

Vanderbilt University Medical Center
Division of Trauma
Nurse Practitioner Protocols

Protocol: Chest Tube Removal

Purpose:

To describe the procedure for removing a chest tube

Indication:

Indicated for chest tubes deemed safe for removal by protocol, fellow, or attending.

Procedure :

A. Equipment

1. Suture Removal Kit
2. Vaseline Gauze
3. 4 X 4 gauze
4. 3-inch tape

B. Procedure for Radial Arterial Line Insertion

1. All chest tubes will remain in place for a minimum of 24 hours
2. Record chest tube output of past 24 hour period every morning.
 - a. Consider removing chest tube once output is less than 200ml in 24 hour period.
3. Obtain CXR every morning
 - a. If CXR normal, then discuss with fellow/attending about the need for placing chest tube on water seal for 4 hours.
 - 1) If water seal is indicated, then obtain CXR 4 hours after placing chest tube on water seal
 - 2) If no indication for water seal, then consider removing chest tube in collaboration with fellow/attending.
 - b. If CXR abnormal, then discuss with fellow/attending about future plan
4. Removing Chest tube
 - a. Remove sutures around chest tube while holding chest tube steadily in place.
 - b. Instruct patient to perform valsalva maneuver
 - c. Withdraw chest tube quickly while simultaneously covering entrance site with vaseline gauze.
 - d. Tightly tape 4 X 4 gauze over entire entrance site ensuring that no air is able to leak into the chest tube wound.
 - e. Order CXR 4 hours following chest tube removal
 - f. Document chest tube removal on skill check off sheet.
5. Monitor
 - a. Respiratory pattern
 - b. Chest excursion
 - c. Oxygen saturations
 - d. Respiratory rate

- e. Heart rate
 - f. Blood pressure
- C. Due to high complication rates, the NP must perform 5 successful chest tube removals under the direct supervision of a resident/fellow/attending before performing independently. As well, NP must perform at least 10 chest tube removals per year in order to maintain competency.
- D. Complications to assess for:
1. arterial thrombosis
 2. air embolism
 3. hematoma
 4. arterial vasospasm
 5. bleeding
 6. infection

References

Becker, D.E. (2001) Arterial catheter insertion (Perform). AACN Procedure Manual for Critical Care, 4th Ed., W.B. Saunders, Philadelphia, PA, pgs. 361 – 365.