Bronchoscopy and Thoracentesis

Who should not be scoped, lidocaine limits, lavage and biopsy, recovery, and the pleural tap: position, needle site, when to stop and when to image

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BRONCHOSCOPY: BEFORE THE SCOPE

CHECK	RULE
Do not scope (absolute)	Acute hypercapnic respiratory failure unless intubated and ventilated; cannot be oxygenated during the procedure; high-grade tracheal obstruction; untreatable life-threatening arrhythmia
Caution (relative)	Recent MI (BTS: ideally wait 4 weeks); uncorrectable coagulopathy; cannot hold still
Flexible or rigid	Flexible for nearly everything; rigid for massive hemoptysis, some foreign bodies in young children, laser, stents and dilation
Topical lidocaine	Keep a running total from every site: below 300 mg and never above 4.5 mg/kg (label). 1% = 10 mg/mL, 2% = 20 mg/mL
Through an endotracheal tube	8.0 mm or larger for an adult scope; FiO_2 1.0 and a mandatory mode during the procedure
Setup	No food for 4 h, clear fluids until 2 h before; IV access; oxygen; continuous SpO_2 and ECG, blood pressure checks

- Lavage: 50–200 mL of sterile saline infused into the distal airways and suctioned back. Transbronchial biopsy: forceps sample lung through the scope. EBUS: ultrasound-guided needle sampling of mediastinal and hilar lymph nodes.
- Massive hemoptysis: bleeding lung down, rigid bronchoscopy, correct coagulopathy, bronchial artery embolization.

BRONCHOSCOPY: DURING AND AFTER

FINDING	THINK	DO
SpO_2 falling or a new arrhythmia during the scope	The scope and sedation are impairing gas exchange	Withdraw the scope and oxygenate (100% oxygen on a ventilator); resume only after recovery
Lower SpO_2 after lavage; pressures and breath sounds unchanged	Saline left in the segment: local edema, transient	Raise FiO_2 and monitor; chest radiograph if it does not settle
Fever in the first 24 h, patient stable	Inflammatory response, common after lavage	Observe; look for infection if it persists or the patient worsens
Pleuritic pain, dyspnea or quieter breath sounds after transbronchial biopsy	Pneumothorax (1–6%)	Chest radiograph
Blood-streaked sputum after biopsy	Minor bleeding, expected	Report larger amounts
Drowsy again after flumazenil	The reversal wore off before the benzodiazepine	Monitor for up to 120 minutes after the dose

- Recovery: observe 2–4 hours; nothing by mouth until the gag reflex returns; SpO_2 must hold without supplemental oxygen.
- After sedation: no driving or machinery for 24 hours.

THORACENTESIS

STEP	RULE
Indication	New or unexplained fluid at least 10 mm thick on a decubitus film, ultrasound or CT; or dyspnea from a large effusion
Guidance	Ultrasound for every tap
Position	Sitting upright, leaning slightly forward, arms supported on a table. Cannot sit (ventilated): recumbent or supine with ultrasound or CT guidance
Needle site	One intercostal space below the top of the fluid, over the upper border of the rib
During drainage	A cough as the lung re-expands is common. Stop for chest pain or tightness, worsening dyspnea, hypotension, or a persistent or severe cough. Usual limit 1.5 L
Imaging after	Not routine if asymptomatic. Needed for a ventilated patient, aspirated air, more than one needle pass, or symptoms of pneumothorax

SAFETY The intercostal vein, artery and nerve run along the lower edge of each rib: the needle passes just above a rib, never just below one.

EXAM PEARLS

EXAM TIP Acidotic and hypercapnic but not intubated: intubate, then scope through the tube. Massive hemoptysis: rigid scope. Lymph node staging: EBUS-guided needle. Lidocaine total at the limit: no more, at any concentration. Large effusion squeezing a lobe: drain it. Second needle pass: image afterward.

Sources (17) are listed with links at icubasics.com/sheets/rt-bronchoscopy-thoracentesis.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. ICU Basics is an independent study aid not affiliated with any certifying body.