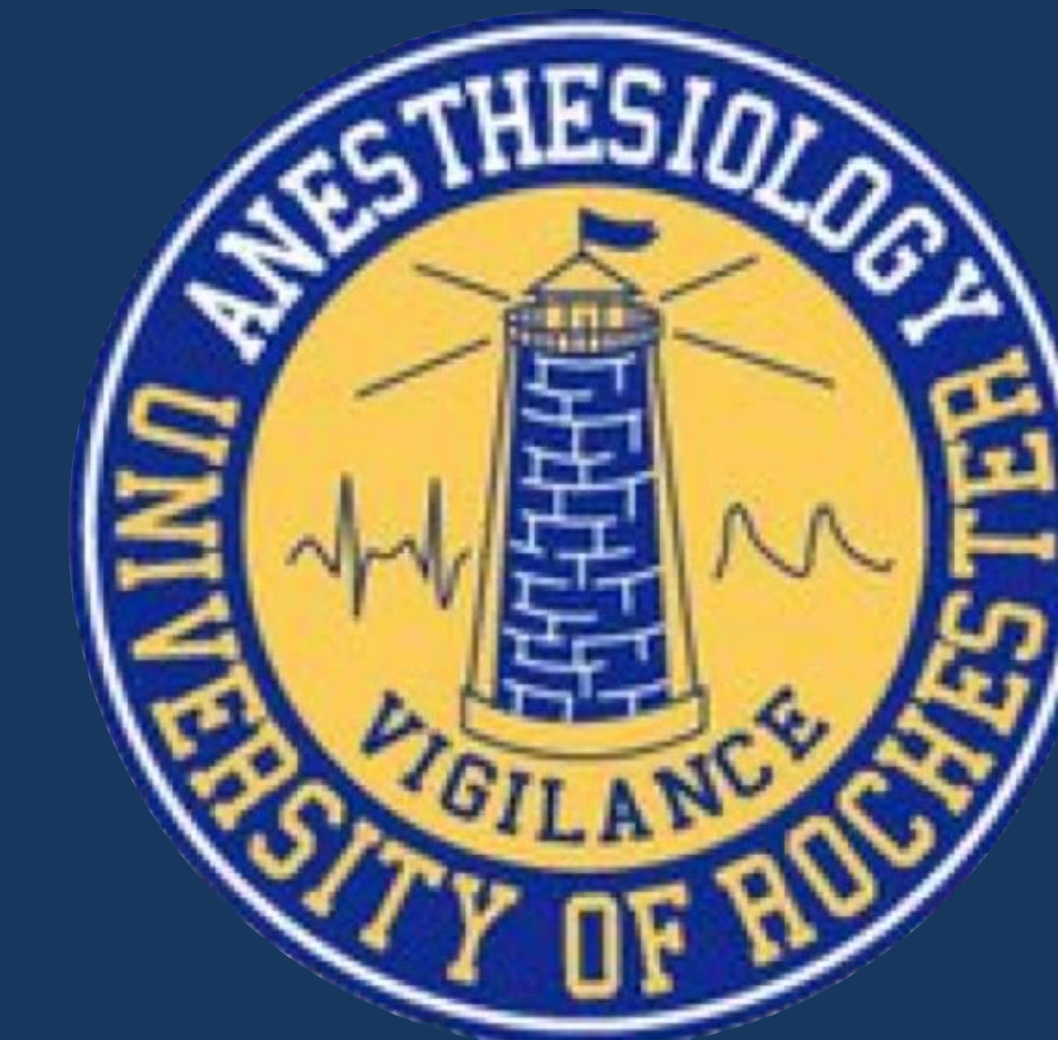




Navigating Pediatric Airway Management in Trauma: A DART Success Story

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Introduction

Pediatric airway management presents unique challenges due to the anatomical and physiological differences compared to adults. Traumatic injury exacerbates these challenges, where rapid airway stabilization is crucial to prevent insult associated with apnea and hypercarbia.

This case report discusses successful airway management in a 6-month-old trauma patient after mobilization of the Difficult Airway Response Team (DART).

Clinical Case Summary

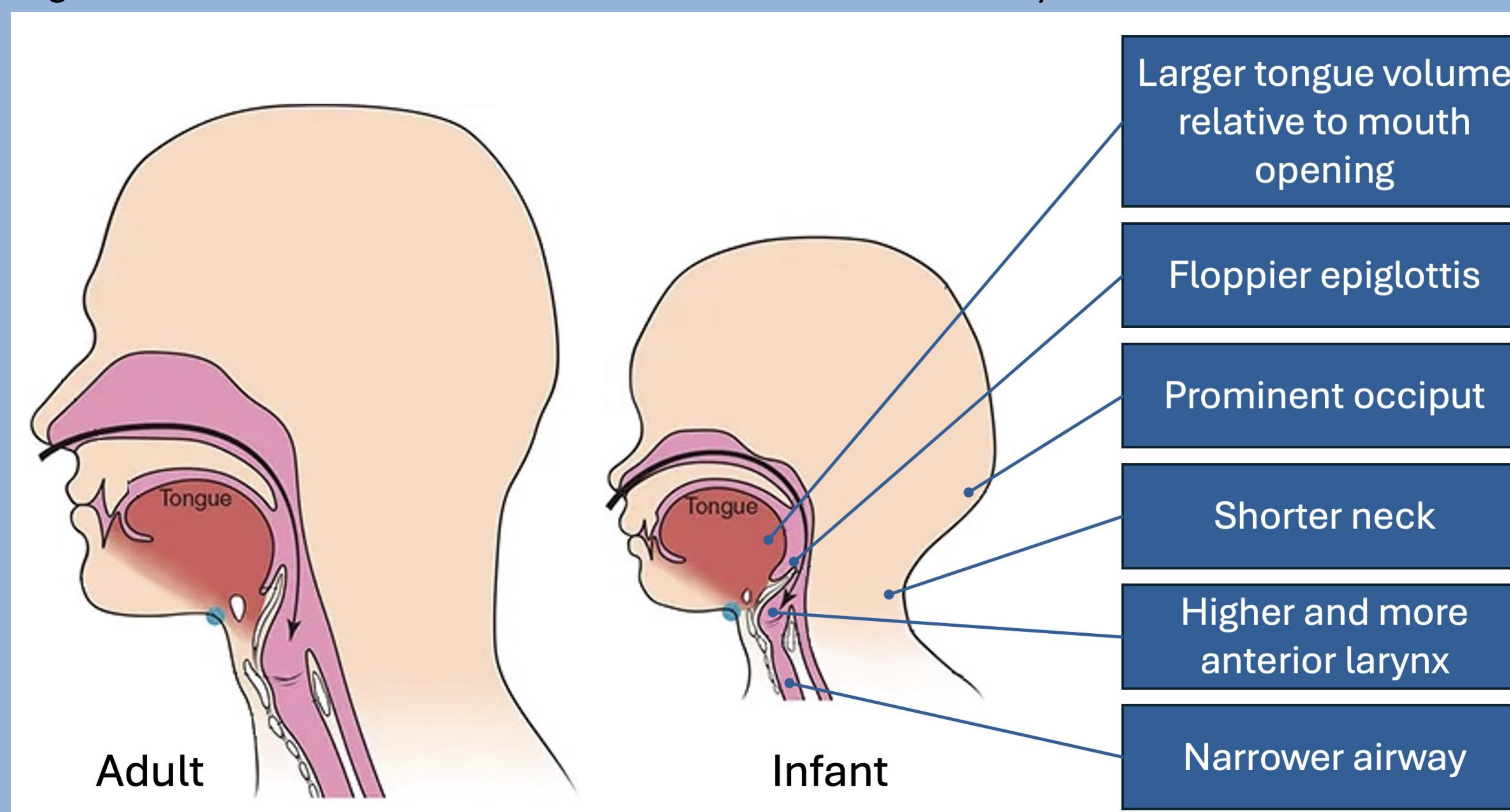
A 6-month-old female presented as a level 1 trauma following a motor vehicle collision:

- Emergent intubation was indicated due to apneic episodes.
- Despite obtaining a Grade 1 View with video laryngoscopy, the emergency medicine physicians had difficulty passing the endotracheal tube (ETT) between the vocal cords.
- Patient was ventilated and the airway was suctioned between attempts. Vital signs remained stable.
- Multiple intubation attempts and peri-intubation emesis resulted in laryngeal and pharyngeal edema and secretions, further obscuring laryngoscopy views.
- The Pediatric Difficult Airway Response Team (DART) was mobilized.
- With the DART team and resources, the patient was successfully intubated by a DART physician on first attempt.
- Further evaluation revealed traumatic brain injury, and facial and orbital bone fractures.

Discussion

- Inherent challenges of pediatric airways (Figure 1) were amplified by traumatic facial fractures and occlusion of airway view by emesis.
- A cuffed 4.0 ETT was used in all attempts.
- Airway narrowing from trauma-induced laryngeal edema likely hindered the success of initial attempts.
- Final successful attempt involved partially withdrawing the rigid stylet, allowing the more flexible ETT tip to advance past the narrowed vocal cords first.

Figure 1. Anatomical difference between adult and infant airways¹.



Conclusion

This case demonstrates the importance of a stepwise approach to the Difficult Airway Algorithm² leading to escalation of airway management via DART after unsuccessful attempts (Figure 2).

Activating DART introduced a specialized response which facilitated the final successful attempt to secure the patient's airway.

The value of a DART team is evidenced not only by this case but also by an analysis of DART performance four years post-implementation, which showed successful management of difficult airways in all DART activations³.

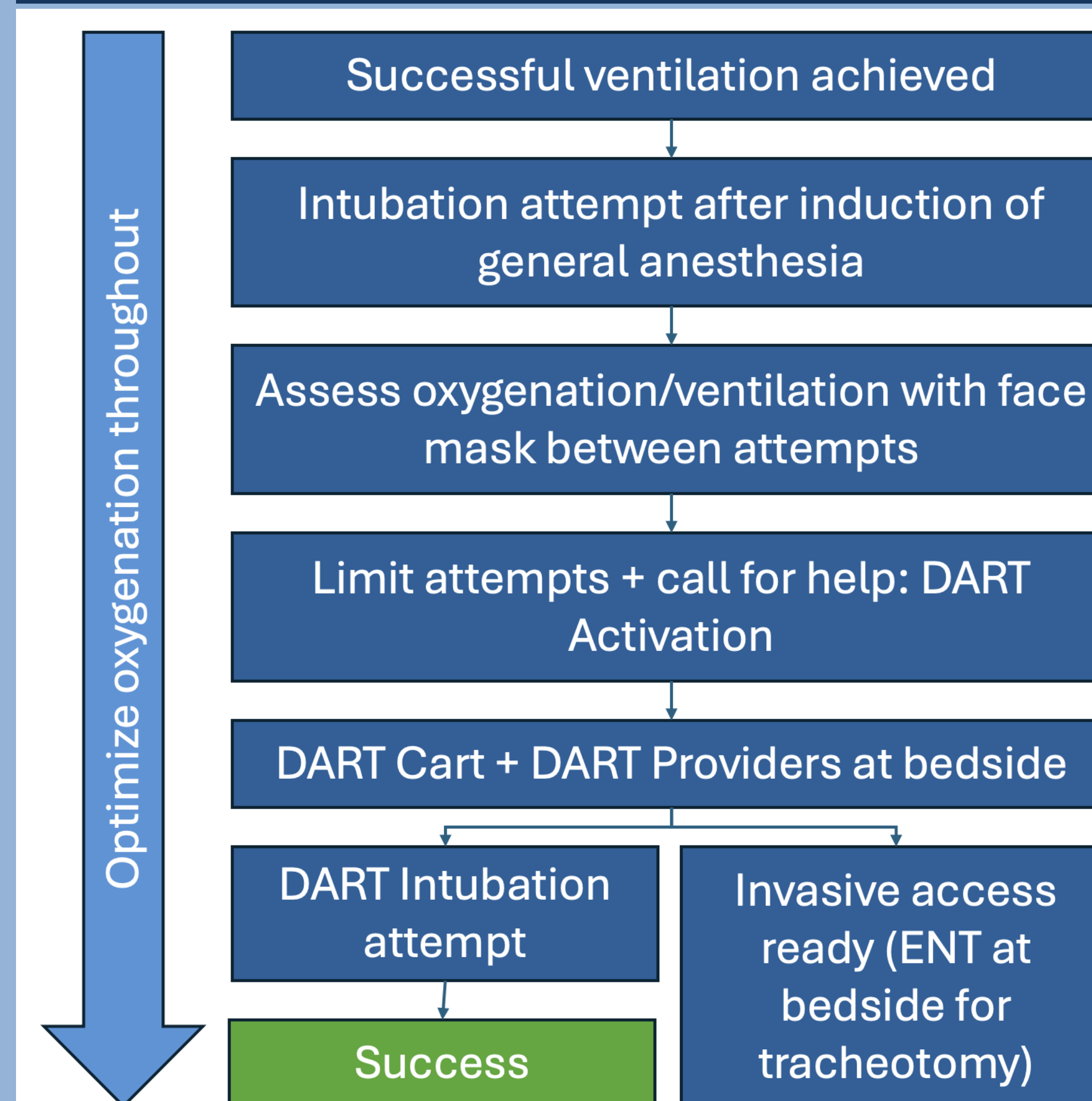


Figure 2. Case progression following Difficult Airway Algorithm.

Lessons Learned

1. Following a structured airway management algorithm, involving escalation to specialized resources after initial attempts fail, ensures that patients receive the highest level of care.
2. Implementing a multidisciplinary response for the difficult pediatric airway, facilitated by a Pediatric DART, significantly increases chances of success.

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