



EBM meeting

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Background- case report

- during the admission for right thyroidectomy (due to goiter), a solitary pulmonary nodule over the right upper lobe had been noted incidentally on the routine CXR examination
- Other symptoms and signs
 - HTN with medication
 - Hepatitis B
 - Cough (-)
 - Fatigue (-)
 - recent body weight loss (-)
 - Non-smoker
 - No TB history
- Clinical diagnosis : bronchogenic carcinoma

Plan

- Right lobectomy

Pre-anesthetic evaluation

- American Society of Anesthesiologist classification : **Class II**
- Perioperative mortality Rate : **0.27-0.4%**
- No difficult intubation by airway evaluation
- PCEA
 - regimen : morphine & 0.0625~0.125 %
bupivacaine

Ask Answerable Question

- One lung ventilation需要使用double-lumen tube或bronchial blocker，但是這些設備的放置都需要有豐富經驗的胸腔麻醉醫師，對於新手醫師而言使用left-sided double-lumen tube、Univent tube及Arndt Blocker三者的成功率有無差別？

PICO

Patient / Problem	60 Y/O male with right side bronchogenic carcinoma presented for lobectomy
Intervention	One lung ventilation with double-lumen tube for anesthesia
Comparison	Univent bronchial blocker, Arndt wire-guided bronchial blocker
Outcome	The failure rate did not differ among the three devices

Search Data for evidence

- Search Strategy:
 - Double-lumen tube
 - Univent bronchial blocker
 - Anesthesiologists with limited thoracic experience
- Database:
 - PubMed Clinical Queries
 - The Cochrane Library

PubMed Clinical Queries

- Double lumen tube : 844
- Univent bronchial blocker : 42
- Anesthesiologists with limited thoracic experience : 4
- Combine double lumen tube and anesthesiologists with limited thoracic experience : 2
- Combine univent bronchial blocker and anesthesiologists with limited thoracic experience : 1

The Cochrane Library

- Double lumen tube : 77
- Univent bronchial blocker : 6
- Anesthesiologists with limited thoracic experience : 1
- Combine double lumen tube and anesthesiologists with limited thoracic experience : 1
- Combine univent bronchial blocker and anesthesiologists with limited thoracic experience : 1

Paper 1 – from Anesthesiology

- Feb 2006, Volume 104 Issue 2 Pages 261-266
- Publication Type
 - Journal Article; Randomized Controlled Trial
- Authors
 - Campos JH, Hallam EA, Van Natta T, Kernstine KH

Paper1 – title

- Devices for lung isolation used by anesthesiologists with limited thoracic experience
 - comparison of double-lumen endotracheal tube, Univent torque control blocker, and Arndt wire-guided endobronchial blocker

Paper1 – outcome

- Participants failed to place or position their assigned device in 25 of 66 patients (failure was 39% among faculty and 36% among senior residents)
- **The failure rate did not differ among the three devices** ($P = 0.65$)
- The median (25th-75th percentile) times to complete the placement procedures
 - double-lumen tube: 6.1 min (4.6-9.5 min)
 - Univent tube: 6.7 min (4.9-8.8 min)
 - Arndt Blocker: 8.6 min (5.8-17.5 min) ($P = 0.45$ comparing all devices)
 - After device malposition was identified, it took 1 min or less for the investigating anesthesiologist to achieve optimal position

Paper1 – conclusion

- Anesthesiologists with limited experience in thoracic anesthesia frequently fail to successfully place lung isolation devices. Rapid successful device placement by an experienced anesthesiologist excluded any contribution of uniquely difficult anatomy. The nature of the malpositions suggests that the most critical factor in successful placement was the anesthesiologist's knowledge of endoscopic bronchial anatomy

Paper 2 – from Current Opinion in Anesthesiology

- 2007 Feb; 20(1) ; page 27-31
- Author : Campos JH

Paper2 – title

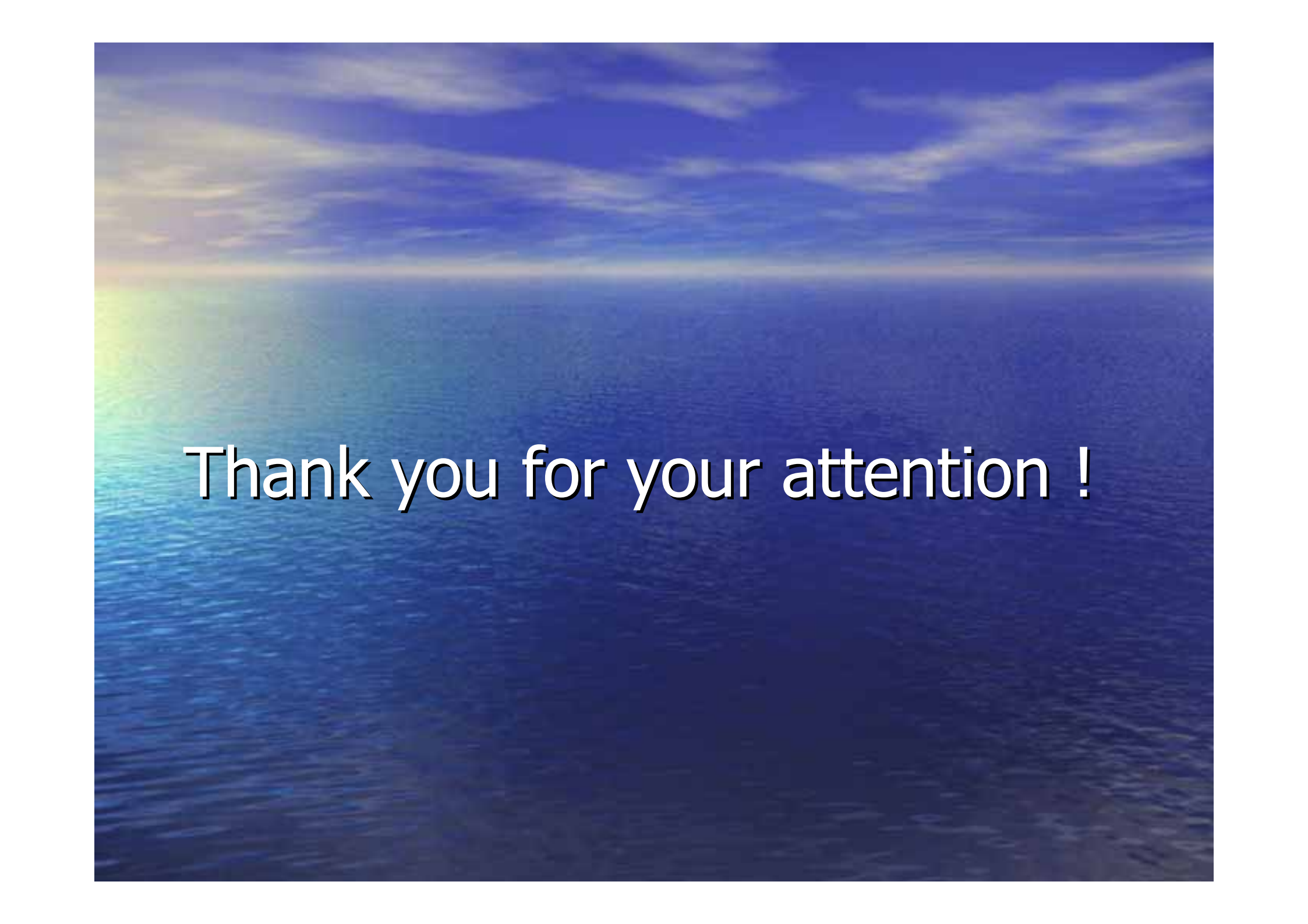
- Which device should be considered the best for lung isolation: double-lumen endotracheal tube versus bronchial blockers

Paper2 – outcome

- In the last five years – numerous reports
 - a preference for the use of bronchial blockers in patients with airway abnormalities
 - For nonthoracic anesthesiologists who have limited experience in thoracic anesthesia cases, none of the devices (double-lumen tubes or bronchial blockers) have been shown to provide any advantage while in use due to a high incidence of unrecognized malpositions

Paper2 – conclusion

- Recent findings
 - Double-lumen endotracheal tubes and bronchial blockers have been found to be clinically equivalent in terms of performance in providing lung collapse for patients with normal airways



Thank you for your attention !