



Catheter Selection in Neonatal Pneumothorax: Traditional Methods and Novel Techniques

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Introduction

- Pneumothorax of newborn ➤ Emergent intervention
- Intervention choices ➤ Needle aspiration, tube thoracostomy
- Tube thoracostomy complications ➤ Parenchymal damage, bleeding, air leak, dislocation
- ? The use of the utility model that combines a Veress needle with a thoracic tube and its therapeutic benefits.



Material and Methods

- Retrospective cohort
- 2020–2025
- Izmir City Hospital
- Izmir Tepecik E&R Hospital
- Total of 101 newborn pneumothorax,
 - 74 cases included (27 deaths excluded)

Primary outcome measures;

- Full lung expansion
- Revision thoracostomy

Secondary outcome measures;

- Ratio of switch to another material
- Negative pressure application
- Tube dislocation



Fig A: Veress tipped catheter (VTC)

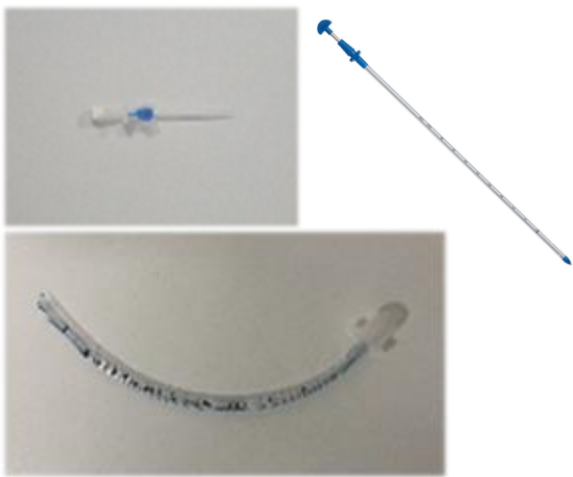


Fig B: Conventional catheters (CC)

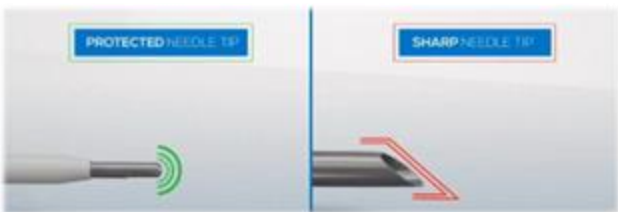
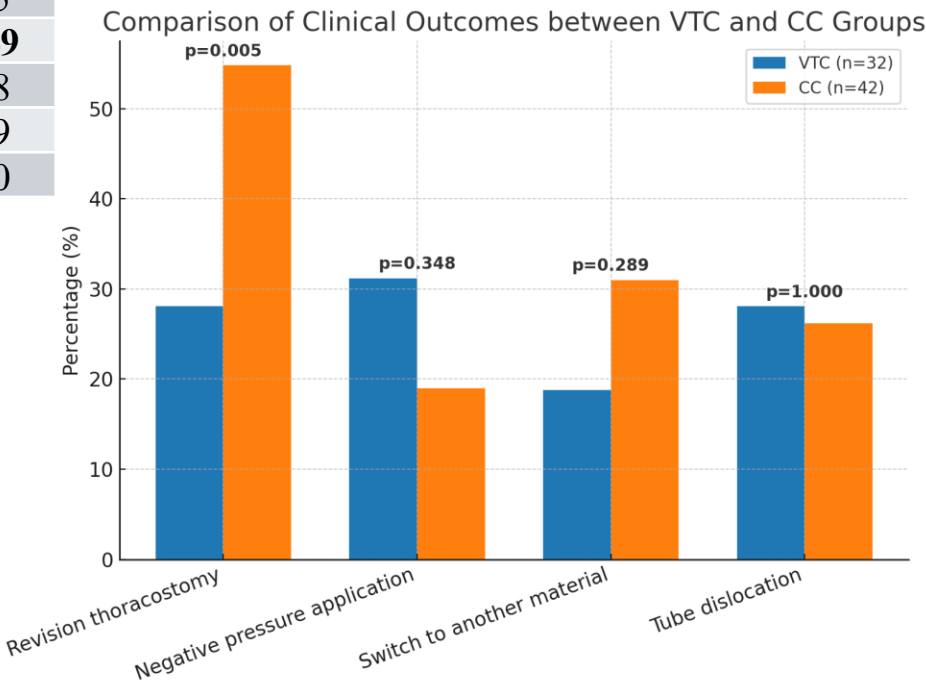
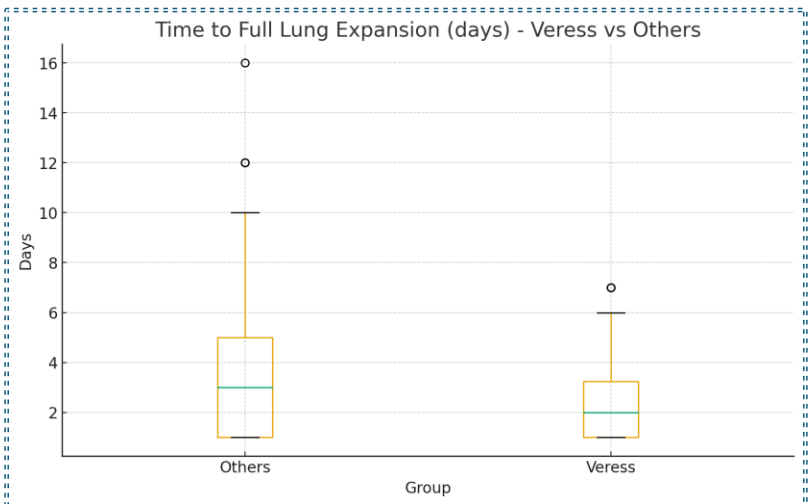


Fig C: Veress tip and standard sharp tip

Results

	VTC (n=32)	CC (n=42)	p value
Full lung expansion time (days)	2.84 ± 1.95	4.05 ± 3.57	0.295
Revision thoracostomy	28.1% (9)	54.8% (23)	0.0049
Negative pressure application	31.2% (10)	19.0% (8)	0.348
Switch to another material	18.8% (6)	31.0% (13)	0.289
Tube dislocation	28.1% (9)	26.2% (11)	1.000



Conclusions

Using a Veress-tipped thoracic tube may allow for a more controlled procedure.

Further studies

- Fewer need for experience
- Verification of the effect of reducing mortality
- Studies can be planned with larger groups to examine the necessity of transition under less negative pressure

