HACKETTSTOWN REGIONAL MEDICAL CENTER

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MINOR PROCEDURE
(Scope)

TITLE: FLEXIBLE BRONCHOSCOPY

PURPOSE: To outline the steps for assisting with flexible bronchoscopy

SUPPORTIVE DATA:

1. Flexible bronchoscopy is the direct visualization of the tracheobronchial tree using a flexible bronchoscope. The bronchoscope may be passed either transnasally, transorally, through orotracheal or nasotracheal tube, tracheostomy or stoma.

2. This procedure enables the physician to diagnose, treat and document abnormalities via inspection, biopsy, brushing, lavaging and needle aspiration.

Indications:

A. Diagnostic

1. Abnormal chest x-ray
2. Neoplastic lesions
3. Hemoptysis
4. Change in nature or frequency of cough
5. Localized wheezing
6. Unresolved pneumonia
7. Lung abscess
8. Atelectasis
9. Abnormal sputum cytology
10. Recurrence of neoplasm
11. Diffuse lung lesion
12. Pulmonary infiltrate secondary to infectious etiology
13. Assessment of airway involvement in burn patient.
14. Possible airway rupture
15. Assessment of airway status (e.g., tracheal stenosis)

B. Therapeutic

1. Removal of retained or impacted secretions associated with atelectasis, pneumonia or lung abscess.
2. Removal of foreign bodies.
3. Lung lavage to improve function in patients with alveolar proteinosis.
4. Insertion of endotracheal tube.
5. Evaluation of position of endotracheal tube.
6. Mucosal debridement in burn patient.

EQUIPMENT LIST:

1. Flexible Bronchoscope
2. Light source or video processor, video camera, monitor and mavigraph
3. Two suction canisters, tubings, and Yankaver suction tip.
4. Automatic monitoring equipment for blood pressure, pulse, respiration, ECG and oximetry
5. Oxygen with nasal cannula or face mask
6. Ambu bag with oxygen tubing
7. Emergency airway box which contains:
   a. Endotracheal tubes of varying sizes with stylet and adapters for endotracheal tube
   b. Ambu bag with mask, reservoir and oxygen tubing
   c. Laryngoscope with blade
   d. Oxygen masks and tubing
   e. Nasal and oral airways
   f. Tongue bladesg. 10cc syringe
   h. Twill tape
   i. Sterile suction tubing
8. Chest tube set
9. Fluoroscopy, lead aprons and dosimeters when requested by physician
10. Refer to "Safety Protocol" (Addendum #1 in structure portion of Minor Procedure Manual).

SUPPLIES:

1. Medications for sedation, analgesia and to dry oral secretions and prevent vasovagal reactions.
2. Syringes, needles, alcohol wipes
3. Three (3) eccentric tip syringes
4. Three (3) sterile labeled paint cups containing:
   a. 1% Lidocaine, 40-60cc
   b. Saline, enough to fill paint cup
   c. Epinephrine 1:1,000, one ampule diluted with 19cc Saline
5. Local anesthetic for nares - 2% Xylocaine Jelly and for pharynx - Cetacaine or Hurricaine spray
6. Cotton tipped applicators
7. Atomizer or nebulizer per physician preference
8. Xylocaine viscous 2% and Xylocaine 4% for anesthetizing upper airway, Xylocaine Jelly 2%, Lidocaine 2% for atomizer, 10% Mucomyst to loosen secretions per physician preference as needed.
9. Gloves, gowns, masks and goggles for personnel and physician
10. Gauze sponges - 6
11. Mouthpiece
12. IV equipment
13. Chux - 2
14. Tissues, emesis basin
15. Specimen trap - attached to suction tubing prior to procedure or during procedure depending on physician preference.
16. X-ray requisition form

NOTE: Extra supplies needed for biopsies, brushings, lavage and needle aspiration - see individual policies.

CONTENT:

PROCEDURE STEPS:

A. Pre-Procedure Assessment/Care:

1. Verify signed informed consent.

2. Verify that outpatient has someone to drive him home.

3. Obtain baseline vital signs, 0_2 saturation, and cardiac rhythm and document.

4. Obtain patient's medical history including allergies, current medications and information pertinent to current complaint and document.

5. Obtain necessary laboratory results (e.g., platelet count, PT, PTT).

6. Notify physician if patient is currently on anti-coagulation therapy, aspirin or nonsteroid anti-inflammatory products and if laboratory results are abnormal.

7. Verify length of NPO status - should be at least 6-8 hours. 8. Establish patent IV line as ordered and document according to IV protocol.

9. Administer antibiotic prophylaxis as ordered and document.

10. Administer pre-medications, as ordered, if an outpatient, and document.

    Explain the use of premedications, if they are ordered:
    a. Atropine 0.4-0.6mg IM, or Robinul 0.2mg IM, to prevent vasovagal reaction and reduce secretions.
    b. Narcotic analgesic or opiate used to suppress cough as well as anxiety.

11. Ascertain from patient which nares appear to be more open.

12. Anesthetize upper airway via nebulizer treatment with 4% Xylocaine, gargle with Xylocaine 2% Viscous, Xylocaine Jelly 2% to nasal passages with cotton-tip applicators,

KEY POINTS:

Contraindications:
1. Acute asthmatic episode.
2. Noncompliance with NPO
3. Hypoxia, unless patient is intubated
4. Uncooperative patient

or prepare atomizer spray with 2% Lidocaine for physician to anesthetize upper airway. (Nebulizer treatment given by respiratory therapist.) If transoral route to be used, anesthetize pharynx with Hurricaine or Cetacaine spray.

13. Explain the purpose of the procedure, positioning, relaxation methods, techniques to be used, estimated length of the procedure and sensations the patient is likely to experience during and after the bronchoscopy.

14. Reassure the patient that the bronchoscope will not interfere with breathing.

15. Explain the need for supplemental oxygen administration.

16. Explain the use of automatic monitoring devices during the exam and attach patient to monitor.

17. Explain the effects of the topical anesthetic medications and their methods of administration.

18. Explain the use of additional IV sedative medication that may be used during the exam.

19. Document teaching and patient comprehension.

20. Test equipment and apply a drop of H_2O based silicone from bronchoscope manufacturer to distal tip of scope and to help prevent secretions from adhering to the lens.

B. Responsibilities During Procedure:

1. Position patient according to physician's preference - sitting up in bed, or supine.

2. Administer oxygen via nasal cannula or face mask, depending on

Key Points:

Potential Complications:
1. Bleeding
2. Pneumothorax
3. Hypoxemia
4. Bronchospasm
5. Cardiac arrhythmias

patient's condition, at rate of flow ordered by physician and document.

3. Assist physician with medication administration. Document time, amount of medication given and patient's response.

4. Assist physician during procedure (physician may be assisted by respiratory therapist or nurse).

5. Monitor vital signs, color, warmth, and dryness of skin, level of consciousness, and character of respirations. Document any abnormalities. (Printout will provide V.S., ECG and 0_2 saturation every five minutes)

6. Provide emotional support to the patient.

7. Maintain airway, suctioning oral secretions as necessary.

C. Post-Procedure Assessment/Care

1. Monitor vital signs and document, according to physician's order, or at least every 15 minutes x 2.

2. Observe patient for:
   a. Bleeding
   b. Change in vital signs
   c. Respiratory distress
   d. Chest pain
   e. Temperature elevation

   Document if any of above are noted and notify physician of same.

3. Call Radiology for STAT chest x-ray as ordered and document when x-ray completed.

4. Maintain NPO status until gag reflex

5. Remove IV line prior to outpatient's

6. Provide outpatient with written discharge instructions.

6. Respiratory and/or cardiac arrest
7. Pulmonary hypertension
8. Laryngospasm
9. Reaction to topical anesthetic
10. Hypoventilation
11. Myocardial infarction
12. Post-bronchoscopy fever/infection
13. Aspiration pneumonia

7. Obtain results of chest x-ray and report any abnormalities to physician.

8. Discharge outpatient as ordered; sedated outpatient must have someone to drive him home.

9. Provide verbal report to nurse responsible for inpatient's care including findings, vital signs, sedation given and patient response during procedure.

Reference: MANUAL OF PULMONARY PROCEDURES, FOR ENDOSCOPY NURSES, SGNA Inc., 2001,

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