ASSISTING WITH THORACENTESIS

PURPOSE:
To provide direction to the nurse regarding the preparation of the patient and monitoring of the patient during thoracentesis; and to provide assistance and support to the physician/allied health practitioner during the procedure. To provide post-procedure care for inpatient and outpatients undergoing thoracentesis.

KNOWLEDGE BASE:
1. Thoracentesis is a procedure usually done to obtain a pleural fluid specimen for diagnosis, or to instill medication. The procedure may be done therapeutically to drain a pleural effusion.

2. Each lung is enclosed in two serous membranes: The visceral pleura, which adheres to the surface of the lung, and the parietal pleura, which lines the inner surface of the chest wall. The space between these two layers is called the pleural cavity and it contains a small amount of serous fluid. During normal breathing the pleural fluid reduces friction between the lungs and the chest wall. Large accumulation of pleural fluid usually requires removal to facilitate breathing.

3. The puncture site is determined by ultrasound and percussion of the chest (maximum site of dullness). The procedure may take place in Radiology Services (ultrasound or CT) or may be done at the patient’s bedside.

4. Informed Consent must be obtained prior to this procedure. The side and/or site should be marked prior to Time Out.

5. Positive patient identification is required prior to performing procedure/labeling. Refer to SMH Policy (01.PAT.09) Patient Identification: Inpatient/Outpatient.

6. The thoracentesis needle is inserted into the appropriate intercostal space by the physician/allied health practitioner.

7. During and after the procedure the patient is observed for signs and symptoms of respiratory distress.

POSSIBLE CONTRAINDICATIONS:
1. Lack of patient cooperation (unable to follow directions)
2. Uncorrected coagulopathy
3. Unstable angina and cardiac instability
4. Insufficient fluid in lungs
KNOWLEDGE BASE: POSSIBLE COMPLICATIONS:
(cont’d) Complications are uncommon and may include: pneumothorax, hemorrhage into the pleural space or chest wall, vasovagal syncope (fainting), air emboli, introduction of infection, puncture of the spleen or liver, and reexpansion pulmonary edema due to rapid removal of more than one liter of fluid.

PATIENT EDUCATION:
1. Explain the procedure to the patient and inform them to try not to cough, not to breathe deeply, and not to move suddenly during the procedure to avoid puncture of the visceral pleura or lung.
2. Inform the patient that the procedure may have some discomfort but, there is a burning sensation with the local anesthetic, pressure is felt during the needle insertion, and possibly, pleuritic pain with lung expansion, and possibly hemoptysis.
3. Explain to patient they need to inform the physician about increasing shortness of breath, chest pain or hemoptysis.

EQUIPMENT:
Assemble the following equipment:
1. Thoracentesis tray from Central Services. (There are three different trays that can be used: a nondisposable tray; a disposable tray with a catheter; a disposable tray with an aspirating needle).
2. Skin prep solution, applicators.
3. Sterile gloves.
4. Local anesthetic: Lidocaine hydrochloride, 1% (included in the disposable tray), or 2% if requested by the physician.
5. Dressing and tape
6. For large effusions, obtain from Central Services, 2-3 glass-vacuum 1/L drainage bottles for collection of fluid. If added, label specimens
7. Heparin may be needed if pH specimen (place on ice).

PROCEDURE:
1. Check the medical record for any drug allergies.
2. Check for labs within 24 hours for inpatients and within one week for outpatients -- PT/INR, platelet count, and any other lab orders. Confirm with the patient that they stopped any anticoagulants.

Verify completed pre-procedure checklist and signed consent form. Physicians must specify the exact procedure, site and side. The words, “right”, “left”, “midline”, or “bilateral” must be used unless the site and side are standard and unequivocal or cannot be established until after intraoperative direct visual or radiographic exam. Perform a Time Out. (Refer to Policy 01.PAT.18) If moderate sedation is necessary. The patient will sign the Moderate Sedation consent. Moderate Sedation, if ordered, will be given in accordance with Hospital Policy #00.PAT.38.
PROCEDURE (cont'd):

3. Obtain baseline vital signs including a pulse oximetry reading and assess respiratory function (Lippincott, 2015).

4. Position the patient. Seat the patient on the edge of the bed with his legs supported and his head and folded arms resting on a pillow on the overbed table. If the patient is unable to sit, turn him on the unaffected side with the arm of the affected side raised above his head. Elevate the head of the bed thirty to forty five degrees.

Note: If procedure done in Radiology CT, position may vary.

5. Remind the patient not to cough, not to breathe deeply, and not to move suddenly during the procedure.

6. Verbally guide him/her through each procedural step.

7. Place the drainage bottles within easy reach.

8. Expose the back.

9. Perform “timeout” per hospital policy (01.PAT.18) to re-verify correct patient, procedure and site. If procedure is done at the bedside, document the “time-out” on the Bedside or Outpatient Procedural Record.


11. At this time, the physician/practitioner will prep the patient and may administer a local anesthetic (1% or 2% lidocaine) after draping the patient.

12. The physician/practitioner will insert the needle into the pleural space. Assist with collection of the specimen and fluid drainage. Fluid can be aspirated with a syringe, or tubing can be connected to allow fluid to drain into the collecting bottle. Label all specimens with date/time/collectors initials/pleural side (right or left)/and “Pleural fluid”.

13. Monitor pulse oximetry/pulse/BP if indicated by the patient’s condition.

14. The physician will stop the procedure if severe pain, breathlessness, bradycardia, syncope or other significant symptoms occur. These symptoms may indicate such complications as hypovolemic shock, tension pneumothorax and cardiac distress.

17. Apply a band-aid or an occlusive bandage after the needle is withdrawn by the MD.

PROCEDURE (cont’d):

18. Obtain a post procedure chest x-ray (per MD order).
19. Post procedure, monitor vital signs, respiratory status and dressing (for drainage) post procedure and as ordered by the physician.

20. Send the correctly labeled specimens to the laboratory and dispose of all equipment properly.

**POST CARE FOR PATIENTS WHOSE THORACENTESIS IS PERFORMED IN RADIOLOGY SERVICES:**

1. After completion of the thoracentesis in Radiology Services, inpatients will be transported back to their rooms. If patient is sedated for the procedure, the patient will be transferred per Moderate Sedation policy #00.PAT.38.

2. Outpatients will be escorted to Radiology Nursing Unit by a Radiology Nurse or Ultrasonographer. While under the care of the pre/post area:
   - The patient will have vitals monitored (BP, Pulse, SpO₂) post procedure.
   - The patient will be offered fluids if not contraindicated.
   - The patient will be educated as to the post-procedure care.
   - The patient will be instructed on how and when to call their physician if necessary.

3. Outpatients will be discharged home with ExitCare Discharge teaching after pre/post observation time of at least thirty (30) minutes. The post-procedure CXR needs to read as “clear” with no pneumothorax or complications.

**DOCUMENTATION:**

1. **SCM Intake & Output Flowsheet:** Enter the amount of fluid aspirated/drained.

2. **Nursing Reassessment:** Document the location of puncture site; the amount, color, odor and viscosity of the aspirated fluid; vital signs, respiratory status before and after the procedure; any post-procedure drainage; patient response to the procedure; the disposition of the specimens.

**REFERENCE:**


SMH Corporate Policy. OSHA Bloodborne Pathogen Exposure Control Plan (00.IFC.71) SMH: Author.


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APPROVAL: Clinical Practice Council 1/5/17