuts)
- Operating Room Procedures
  - Rigid bronchoscopy
- Multidisciplinary care meeting to discuss surgical plan: To include Plastics, ENT, Neo/Intensivist, Pulmonary

Preoperative Care

- **Notify Anesthesia of patient prior to OR**
- Consult PICC team for vascular access
- Complete NICU Green OR sheet at bedside
- NPO per protocol
- Place MDO turn schedule at the bedside
- RN to ensure that turning screwdriver return with patient from OR

Approved Evidence Based Medicine Committee 9/18/2019

Reassess the appropriateness of Care Guidelines as condition changes and 24 hrs after admission. This guideline is a tool to aid clinical decision making. It is not a standard of care. The physician should deviate from the guideline when clinical judgment so indicates.

© 2019 CHOC Children's Hospital

Postoperative Care

Medications:

- Acetaminophen IV 10-15mg/kg/dose Q6 hours for 48-72 hours postoperative
- Opioid Naïve
  - Dexmedetomidine infusion 0.2-1mCg/kg/hr
  - Morphine infusion 0.03-0.05mg/kg/hr

    or
  - Fentanyl infusion 0.5-2mCg/kg/hr
  -
- Opioid Exposed
  - Dexmedetomidine infusion 0.2-1mCg/kg/hr
  - Morphine infusion of 0.05-0.1 mg/kg/hr *or* increase current opioid infusion by 20%

    or
  - Fentanyl infusion 0.5-2mCg/kg/hr
- PRN
  - Intermittent Morphine 0.05 mg/kg/dose or fentanyl 1mCg/kg/dose IV PRN every 2 hours for breakthrough pain to start if increasing morphine or fentanyl infusion, the PRN dose and infusion hourly dose should be the same
- Antibiotics: Cefazolin 30mg/kg/dose IV every 8 hours for 48 hours postoperative

Airway Management:

- Nasal/ Endotracheal intubation for 4-7 days or PICU per physician order
- Dexamethasone 0.25 mg/kg/dose ~ 4 hours before extubation per physician order
- Anesthesia to be at bedside for extubation
- Until mandibular alignment is achieved or if patient has tracheostomy **PICU per physician order**
- Suctioning as needed

Nursing Care Post Operatively

- HOB elevated 30°
- Ice to face Q6 hours for 20 min for 24 hours postoperative
- Pin care: Cleanse with sterile water and apply Bacitracin as ordered
  - Mepilex to be placed under pins on face during the first 72 hours post-op
- Rotation Instructions:
  - 2 turns BID while intubated followed by 1 turn TID as ordered OR per physician order
  - *Plastic surgery to do first turn and every morning turn. RN to do evening turn.*
  - Continue turning as ordered until instructed to stop
- Enteral Feeding: With return of bowel function and clinical stability
  - NPO for 12- 24 hours
  - Normal diet to resume over 24 - 48 hours
- Repeat NAP Study near completion of distractions

Post- Operative Device Removal

- 3 months after last turn

Discharge Recommendations

- Follow up with plastic surgery in clinic 4-6 weeks after last turn
- Craniofacial team referral
- Instruct family on how to use the wrench and how to turn daily
- Instruct family on assessment of pin site for redness or drainage and to call the plastic surgeon

MDO Reference List

A. Heffernan, C. B., Calabrese, C. E., & Resnick, C. M. (2019). Does mandibular distraction change the laryngoscopy grade in infants with Robin Sequence? *Journal of Oral and Maxillofacial Surgery*, 77(2), 371-379. doi:10.1016/j.joms.2018.05.032. (American Medical Assoc.)
B. Resnick, C. M. (2018). Precise osteotomies for mandibular distraction in infants with Robin sequence using virtual surgical planning. *International Journal of Oral & Maxillofacial Surgery*, 47(1), 35-43. doi:10.1016/j.ijom.2017.07.020.
C. Paes, E. C., Fouché, J. J., Muradin, M. S. M., Speleman, L., Kon, M., & Breugem, C. C. (2014). Tracheostomy versus mandibular distraction osteogenesis in infants with Robin sequence: a comparative cost analysis. *British Journal of Oral & Maxillofacial Surgery*, 52(3), 223-229. doi:10.1016/j.bjoms.2013.11.017.
D. Hammoudeh, J. A., Fahradyan, A., Brady, C., Tsuha, M., Azadgoli, B., Ward, S., & Urata, M. M. (2018). Predictors of failure in infant mandibular distraction osteogenesis. *Journal of Oral and Maxillofacial Surgery*, 76(9), 1955-1965. doi:10.1016/j.joms.2018.03.008.
E. Bangiyev, J. N., Traboulsi, H., Abdulhamid, I., Rozzelle, A., & Thottam, P. J. (2016). Sleep architecture in Pierre-Robin sequence: The effect of mandibular distraction osteogenesis. *International Journal of Pediatric Otorhinolaryngology*, 89, 72-75. doi:10.1016/j.ijporl.2016.07.019.