



تقنيات اجهزة تخدير الكورس الاول

DOUBLE LUMEN TUBE (DLT)



Sawa University

College of health and medical
techniques

Department of Anesthesia

Stage 3

جامعة ساوة

الاهلية

كلية التقنيات الصحية
والطبية

قسم تقنيات التخدير

المرحلة الثالثة

محاضرة رقم 5

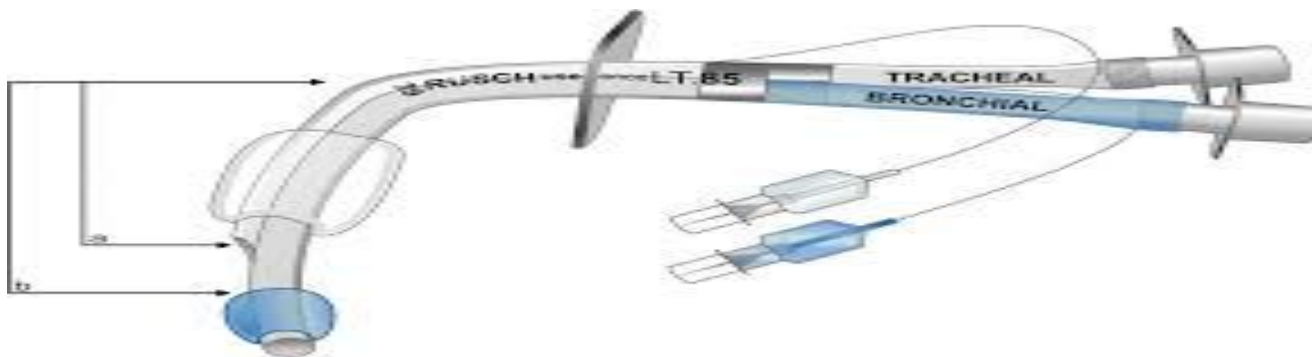
الجانب النظري

Lecture No 5 Theoretical

استاذ المادة :م.د سامي رحيم حسن

Introduction

- A Double Lumen Tube (DLT) is a specialized endotracheal tube used for lung isolation.
- It allows independent ventilation of each lung.
- Commonly used in thoracic surgeries.



Purpose / Indications

1. Used when one-lung ventilation (OLV) is required:
2. Thoracotomy
3. Lobectomy / Pneumonectomy
4. VATS (Video-Assisted Thoracoscopic Surgery)
5. Bronchopleural fistula
6. Pulmonary hemorrhage



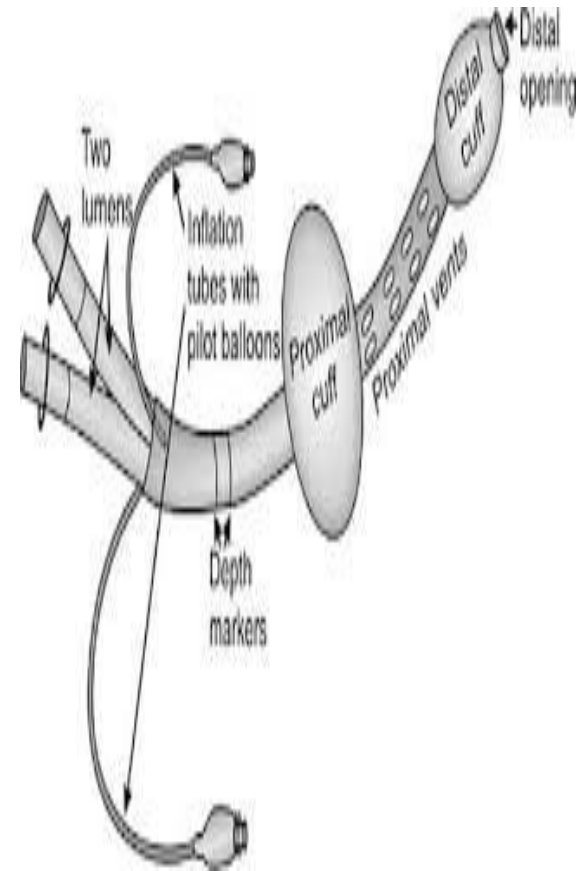
Types of Double Lumen Tubes

1. Left-sided DLT (most common)
 2. Right-sided DLT
- ❖ Common brands: Robertshaw, Carlens, White, Brobronchial types.



Structure / Parts

1. **Two lumens:** tracheal and bronchial
2. **Two cuffs:** tracheal (clear) and bronchial (blue)
3. Carinal hook (in older models)
4. Each lumen has its own **connector for the anesthesia circuit.**



Sizes

1. Adult sizes (French gauge):

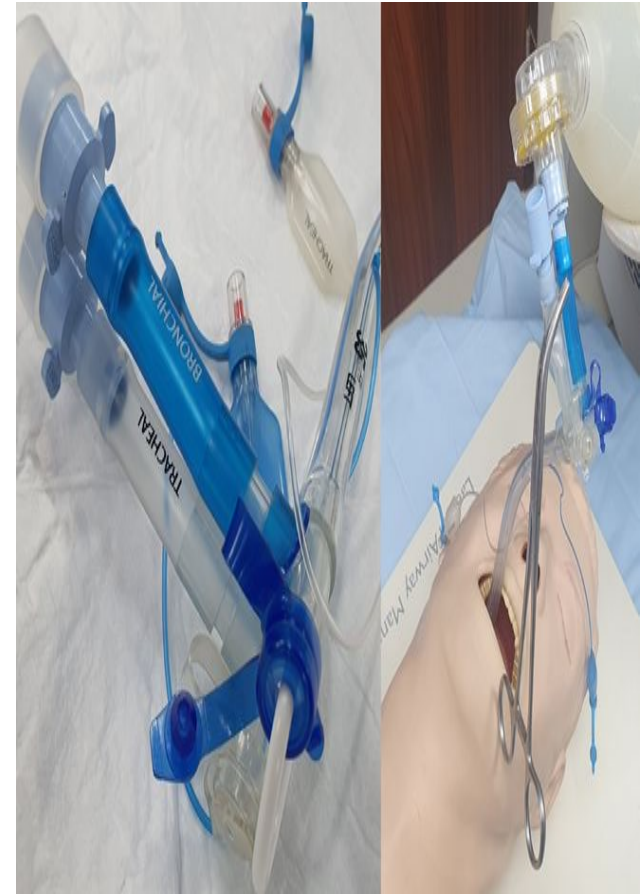
- Female: 35–37 Fr
- Male: 39–41 Fr

2. Pediatric DLTs are rare — usually single-lumen + bronchial blocker used instead.



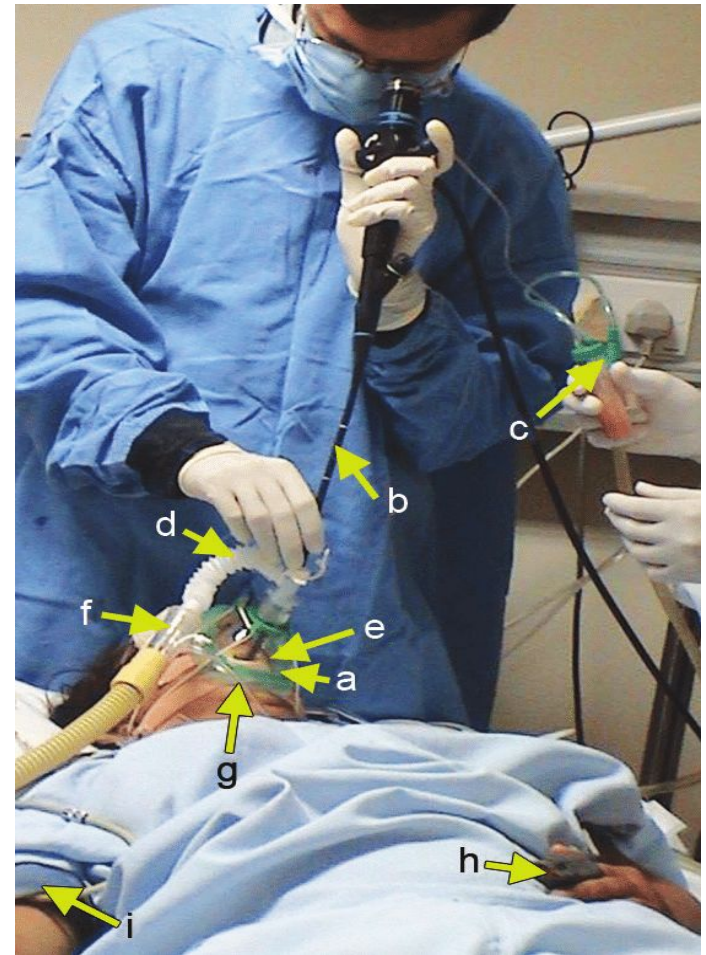
Insertion Technique

1. Pre-oxygenate and induce anesthesia.
2. Perform laryngoscopy.
3. Insert DLT like a standard ETT.
4. Rotate 90° toward the side of the bronchus.
5. Advance until resistance is felt.
6. Confirm placement by bronchoscopy or auscultation.



Confirmation of Placement

1. Auscultation: inflate bronchial cuff — only one lung ventilated.
2. Fiberoptic bronchoscopy: gold standard.
3. Observe chest rise and capnography.



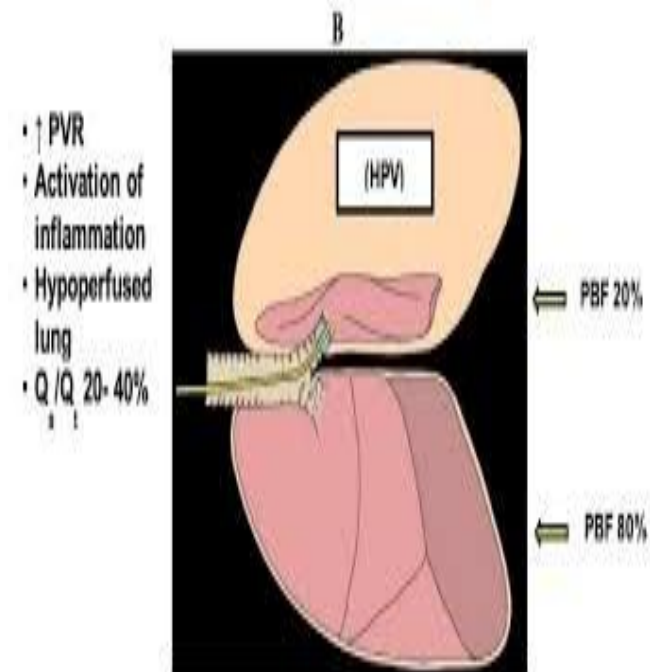
Advantages

1. Allows one-lung ventilation and isolation.
2. Prevents cross-contamination.
3. Facilitates surgical exposure.
4. Allows suctioning of each lung separately.



Disadvantages / Complications

- Difficult insertion compared to single-lumen tube.
- Possible complications:
 1. Airway trauma
 2. Hypoxemia during OLV
 3. Malposition/dislodgement
 4. Increased airway resistance.



Clinical Tips

1. Always lubricate before insertion.
2. Use bronchoscope to confirm position.
3. Monitor oxygen saturation closely.
4. Avoid overinflation of cuffs.



References

1. Miller's Anesthesia, 10th Ed.
2. Morgan & Mikhail's Clinical Anesthesiology, 7th Ed.
3. Barash: Clinical Anesthesia, 9th Ed.
4. PubMed & ResearchGate articles on DLT and OLV.

