

1.16 HEAD AND NECK DISORDERS

Introduction

Disorders of the head and neck, including infectious processes and anatomic abnormalities, are some of the most common encountered by pediatric hospitalists. Upper respiratory tract infections (URIs) are the most common reason for acute pediatric medical care. Children under age six years of age average six to eight URIs per year. Acute illness with an infectious process often exacerbates underlying anatomic abnormalities, such as laryngomalacia, tracheomalacia, subglottic stenosis, and others, but these abnormalities alone can require acute intervention and lead to hospitalization. Bacterial infections have the potential to invade other structures or compromise the airway, rapidly resulting in both immediate and long-term sequelae if not appropriately treated. Pediatric hospitalists frequently encounter patients with disorders of the head and neck and should be able to recognize their signs and symptoms and provide evidence-based and efficient care. In particular, pediatric hospitalists must be able to identify impending airway obstruction, provide immediate care, and arrange for the appropriate subsequent level of care.

Knowledge

Pediatric hospitalists should be able to:

- Compare and contrast the head and neck anatomy of children at different chronological ages, including how abnormalities of airflow in different locations may alter the clinical presentation at different ages.
- Discuss the symptoms of various anatomic abnormalities (such as laryngomalacia, tracheomalacia, subglottic stenosis, and others), including the acute infectious processes which may exacerbate their clinical presentation.
- Discuss the pathophysiology, presenting features, and common pathogens associated with bacterial infections of the head and neck (such as otitis media, otitis externa, retropharyngeal abscess, orbital cellulitis, dental infections, mastoiditis, peritonsillar abscess, and others).
- Describe the differential diagnosis of common presenting symptoms of head and neck disorders, such as shortness of breath, stridor, cough, nasal discharge, neck swelling/pain, dysphagia/drooling, facial swelling, and others.
- Describe the features of upper airway obstruction, such as stertor, stridor, tripod positioning, dysphagia, drooling, trismus, and others.
- Discuss alternate diagnoses that may mimic the presentation of acute upper respiratory infection such as allergic reaction, toxic inhalant exposure, and others.
- List the indications for hospital admission, explain the utility of various monitoring options, and review the indications for emergent and non-emergent subspecialist consultation.
- Describe the signs and symptoms of obstructive sleep apnea (OSA) including snoring, respiratory pauses, and hypoxia, and discuss appropriate evaluation, referral, and management.
- Explain the types of studies available to assess the head and

neck (including plain radiographs, fluoroscopy, ultrasonography, computed tomography, magnetic resonance imaging, and direct laryngoscopy) and discuss the risks, benefits, and indications for each.

- Discuss the indications, contraindications, and mechanisms of action of pharmacological agents used to treat various disorders of the head and neck, such as antibiotics, nebulized epinephrine, glucocorticoids, proton pump inhibitors, histamine 2 blockers, and others.
- Compare and contrast the benefits and limitations of various modalities of airway stabilization and respiratory support (including heated humidified high flow nasal cannula, non-invasive positive pressure support, and intubation with mechanical ventilation) in patients with varying degrees of upper airway obstruction.
- Discuss the changes in clinical status that indicate need for escalation of care, such as worsening stridor or work of breathing, decreased air entry, cyanosis, altered mental status, and others.
- Describe the patient characteristics that indicate the need for higher level of care and/or transfer to a referral center in cases requiring pediatric-specific services not available at the local facility.
- Describe criteria, including specific measures of clinical stability, that must be met before discharging patients with head and neck disorders, including oxygenation, hydration, and patient/family education.

Skills

Pediatric hospitalists should be able to:

- Perform an appropriately focused medical history, attending to symptoms of potential airway obstruction.
- Conduct a thorough physical examination directed by signs and symptoms that may indicate the location, etiology, or severity of the disorder.
- Identify patients with comorbidities or underlying anatomic abnormalities that impact the management plan and order appropriate testing, correctly interpreting results.
- Order appropriate monitoring and correctly interpret monitor data.
- Adhere consistently to infection control practices.
- Identify complications and respond with appropriate actions.
- Perform an evidence-based, cost-effective diagnostic evaluation and treatment plan, avoiding unnecessary testing.
- Perform careful reassessments daily and as needed, note changes in clinical status, and respond with appropriate actions and escalation of care as appropriate.
- Stabilize the airway and provide appropriate respiratory support for patients with impending or actual airway obstruction or respiratory failure, including head tilt/chin lift, nasal trumpet, and intubation, or arrange for the appropriate personnel to perform the procedure in an effective and efficient manner.
- Engage consultants (such as otolaryngologists, pulmonologists, surgeons, speech and feeding specialists, dentists, and others) efficiently and effectively when needed.

Attitudes

Pediatric hospitalists should be able to:

- Role model and advocate for strict adherence to infection control practices.
- Realize responsibility for effective communication with patients and the family/caregivers regarding the diagnosis, management plan, and follow-up needs.
- Recognize the value of collaboration with the primary care provider, subspecialists, nursing, the hospital staff, and other outpatient providers to ensure coordinated longitudinal care at the time of discharge.

Systems Organization and Improvement

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Lead, coordinate, or participate in the development, implementation, and improvement of cost-effective, safe, evidence-based care within a multidisciplinary team for hospitalized children with head and neck disorders.
- Collaborate with hospital administration and community partners to develop and sustain referral networks between local facilities and tertiary referral centers for hospitalized patients with head and neck disorders.

References

1. Geddes G, Butterly MM, Patel SM, Marra S. Pediatric neck masses. *Pediatr Rev.* 2013 Mar;34(3):115-124; quiz 125. <https://doi.org/10.1542/pir.34-3-115>.
2. Virbalas J, Smith L. Upper airway obstruction. *Pediatr Rev.* 2015;36(2):62-72. <https://doi.org/10.1542/pir.36-2-62>.
3. Murray AD. Deep Neck Infections. Medscape. <https://emedicine.medscape.com/article/837048-overview>. Updated Apr 12, 2018. Accessed August 28, 2019.