Management of Patients With Upper Respiratory Tract Disorders

UPPER AIRWAY INFECTIONS

• Upper airway infections (otherwise known as upper respiratory infections or URIs) are the most common cause of illness and affect most people on occasion.

• Some infections are acute, with symptoms that last several days; others are chronic, with symptoms that may last for weeks or months or recur.

• The American Academy of Family Physicians defines a URI as an infection of the mucous membranes from the nose down to the respiratory tree or bronchi.

• The common cold is the most frequently occurring example of a URI.

• URIs occur when microorganisms such as viruses and bacteria are inhaled. There are many causative organisms, and people are susceptible throughout life. Viruses, the most common cause of URIs, affect the upper respiratory passages and lead to subsequent mucous membrane inflammation.

• URIs are the most common reason for seeking health care and for absences from school and work.

• URIs affect the nasal cavity; ethmoidal air cells; and frontal, maxillary, and sphenoid sinuses; as well as the pharynx, larynx, and trachea.

• On average, adults typically develop 2 to 4 URIs per year because of the wide variety of respiratory viruses that circulate in the community.

• Although patients are rarely hospitalized for the treatment of URIs, nurses working in community settings or long-term care facilities may encounter patients who have these infections.

• It is important for nurses to recognize the signs and symptoms of URIs and provide appropriate care.

Upper Respiratory Tract Disorders in Older Adults

• Upper respiratory infections in older adults may have more serious consequences if patients have concurrent medical problems that compromise their respiratory or immune status.

• Influenza causes exacerbations of chronic obstructive pulmonary disease and reduced pulmonary function.
- Antihistamines and decongestants used to treat upper respiratory disorders must be used cautiously in older adults because of their side effects and potential interactions with other medications.
- Of Americans 65 years and older, approximately 14.1% have chronic rhinosinusitis (CRS). With anticipated future growth in the older adult population, the need for endoscopic sinus surgery will increase. Older patients with CRS present with symptoms similar to those of younger adults and experience a similar degree of improvement and quality of life after endoscopic sinus surgery.
- The structure of the nose changes with aging; it lengthens and the tip droops from loss of cartilage. This can cause restriction in airflow and predispose older adult patients to geriatric rhinitis, characterized by increased thin, watery sinus drainage. These structural changes may also adversely affect the sense of smell.
- Laryngitis in older adults is common and may be secondary to gastroesophageal reflux disease (GERD). Older adults are more likely to have impaired esophageal peristalsis and a weaker esophageal sphincter. Treatment measures include sleeping with the head of the bed elevated and the use of medications such as histamine-2 receptor blockers (e.g., famotidine [Pepcid], ranitidine [Zantac]) or proton pump inhibitors (omeprazole [Prilosec]).
- Age-related loss of muscle mass and thinning of the mucous membranes can cause structural changes in the larynx that may change characteristics of the voice. In general, the pitch of voice becomes higher in older adult men and lower in older adult women. The voice also “thins” (decreased projection) and may sound tremulous. These changes should be discriminated from signs that could indicate pathologic conditions.

**Anatomy of the upper respiratory tract**

**Specific Disorders that affect URT:**
1. Infections
   التهابات
2. Rhinitis
   التهاب الأنف
3. Sinusitis: acute, chronic
   التهاب الجيوب الأنفية
4. Pharyngitis: acute, chronic
   التهاب البلعوم
5. Tonsillitis, adenoiditis
   التهاب اللوزتين والغدد
6. Peritonsillar abscess
   خراج حول اللوزتين
7. Laryngitis
   التهاب الحنجرة
Tonsillitis and Adenoiditis

- The tonsils are composed of lymphatic tissue and are situated on each side of the oropharynx.
- The faucial or palatine tonsils and lingual tonsils are located behind the pillars of fauces and tongue, respectively. They frequently serve as the site of acute infection (tonsillitis).
  - Acute tonsillitis can be confused with pharyngitis.
  - Chronic tonsillitis is less common and may be mistaken for other disorders such as allergy, asthma, and rhinosinusitis.
- The adenoids or pharyngeal tonsils consist of lymphatic tissue near the center of the posterior wall of the nasopharynx.
- Infection of the adenoids frequently accompanies acute tonsillitis.
- Frequently occurring bacterial pathogens include GABHS, the most common organism.
- The most common viral pathogen is Epstein–Barr virus, although cytomegalovirus may also cause tonsillitis and adenoiditis. Often thought of as a childhood disorder, tonsillitis can occur in adults.

Clinical Manifestations

- The symptoms of tonsillitis include:
  - sore throat
  - fever
  - snoring
  - difficulty swallowing
- Enlarged adenoids may cause:
  - mouth breathing
  - earache
  - draining ears
  - frequent head colds
  - bronchitis
  - foul-smelling breath
  - voice impairment
  - noisy respiration
Infection can extend to the middle ears by way of the auditory (eustachian) tubes and may result in acute otitis media, which can lead to spontaneous rupture of the tympanic membranes (eardrums) and further extension of the infection into the mastoid cells, causing acute mastoiditis.

The infection also may reside in the middle ear as a chronic, low-grade, smoldering process that eventually may cause permanent deafness.

Assessment and Diagnostic Findings
- The diagnosis of acute tonsillitis is primarily clinical, with attention given to whether the illness is viral or bacterial in nature.
- As in acute pharyngitis, RADT is quick and convenient; however, it is less sensitive than the throat swab culture.
- A thorough physical examination is performed and a careful history is obtained to rule out related or systemic conditions.
- The tonsillar site is cultured to determine the presence of bacterial infection.
- When cytomegalovirus infection is present, the differential diagnosis should include HIV, hepatitis A, and rubella. In adenoiditis, if recurrent episodes of suppurative otitis media result in hearing loss, comprehensive audiometric assessment is warranted.

Medical Management
- Tonsillitis is treated with supportive measures that include:
  - increased fluid intake
  - analgesics
  - salt-water gargles
  - rest
- Bacterial infections are treated with penicillin (first-line therapy) or cephalosporins.
- Viral tonsillitis is not effectively treated with antibiotic therapy.
- Tonsillectomy (with or without adenoidectomy) continues to be a commonly performed surgical procedure and remains the treatment of choice for patients with chronic tonsillitis.
o Adults who have undergone a tonsillectomy to treat recurrent streptococcal infections experience a decrease in the number of episodes of streptococcal or other throat infections or days with throat pain.

o Tonsillectomy is indicated if the patient:
  - has had repeated episodes of tonsillitis despite antibiotic therapy;
  - hypertrophy of the tonsils and adenoids that could cause obstruction and obstructive sleep apnea (OSA);
  - repeated attacks of purulent otitis media;
  - suspected hearing loss due to serous otitis media that has occurred in association with enlarged tonsils and adenoids.

o Indications for adenoidectomy include:
  - chronic nasal airway obstruction
  - chronic rhinorrhea
  - obstruction of the eustachian tube with related ear infections
  - abnormal speech

o Surgery is also indicated if the patient has developed a peritonsillar abscess that occludes the pharynx, making swallowing difficult and endangering the patency of the airway (particularly during sleep).

o The presence of persistent tonsillar asymmetry should prompt an excisional biopsy to rule out lymphoma

o Antibiotic therapy may be initiated for patients undergoing tonsillectomy or adenoidectomy. Therapy may include oral penicillin or a cephalosporin (e.g., cefdinir [Omnicef] or moxifloxacin).

**Nursing Management**

- Providing Postoperative Care
  - Continuous nursing observation is required in the immediate postoperative and recovery periods because of the risk of hemorrhage, which may also compromise the patient’s airway
  - In the immediate postoperative period, the most comfortable position is prone, with the patient’s head turned to the side to allow drainage from the mouth and pharynx
  - The nurse must not remove the oral airway until the patient’s gag and swallowing reflexes have returned
  - The nurse applies an ice collar to the neck, and a basin and tissues are provided for the expectoration of blood and mucus.
  - Symptoms of postoperative complications include:
    - Fever
- throat pain
- ear pain
- bleeding.

- Pain can be effectively controlled with analgesic medications.
- Postoperative bleeding may be seen as bright red blood if the patient expectorates it before swallowing it.
- If the patient swallows the blood, it becomes brown because of the action of the acidic gastric juice.
- If the patient vomits large amounts of dark blood or bright-red blood at frequent intervals, or if the pulse rate and temperature rise and the patient is restless, the nurse notifies the surgeon immediately.
- The nurse should have the following items ready for the examination of the surgical site for bleeding: a light, a mirror, gauze, curved hemostats, and a waste basin.
- Occasionally, suture or ligation of a bleeding vessel is required. In such cases, the patient is taken to the operating room and given general anesthesia. After ligation, continuous nursing observation and postoperative care are required, as in the initial postoperative period. If there is no bleeding, water and ice chips may be given to the patient as soon as desired. The patient is instructed to refrain from too much talking and coughing, because these activities can produce throat pain.

- Educating Patients About Self-Care
  - Tonsillectomy and adenoidectomy are usually performed as outpatient surgery, and the patient is sent home from the recovery room once awake, oriented, and able to drink liquids and void.
  - The patient and family must understand the signs and symptoms of hemorrhage. Bleeding may occur up to 8 days after surgery.
  - The nurse instructs the patient about the use of liquid acetaminophen with or without codeine for pain control and explains that the pain will subside during the first 3 to 5 days.
  - The nurse informs the patient about the need to take the full course of any prescribed antibiotic for the first postoperative week.
  - Alkaline mouthwashes and warm saline solutions are useful in coping with the thick mucus and halitosis that may be present after surgery.
  - The nurse should explain to the patient that a sore throat, stiff neck, minor ear pain, and vomiting may occur in the first 24 hours.
o The patient should eat an adequate diet with soft foods, which are more easily swallowed than hard foods.

o The patient should avoid spicy, hot, acidic, or rough foods. Milk and milk products (ice cream and yogurt) may be restricted because they make removal of mucus more difficult for some patients.

o The nurse instructs the patient about the need to maintain good hydration.

o The patient is advised to avoid vigorous tooth brushing or gargling because these activities can cause bleeding.

o The nurse encourages the use of a cool-mist vaporizer or humidifier in the home postoperatively.

o The patient should avoid smoking and heavy lifting or exertion for 10 days.