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Bronchoscopy

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Bronchoscopy

Definition :

A technique of visualizing the inside of the airways for diagnostic and therapeutic purposes by using a bronchoscope.

Types of bronchoscopy :

Rigid

Flexible fibre optic

Rigid bronchoscopy ; Indications:

A) Diagnostic

1. To find the cause of

- Wheezing
- haemoptysis
- unexplained cough for more than 4 weeks.

2. When X-ray chest shows:

- Atelectasis of a segment, lobe or entire lung
- Localised opacity of a segment or lobe of lung
- Obstructive emphysema –to exclude foreign body.
- Hilar or mediastinal shadows.

Rigid bronchoscopy ; Indications:

3. Vocal cord palsy

4. Collection of bronchial secretions -for culture and sensitivity tests, acid fast bacilli, fungus, malignant cells.

B) Therapeutic

1. Removal of foreign bodies.

2. Removal of retained secretions or mucus plug. -in cases of head injuries, chest trauma, thoracic or abdominal surgery or comatosed patients.

bronchoscopy ; Contraindications:

Absolute

- Inability to adequately oxygenate the patient during procedure.
- coagulopathy or bleeding diathesis that cannot be corrected.
- Rigid bronchoscopy in marked kyphosis.
- Recent MI or unstable angina.
- Respiratory failure requiring mechanical ventilation.

Bronchoscopy , Technique

Methods to introduce bronchoscope:

1. Direct method

directly through the glottis

2. Through laryngoscope

glottis exposed with a spatular type laryngoscope -the bronchoscope is introduced through the laryngoscope -laryngoscope withdrawn. -Infants, young children, adults-short neck & thick tongue.

Bronchoscopy

- Procedure 1. A piece of gauze is placed on the upper teeth to avoid injury. 2. Proper-sized bronchoscope is lubricated with a swab of autoclaved liquid paraffin or jelly. Held by the shaft in the right hand in a pen-like fashion. Retract the upper lid and guide the bronchoscope with left hand. 3. Look through the scope, identify the tip of epiglottis and pass the scope behind it. The epiglottis lifted forward to expose the glottis. Rotate the scope 90° clockwise so that the tip is in the axis of glottis. Once the trachea is entered, scope is rotated back to the original position. 4. Gradually advanced the scope and the tracheobronchial tree examined. Axis of bronchoscope should correspond with axes of trachea and bronchi. 5. Direct vision, right angled and retrograde telescope can be used for magnification and detailed examination. 6. Biopsy of the lesion of suspicious area can be taken. 7. Secretions can be collected for exfoliative cytology, or bacteriologic examination.

Bronchoscopy

- Post-operative care ☐Keep patient in humid atmosphere ☐Watch for respiratory distress -due to laryngeal spasm or subglottic oedema if the procedure had been unduly prolonged or repeated introduction of bronchoscope. -inspiratory stridor and suprasternal retraction will indicate need for tracheostomy

Bronchoscopy

Complications

- Injury to the teeth
- Hemorrhage from the biopsy site
- Hypoxia and cardiac arrest
- Laryngeal oedema

Bronchoscopy

Precautions during bronchoscopy

- ✓ Select proper size
- ✓ Do not force through closed glottis
- ✓ Repeated removal and introduction should be avoided
- ✓ Should not be prolonged >20 min. in infants and children

Bronchoscopy , Flexible fibre-optic

- Provides magnification and better illumination
- Smaller size
- permits examination of subsegmental bronchi.
- Easy to use in patients with neck or jaw abnormalities.
- Can be performed under topical anaesthesia & useful for bedside examination of critically ill patients
- suction/biopsy channel provided helps to remove secretions, inspissated mucus plug and small foreign bodies.
- Can be easily passed through endotracheal tube or in tracheostomy opening.
- Limited utility in children –problem of ventilations