

An Innovative Way to Place Bronchial Blockers in Pediatric Patients

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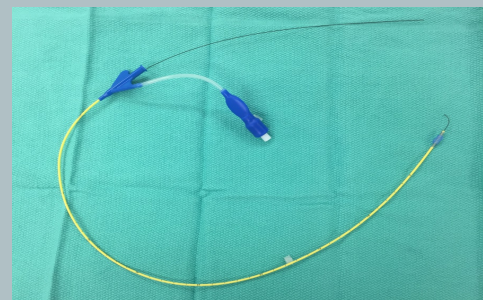
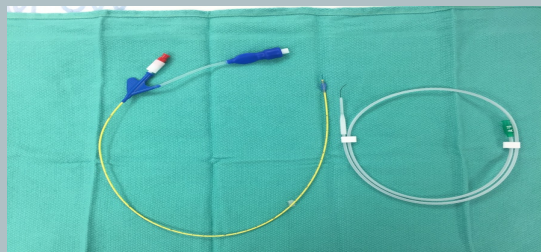
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Introduction

- One lung ventilation (OLV) is challenging in the pediatric population given the limited options available (CO₂ insufflation, extraluminal bronchial blockers, Fogarty catheters).

Methods

- We present a different technique that uses the Arndt bronchial blocker set and an angled, half-J tip wire (Terumo Glidewire) instead of the nylon loop, according to Enk.1,2
- This wire helps extraluminal placement of the bronchial blocker and allows repeated adjustments throughout the case without very much difficulty.
- The nylon loop that originally comes in the bronchial set has to be removed to allow for lung deflation.
 - Cannot be replaced for adjustments of the bronchial blocker in case it becomes dislodged
- The angled wire is stiffer and can be removed and replaced through the bronchial blocker during the case.
 - Also minimizes the time to place the bronchial blocker
- Placed during direct laryngoscopy prior to endotracheal tube (ETT) placement.
- Position adjusted when in position with fiber optic scope through ETT.
- Distal end of the wire is twisted to point the angled tip toward the desired bronchus and advance the bronchial blocker.
- Balloon inflated under fiber optic visualization.



Three Case Reports using this Technique

- A 4-month-old underwent left thoracotomy for division of a vascular ring
 - Successful OLV
- 4-year-old underwent video-assisted thoracoscopic surgery washout and decortication for recurrent pneumonia.
 - Successful OLV
- 6-month-old underwent thoracoscopic congenital pulmonary airway malformation (CPAM) resection
 - Successful OLV for 9 hours. Multiple adjustments needed throughout the case due to extensive surgical manipulation.
 - Needed lung deflation and inflation multiple times – would not have been possible without this technique

Conclusion

- Angled tip of the guidewire allows for easy maneuvering to left or right bronchi
- Low pressure high volume cuffed bronchial blocker is placed under fiber optic visualization.
- The number of cases using this technique successfully is still growing, and we will continue to record the use of this technique to provide one lung isolation in pediatric cases.

References:

1. Enk D, Enk S: Catheter with positioning system. Patent application 10 2013 100 991.3. German Patent Office; January 31, 2013
2. Enk D, Enk S: Catheter with positioning system. Patent application PCT/EP2014/051625. European Patent Office; January 28, 2014

