

Case Report

Open Access

Challenges in Airway Management Following Mandibular Distractor Placement in the Nicu: A Case Study

Christina Busick

Assistant Professor, College of Nursing, Xavier University, USA

ABSTRACT

This case study presents a tragic scenario involving a neonate who underwent intubation, surgical placement of mandibular distractors, and subsequent extubation. Hours later, the patient experienced respiratory distress symptoms. Multiple attempts at reintubation were done but an endotracheal tube (ETT) was never secured due to severe airway edema. Thus an emergent tracheostomy was attempted; the infant was never able to be ventilated adequately and succumbed to complications. The case underscores the critical nature of airway management in neonates with complex craniofacial anomalies in the Neonatal Intensive Care Unit (NICU).

*Corresponding author

Christina Busick, Assistant Professor, College of Nursing, Xavier University, USA.

Received: March 19, 2024; **Accepted:** April 22, 2024; **Published:** April 29, 2024

Introduction

Neonates with craniofacial abnormalities often require intricate airway management strategies, including intubation and surgical interventions like mandibular distractor placement. This case highlights the challenges and tragic outcome associated with managing airway complications post-procedure in the NICU setting.

Case Presentation

A neonate born at 38 weeks gestation with prominent micrognathia and no other conditions presented to the NICU for feeding difficulties and trouble managing secretions. The infant underwent mandibular distractor placement following initial pre-procedure intubation. Eight hours postoperatively, orders for extubation were carried out with initial reassuring blood gases. Four hours post-extubation, the infant displayed symptoms associated with respiratory distress and subsequent airway management challenges transpired.

Clinical Course

Signs of respiratory distress emerged rapidly post-extubation, prompting a decision to attempt reintubation. However, due to severe airway edema secondary to the surgical procedure, insertion of an endotracheal tube (ETT) was unsuccessful. An emergent tracheostomy was then attempted but proved futile in achieving adequate ventilation.

Outcome and Conclusion

Despite resuscitative efforts, the infant's respiratory status continued to deteriorate, leading to hypoxia and cardiovascular collapse. Tragically, the neonate could not be ventilated effectively and succumbed to respiratory failure.

Discussion

This case underscores the complexity and potential complications

associated with airway management following mandibular distractor placement in neonates with craniofacial anomalies. Severe airway edema can pose significant challenges in reintubation and alternative airway access, as evidenced by the failed attempts at tracheostomy in this case.

Lessons Learned

Timely recognition of airway compromise, close monitoring post-extubation, and preparedness for emergent airway interventions are crucial in mitigating risks and optimizing outcomes in such cases. Multidisciplinary collaboration and a structured approach to airway management protocols are imperative to address challenges effectively and prevent adverse outcomes.

Conclusion

While advancements in neonatal care have improved outcomes for infants with complex conditions, cases like this underscore the ongoing need for vigilance, expertise, and preparedness in managing airway complications following surgical interventions in the NICU. Each case presents unique challenges, necessitating a tailored and collaborative approach to optimize patient care and minimize risks [1-5].

References

1. Breugem C C, Logjes R J, Nolte J W, Flores R L (2021) Advantages and disadvantages of mandibular distraction in Robin sequence. In *Seminars in Fetal and Neonatal Medicine* 26: 101283.
2. Miura S, Jardim P V, Butt W, Namachivayam S P (2020) Extubation failure and major adverse events secondary to extubation failure following neonatal cardiac surgery. *Pediatric Critical Care Medicine* 21: e1119-e1125.
3. Sangsari R, Saeedi M, Maddah M, Mirnia K, Goldsmith J P (2022) Weaning and extubation from neonatal mechanical ventilation: an evidenced-based review. *BMC pulmonary*

- medicine 22: 421.
4. Soliman R M, Elsayed Y, Said R N, Abdulbaqi A M, Hashem R H, et al. (2021) Prediction of extubation readiness using lung ultrasound in preterm infants. *Pediatric Pulmonology* 56: 2073-2080.
 5. Trotter C M, Munabi N C, Choi D G, Youn S, Alfeerawi S, et al. (2023) The Effect of the Degree of Mandibular Distraction Osteogenesis on Palatoplasty Timing in Patients with Micrognathia and Cleft Deformities. *Plastic and Reconstructive Surgery–Global Open* 11: 1-2.

Copyright: ©2024 Christina Busick. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.