

STANDARDIZED PROCEDURE

NEONATAL CHEST TUBE REMOVAL (Neonatal)

I. Definition

To remove an indwelling chest tube in a neonatal patient.

II. Background Information

A. Setting

Inpatient neonatal patients or outpatient during Emergency Transport of neonatal patients. If appropriate, implement procedural support, if available- make sure Child Life is involved, and use age appropriate language and age appropriate developmental needs with care of children.

B. Supervision

The necessity of the procedure will be determined by the Advanced Health Practitioner (AHP) in verbal collaboration with the attending physician or his/her designee. Direct supervision is necessary until competency is determined and the minimum number of procedures is successfully completed, as provided for in the protocol. After that time, the attending physician or his/her designee must be available.

Designee is defined as another attending physician who works directly with the supervising physician and is authorized to oversee the procedures being done by the AHP.

C. Indications

1. Chest tube no longer needed.
2. Chest tube is no longer functioning.

D. Precautions/Contraindications

1. Do not clamp tube.

The AHP will notify the physician immediately under the following circumstances:

1. Patient decompensation or intolerance to the procedure
2. Outcome of the procedure other than expected

III. Materials

1. Morphine Sulfate or other pain medication
2. Suture removal kit
3. ChloroPrep
4. Sterile gloves
5. Occlusive dressing (IE: Petroleum or Xeroform gauze)
6. Sterile Steri-strips

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7. 2 X 2 Gauze pads
8. Tegaderm or Opsite dressing

IV. Neonatal Chest Tube Removal

A. Pre-treatment evaluation

1. Premedicate infant for pain control and/or sedation. Assess need for further medication throughout the procedure.

B. Set up (if applicable)

1. Gather needed supplies

C. Patient Preparation

1. Attempt to inform the patient/family of the treatment plan, otherwise notify them after the procedure is completed.
2. Tube should be left to water seal for 2-12 hours prior to removal, then obtain chest x-ray to determine further need for tube. **Never clamp tube.**

D. Procedure

1. Perform time out with all appropriate steps.
2. Position infant in a position that gives adequate access to the chest tube site.
3. Remove dressings.
4. Don sterile gloves.
5. Cleanse the skin in area of chest tube with ChloroPrep. Allow to dry.
6. Remove sutures. Do not use purse string sutures for closing incision, as this leaves an undesirable scar.
7. If the baby is on a ventilator, attempt to time tube removal with ventilator inspiration. If the infant is breathing spontaneously, it is better to remove the tube during early exhalation, just after end inspiration, so that the pleural pressure is slightly positive. Gently and firmly withdraw the chest tube in a single motion. Palpate pleural entry site and hold finger over it to prevent air entering chest as tube is withdrawn and until gauze is applied.

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8. After removing the tube, approximate the wound edges and place sterile steri-strips, then petroleum/Xeroform gauze over incision. Keep pressure on pleural wound until dressing is in place.
9. If the incision is large and gaping, administer local anesthetic and close incision with linear sutures, then cover with petroleum gauze.
10. Cover petroleum gauze with sterile 2 X 2, then Opsite or Tegaderm.

E. Follow-up treatment

1. Properly dispose of the chest tube catheter and other used materials.
2. Obtain chest x-ray to look for any free air.

F. Termination of treatment

Chest tube is terminated when the tube is no longer functioning or needed.

G. Potential Complications:

1. Air leak from air being introduced into the pleural cavity during tube removal.
2. Infection
3. Bleeding

IV. Documentation

A. Documentation is in the electronic medical record

1. Documentation of the pretreatment evaluation and any abnormal physical findings.
2. Record the time out, indication for the procedure, procedure, type and size of tube removed, EBL, the outcome, how the patient tolerated the procedure, medications (drug, dose, route, & time) given, complications, and the plan in the note.

B. All abnormal findings are reviewed with Attending or supervising physician

V. Competency Assessment

A. Initial Competence

1. The AHP will observe the procedure in its entirety at least once. Under the direct supervision of the attending physician the AHP will perform neonatal chest tube removal successfully **three** times and will be evaluated for competence and technical skill.
2. The AHP will demonstrate knowledge of the following:

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- a. Medical indication and contraindications of neonatal chest tube removal.
 - b. Risks and benefits of the procedure
 - c. Related anatomy and physiology
 - d. Consent process (if applicable)
 - e. Steps in performing the procedure
 - f. Documentation of the procedure
 - g. Ability to interpret results and implications in management.
3. The AHP will ensure the completion of competency sign off documents and send them directly to the medical staff office.

B. Continued proficiency

1. The AHP will demonstrate competence by successful completion of the initial competency.
2. Each candidate will be initially proctored and signed off by an attending physician. AHPs must perform this procedure at least **three** times per year. In cases where this minimum is not met, the AHP must demonstrate skill with this procedure in a simulation or skills lab, or the attending, must again sign off the procedure for the AHP. The AHP will be signed off after demonstrating 100% accuracy in completing the procedure.
3. Demonstration of continued proficiency shall be monitored through the annual evaluation.
4. A clinical practice outcomes log is to be submitted with each renewal of credentials. It will include the number of procedures performed per year and any adverse outcomes. If an adverse outcome occurred, a copy of the procedure note will be submitted.

VII. RESPONSIBILITY

Questions about this procedure should be directed to the Chief Nursing and Patient Care Services Officer at 353-4380.

VIII. HISTORY OF POLICY

Initial policy approved 1986 by CIDP and EMB

Revised 4/89, 1/93, 5/01, 7/03, 12/05, 6/08, 2/11

Revised most recently July 2012 by Subcommittee of the Committee for Interdisciplinary Practice

Reviewed most recently July 2012 by the Committee on Interdisciplinary Practice

Approved most recently July 2012 by the Executive Medical Board and the Governance Advisory Council.

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