Hands-on Thorax drainage
Drain insertion – techniques

- Exsufflation / needle aspiration
- Open / surgical drain (ATLS)
- Seldinger technique
  - Image guidance
- Tunneled drain (PleurX)
- Positioning

Fig 5. Position used most often for chest tube insertion: Supine, slightly rotated to the opposite side with the ipsilateral arm under the head.

Fig 6. Sitting position with the patient leaning over the cardiac trolley.
- Positioning
- Premedication/local anesthetic
- Pain control
- Complications
  - incorrect placement (extrapleural, in the fissure, drainage holes outside the pleura, tube kinked)
  - injury to intercostals vessels /organs
  - perforation of other vessels
  - pain
Drains

- Different sizes
  - From infants to adults
  - Small for air, larger for fluid

- Different configurations
  - Curved or straight

- Types of plastic
  - PVC
  - Silicone

- Coated/Non-Coated
  - Heparin
  - Decrease friction
Drainage systems

- Underwater seal
- Dry systems
  - Electronic
  - Flutter valve bag
  - Dry valve box (pneumostat etc)
Esxsufflation / Needle aspiration
Surgical
Surgical

- long thoracic nerve
- lateral cutaneous branches of intercostal nerves
Surgical
Surgical
Seldinger technique

- Find with the needle what you are looking for!

- Prepare the chest tube insertion site with local anesthesia using standard hospital protocol
- Make a small skin incision slightly larger than the diameter of the chest tube (Figure 1)

- Administer additional local anesthesia to the skin
- Advance the 18 gage introducer needle over the superior border of the rib into the pleural space (Figure 2)

- Dilate the tract and opening into the pleural space by advancing in sequence (small to large) the supplied dilators over the wire guide
- Introduction into the pleural space is facilitated by rotating and advancing dilators in the same plane of the wire guide to prevent kinking (Figure 4)

- Advance the chest inserter/chest tube assembly over the wire guide and into the pleural space (Figure 5)

- Remove the wire guide and chest tube inserter, leaving the chest tube in place
- Suture the chest tube to the skin. Chest tube is ready for use (Figure 6).
Tunneled drains
Surveillance

- Air leak
- Amount of drainage
- Pain control - again
Drain removal

- When?
- How?
Various

- Re-expansion oedema
- Suction / no suction?
  - How much?
  - Duration?
- Air leak
- Clamping?
- Use an old drain site?
Thank you!

- Questions?