INDICATION

- Tension pneumothorax, characterized by an air leak into pleural space through a hole in the lung, acting as a one-way valve.
- Assessment confirmed by hypotension, tachycardia, and by at least one of the following:
  - Decreased breath sounds, unilaterally or bilaterally.
  - Extreme dyspnea associated with low SPO2.
  - Neck vein distension.
  - Agitation.
  - Possible cyanosis.
  - Tracheal shift away from affected side (Late sign, can be difficult to detect).
- Traumatic arrest with thoracic injury.

PROCEDURE

- Locate and clean the insertion site with chlorhexidine swabs.
- Insert the angiocatheter into 1 of 2 sites:
  - The 2nd intercostal space on the mid-clavicular line, penetrating over the 3rd rib at a 90° angle to the chest wall on the affected side; or
  - The 4th or 5th intercostal space in the mid-axillary line, penetrating over the 5th or the 6th rib at a 90° angle to the chest wall on the affected side (pull the pectoralis muscle forward and insert needle adjacent to your middle finger).
- Advance the needle until lack of resistance or “pop” as needle enters pleural space, followed by a possible hiss of air.
- While holding the angiocatheter, advance the catheter all the way to the hub and remove the needle.
- Secure catheter with needle guard or tape.
- Attach connecting tubing.
- Attach one-way valve device.

KEY CONCEPTS

- In patients where cannulation into the pleural space is not probable / possible (e.g. bariatric patients), contact the base hospital for on-line medical control regarding a possible procedure site variation.