
DISORDER OF THE RESPIRATORY SYSTEM

Outlines

- +Anatomic and Physiologic Overview respiratory system
- +Assessment of pt with respiratory problem
- + Management of Patients with respiratory problem

Objectives

After completion of this topic you will be able to:

- + Explain Anatomy and Physiology of respiratory system
- + Assess patients with respiratory disorder
- + Give best management for patients with different respiratory disorder

Anatomic and Physiologic Overview

Anatomic and Physiologic Overview

cont... • The respiratory system is composed of

- The upper and lower respiratory tracts
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- Together, the two tracts are responsible for
 - **ventilation (movement of air in and out of the airways)**
- The URT, known as the upper airway, warms and filters inspired air
- The LRT (the lungs) can accomplish gas exchange

Anatomic and Physiologic Overview cont...

Upper respiratory tract:

This consists of :

-
- nose & Para nasal sinuses
 - pharynx
 - larynx
-
- * It serves as a **conducting passage** for air as it enters & leaves the lungs
 - Its primary functions are to warm, humidify, & filter entering air & to protect the lower airway from foreign

Anatomic and Physiologic Overview cont...

Lower respiratory tract :

- * Begins at the trachea, or windpipe, and ends at the alveoli (air sacs in the lungs where gas exchange takes place).
- It includes:
 - Right & left main stem bronchi / large airways of lungs/
 - Segmental & sub segmental bronchi
 - Bronchioles
 - Alveolar sacs

Anatomic and Physiologic Overview cont...

- The lungs are covered by two **thin membranes**:
 - Visceral pleura: connected to the lungs
 - Parietal >> : lining the ribs & chest wall.
- Pleura cavity: is the potential space between visceral & parietal pleura.
- It contains serous fluid (lubricates, so that it prevent friction rub of the two pleura membrane.
- The lungs are located within the thoracic cavity and it is surrounded by the ribs and muscles.

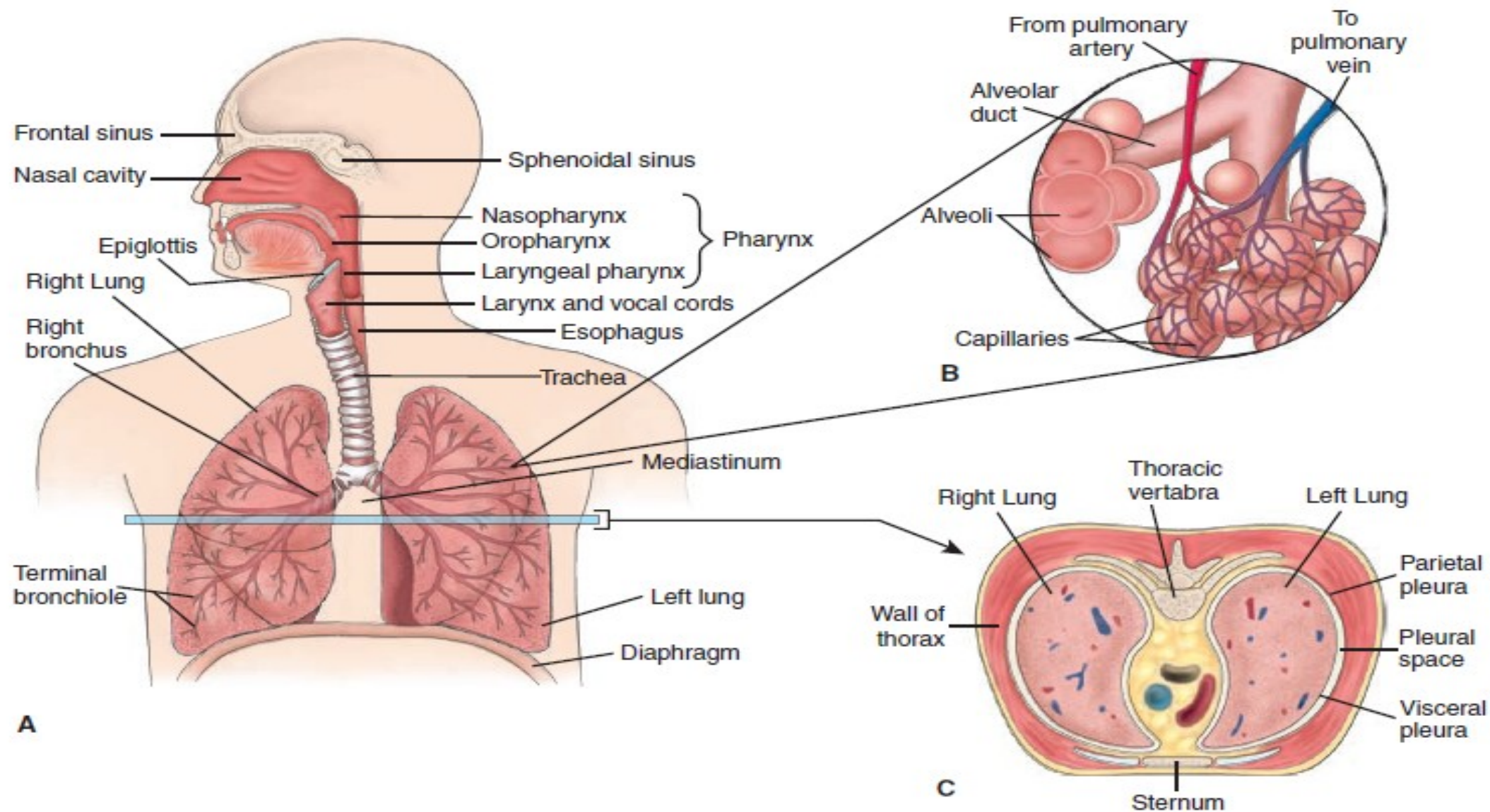


FIGURE 19-1. Major structures of the respiratory system. (A) Overview. (B) Alveoli (air sacs) of the lungs and the blood capillaries.

Assessment of patient with respiratory disorder

- **Assessment** is a vital part of nursing care
 - It reveal changes in respiratory function that can threaten well being
-
- The main components of respiratory assessment include:
 - Nursing history
 - Physical assessment
 - Review of laboratory
 - Diagnostic study results

Assessment of patient with respiratory disorder...

Health history

- Begin the history by determining the person's chief complaint
- Try to place the development of symptoms with in a time frame / e.g. months or years /.
- Complete information should be obtained to verify the exact nature of major manifestation of broncho-pulmonary disease such as **dyspnoea, cough , sputum production, haemoptysis, & pain with breathing / pleurtic pain /**

Physical assessment

Inspection :- observe the following :

- Facial Features for pallor, cyanosis of the lips & mucous membranes, flaring of nares during inhalation and note neck vein distention.
- ~~Appearance of chest wall~~
- Respiratory pattern :

Palpation

- Test for symmetry of chest expansion
- to detect tracheal deviation&
- tactile fremitus.
- Normal chest expansion during inspiration is symmetrical
- The trachea is normally in a straight, vertical position, pneumothorax can cause a shift in the trachea from its normal midline position

Physical assessment

Percussion:-

- Normally reveals a hallow, loud, low -pitched resonant Sound because the lung is air- filled.
- Dullness may indicate masses, fluid, or tissue filled lung space
- Hyper resonant indicates hyperinflation of the lung with air.

Auscultation

- Anterior & posterior chest should be auscultated
- Normal breath sound:-
 - **Bronchial breath sounds** (expiration is longer than inspiration) over the trachea
 - **Broncho vesicular sound** (inspiration is equal to expiration) over first & second anterior intercostals spaces & posterior between scapula
 - **Vesicular sound** (inspiration is longer than expiration) over all lung area

Common diagnostic procedures

- Radiography - Chest x-ray
 - Computed Tomography scan- CT scan
-
- Fluoroscopy:
 - Barium Swallow
 - Bronchography
 - Bronchoscopy
 - Sputum Examination
 - Thoracentesis

Upper Respiratory disorders

Tonsillitis: -

- It is an inflammation & enlargement of the tonsil tissue,

Causative agent:- Group A streptococcus

-It can be viral in origin

-It is very common up to the age of

15years.

Tonsillitis...

Predisposing factor:-URTI

-Lowered immunity

-pollution

Clinical Features:- sore throat, dysphagia, headaches, & fever

Diagnostic evaluation

- History
- Physical examination / visual inspection/
- Culture & sensitivity.

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Tonsillitis...

Medical Mx:

- Amoxicillin 500mg po. t id for 7 days OR
- Erythromycin 500mg. po. Qid for seven days OR
- Benz. Penicillin 2.4Million Iu. IM. divide stat

Nursing intervention: -

- Analgesics such as paracetamol 500mg 2 tabs PRN
- Tepid sponge
- Bed rest and soft diet
- Warm saline gargles

Tonsillitis...

Complications: -

- Laryngeal edema
- Acute otitis media
- Septicemia
- Chronic tonsillitis

Tonsillitis...

Chronic tonsillitis

- It is due to recurrent acute tonsillitis attack

Etiology: - similar to acute tonsillitis

C/M; - recurrent pain

- cough
- enlarged cervical lymph node

R/X: - Nutritious diet & vitamins

- Antibiotic & Analgesics
- Tonsillectomy / for recurrent tonsillitis which does not respond to antibiotic

Pharyngitis

- It is a febrile inflammation of the throat

Causative agent:-

- Viral organism 70%
- Group A streptococcus is the most common bacterial organism

Pharyngitis

Clinical Features

- Red pharyngeal membrane & tonsil
- Enlarged & tender cervical lymph nodes
- Fever, malaise, & sore throat

Diagnosis: - clinical sing & symptoms

Differential diagnosis: -

- tonsillitis
- laryngitis
- diphtheria



Pharyngitis

Medical Rx: - For bacterial causes

- Ampicillin 500mg po Qid for 10 days **or**
- Erythromycin 500mg p.o. QID for 10 days

Nursing Intervention:-

- Instruct **bed rest** during febrile stage of illness.
- **Liquid or soft diet** is provided during acute stage of the disease.
- Warm saline gargles or irrigation are used. Irrigating the throat properly is an effective means of reducing spasm in the pharyngeal muscle.
- Acetaminophen 500mg 2 tabs at 6 hour interval.
- Mouth care can be given.

Pharyngitis

Complication: -

- Otitis Media
- Mastoiditis
- Meningitis

Laryngitis

- It is an **inflammation** of the larynx often occurs as a result of **voice abuse, exposure to dust, chemicals, smoke, & other pollutant**
-

Etiology:

- Almost always virus
- Bacterial invasion may be secondary

Laryngitis...

Risk factors:

- ✓ URTI
-
- ✓ Vocal misuse and over use
 - ✓ Irritation / smoking, alcohol /
 - ✓ Seasonal changes
 - ✓ Iatrogenic / intubations and endo-laryngeal surgery /
- Usually associated with acute rhinitis or naso-pharyngitis.
 - It is common in winter & is easily transmitted

Laryngitis...

- **Clinical Features**:- hoarseness or complete loss of voice & severe cough
-
- pain occurs in severe cases
 - Stridor may be present in children
 - edema, exudates, congestion
 - Laryngitis can be the complication of chronic sinusitis & chronic bronchitis.

Laryngitis...

- **Medical Management**

- Resting the voice
-

- Avoid smoking,

- Bed rest

- Inhaling cool steam or aerosol

- Treat secondary bacterial infection with antibiotics

Laryngitis...

Nursing Intervention

- Clearing airway:
 - Increase fluid intake
 - Humidifying the environment /inhaling steam/.
- Promote comfort Measures
- Give analgesics / acetaminophen . . . /
- Promoting communication
- Voice rest
- Encouraging fluid intake
- Patient teaching – treatment regimen, prevention
- Monitor & Manage potential complication

■ ***Lower Respiratory Disorders***

Acute tracheo-bronchitis

Def: -

- Is an acute inflammation of the mucous membranes of the trachea & the bronchial tree that often follows infections of the URT
-

Causative agents: -

- It is often virus but the common bacterial causes are:-
 - Streptococcus pneumoniae
 - Haemophilus Influenza
 - Mycoplasma pneumonia

Acute tracheo-bronchitis...

Predisposing factors:-

- Pre- existing URTI
- Inhalation of physical & chemical irritants gases & other air contaminants

Acute tracheo-bronchitis...

Clinical Manifestations:-

- Initially, that patient has a **dry, irritating cough** & expectorates scanty sputum
- Fever, headache, & generalized malaise
- As the infection progresses, **inspiration** may become noisy (inspiratory Stridor) & more profuse purulent sputum may be present.

Acute tracheo-bronchitis...

Medical Management

- Advice bed rest.
-
- Steam inhalation
 - Advice fluid intake to thin the viscous & tenacious secretions.
 - Dexamethorphan hydro-bromide 15-30mg P.O 3 to 4 times a day
 - Codeine phosphate 10 – 20 mg P.O. 3-4 times a day

Acute tracheo-bronchitis...

Antibiotic Treatment:-

- It is indicated, when bronchitis is complicated by **bacterial infections**
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First line Antibiotics

- Ampicillin 500mg P.O Qid, OR
- Amoxicillin 500gm P.O Tid, for 7 days

Alternative Antibiotic:-

- Erythromycin 500mg P.O Qid for 7 days OR
- Tetracycline 500mg Qid, for 5-7 days OR
- Co - trimoxazole 480 mg 2 tabs po bid for 7 days

Acute tracheo-bronchitis...

Nursing Interventions:-

- Encourage frequent coughing to remove secretions
- Advise the patient bed rest, steam inhalation & increase fluid intake