Bronchoscopy

Indications

Diagnostic

• Pulmonary infection -> BAL, PSB
• Haemoptysis
• Inhalational injury / airway burn
• Tracheobronchial trauma / fistula
• ETT position

Therapeutic

• Mucous plug / Lobar atelectasis
• Percutaneous dilational tracheostomy
• Haemorrhage - 1/10,000 adrenalin, placement of bronchial blocker
• Tracheobronchial trauma / fistula
• Foreign body removal
• Airway stenting

Contraindications

Absolute

• Lack of consent
• Lack of appropriately trained staff

Relative

• Refractory hypoxia
• Cardiovascular instability
• Coagulopathy

Procedure

• Consent
• Fast for 4 hours before and 2 hours after. If NG feeding -> aspirate stomach & hold feeds
• Full monitoring -> ECG, SpO2, Invasive BP or q5min NIBP, ICP if TBI
• Staffing = Operator + Anaesthetist + Nurse. If intubated, also useful to have a fourth person solely to guard the ETT.
• FiO2 to 1.0
• IV access
• If intubated -> sedate, SIMV or Pressure support with low PEEP and enough PS to achieve adequate Vt. Rarely require NMB. Attach swivel elbow to ETT and ventilator circuit.
• If not intubated -> co-phenylcaine forte spray to nasopharynx. Venturi mask or NRBM O2.
• 4 x syringes with 20mls sterile 0.9% saline for BAL
• 4 x 5ml syringes with 2mls 2% lignocaine
• Bronchoscope diameter should be at least 2mm less than the ETT internal diameter
• Attach bronchoscope to light source. Turn on. Check illumination and white balance. Check flush and suction ports. Orientate to movements of bronchoscope

• Place bronchoscope monitor along side the head of the patient's bed
• Prophylactic antibiotics only if asplenia, prosthetic heart valves or history of endocarditis
• Flush 2ml 2% lignocaine down ETT
• Place KY jelly on swivel elbow diaphragm and along tip of bronchoscope
• Turn patient's head towards you
• Introduce the bronchoscope through the swivel elbow diaphragm and advance. Identify blue line along posterior of ETT and longitudinal muscle along posterior wall of trachea
• If patient coughs, instill 2ml 2% lignocaine (max dose 5mg/kg, caution if renal, liver or cardiac disease
• Identify carina, right main bronchus & branches and left main bronchus & branches

Outcome
As per indications

Complications

• Tracheobronchial injury
• Pneumothorax, pneumomediastinum
• Hypoxia (SpO2 often drops by 25%)
• Arrhythmia
• Hypotension
• Raised ICP (though no evidence of impaired outcome)
• Infection

Evidence

Bronchoscopic aspiration of a mucous plug for atelectasis has not been shown to be more effective than aggressive chest physio