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# Epiglottitis- An Updated Review For Healthcare Professionals

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**Abstract:**

**Background:** Epiglottitis and supraglottitis are acute inflammatory conditions of the upper airway that can rapidly progress to life-threatening airway obstruction. Although once predominantly a pediatric disease caused by Haemophilus influenzae type b (Hib), widespread vaccination has shifted the epidemiology toward adult populations, with distinct clinical presentations and management challenges.

**Aim:** This review aims to provide an updated, comprehensive overview of epiglottitis for healthcare professionals, emphasizing epidemiology, etiology, pathophysiology, clinical presentation, evaluation, and contemporary management strategies across pediatric and adult populations.

**Methods:** A narrative review of the clinical and scientific literature was conducted, integrating historical perspectives with current evidence on microbial causes, risk factors, diagnostic approaches, and airway management principles. Differences between pediatric and adult disease trajectories were highlighted, with particular attention to emergency decision-making and multidisciplinary care.

**Results:** The incidence of pediatric epiglottitis has markedly declined following Hib vaccination, whereas adult cases now predominate. Bacterial infection remains the most common etiology, although noninfectious and atypical causes are increasingly recognized. Clinical presentation varies by age, with children often displaying abrupt respiratory distress and adults presenting more insidiously. Airway protection is the cornerstone of management, supplemented by broad-spectrum intravenous antibiotics and, in select cases, corticosteroids.

**Conclusion:** Despite advances in vaccination and airway management, epiglottitis remains a medical emergency with significant morbidity and mortality risk. Early recognition, appropriate airway protection, and coordinated interprofessional management are essential to optimize outcomes.

**Keywords:** Epiglottitis; Supraglottitis; Airway obstruction; Hib vaccine; Emergency airway management.

## Introduction:

The terms epiglottitis, epiglottiditis, and supraglottitis are frequently used in clinical literature to describe acute and potentially severe inflammatory processes involving the supraglottic structures of the upper airway. Anatomically, the supraglottis comprises the region situated above the glottis and extends superiorly toward the oral cavity. Historical recognition of this condition dates back more than two millennia, when Hippocrates provided one of the earliest clinical descriptions, characterizing affected patients as experiencing fever, chills, craniofacial pain, swelling beneath the jaw, profound dysphagia, inability to expectorate secretions, intolerance to the supine position, and episodes of choking when lying down. This classical depiction underscores the long-standing awareness of the condition's acute presentation and its association with airway compromise. The development of the laryngoscope in the mid-nineteenth century marked a pivotal advancement in the clinical evaluation of upper airway disorders, as it enabled direct visualization of the epiglottis using reflected light and a small mirror [1]. From an anatomical perspective, the oropharynx terminates at the level of the epiglottis. The term epiglottitis refers specifically to inflammation and edema localized to the epiglottis itself and has traditionally been used to describe disease presentations in the pediatric population [2]. In contrast, the term supraglottitis is more precise when applied to adults, as inflammatory changes in this group commonly extend beyond the epiglottis to involve adjacent structures, including the hypopharynx, arytenoid cartilages, aryepiglottic folds, valleculae, base of the tongue, and, in some cases, the soft palate and uvula [3]. This broader pattern of involvement reflects differences in disease behavior and anatomical susceptibility between children and adults [1][2][3].

Both epiglottitis and supraglottitis represent medical emergencies due to their capacity to cause rapid and life-threatening upper airway obstruction. Progressive swelling of supraglottic tissues can precipitate acute asphyxia and respiratory arrest if not promptly recognized and managed [4]. Prior to the widespread implementation of the Haemophilus influenzae type b vaccine in 1985, H influenzae was responsible for the majority of epiglottitis cases in children. The introduction of routine immunization has led to a marked decline in pediatric disease incidence and a corresponding epidemiological shift, with supraglottitis now occurring more frequently in adults. Current data indicate an annual adult incidence of approximately 3 cases per 100,000 individuals, with an associated mortality rate of around 1% [5]. Advances in pathogen identification and earlier clinical recognition have contributed to reduced complication rates in the relatively rare cases of pediatric epiglottitis that still occur [4]. Nevertheless, airway protection remains the cornerstone of management, particularly in children, whose anxiety, agitation, and distress can exacerbate airway obstruction. Consequently, airway management strategies differ significantly between pediatric and adult populations. In children, manipulation of the airway during oral examination or endoscopy in outpatient or emergency settings is strongly discouraged, and unstable patients should not be transported for radiologic imaging due to the risk of sudden airway collapse. In adults, evaluation of the airway using flexible fiberoptic endoscopy and selective imaging is often feasible; however, clinical presentation may be subtle or misleading, even for experienced clinicians, necessitating a high index of suspicion [6][7].

Although many otolaryngologists advocate conservative management for adults with supraglottitis, the condition can follow a fulminant course in certain cases. Rapid progression, particularly in the presence of epiglottic abscess formation, may culminate in catastrophic airway obstruction and death if intervention is delayed [8]. At present, there is no universal consensus regarding the optimal management strategy for adult patients, and approaches to airway control vary widely depending on clinician expertise, institutional experience, and available resources [9]. Since the advent of the Hib vaccination program, the proportion of adults with epiglottitis requiring airway intervention has declined significantly, from 18.8 percent to 10.9 percent, reflecting both changing disease patterns and improvements in clinical management [10].

## Etiology

The etiology of epiglottitis is predominantly infectious, although a broad range of noninfectious causes has been documented. Noninfectious epiglottitis is less common but clinically significant and may arise from

direct trauma, chemical injury, or systemic disease processes. Traumatic causes include thermal injury from hot liquids or inhaled substances, blind finger sweeps performed during attempts to remove a pharyngeal foreign body, and mechanical irritation. Immunologic and hematologic conditions, such as angioneurotic edema, acute leukemia, and hemophagocytic lymphohistiocytosis, have also been associated with epiglottic inflammation and swelling [11]. Additional noninfectious etiologies include exposure to inhaled substances such as crack cocaine or marijuana, caustic injuries resulting from ingestion of alkaline or acidic agents including automatic dishwasher detergents, and direct trauma from foreign body ingestion [12][13][14][15]. In infants, particularly those who are bottle-fed, accidental thermal burns involving the epiglottis have been reported. Epiglottic edema may also occur in the context of lymphoproliferative disorders due to tissue infiltration and inflammatory responses.

Although viruses are not considered direct causative agents of epiglottitis, preceding viral infections may compromise mucosal integrity and facilitate secondary bacterial infection. Viral illnesses such as varicella-zoster virus, herpes simplex virus, and Epstein–Barr virus have been implicated as predisposing factors that allow bacterial superinfection to develop. This interaction underscores the multifactorial nature of the disease process, particularly in patients with transient or chronic immune vulnerability. Bacterial pathogens remain the most common and clinically significant cause of epiglottitis. Historically, more than 90 percent of pediatric cases were attributed to Haemophilus influenzae type b prior to the widespread implementation of routine immunization. Despite vaccination efforts, non–type b strains of H influenzae continue to cause epiglottitis in immunized children, reflecting evolving pathogen profiles [16]. Other bacterial organisms implicated in pediatric epiglottitis include Streptococcus pneumoniae, group A and group C β-hemolytic streptococci, Staphylococcus aureus, Moraxella catarrhalis, Haemophilus parainfluenzae, Neisseria meningitidis, Pseudomonas species, Klebsiella pneumoniae, and Pasteurella multocida. Candida albicans has been identified as a causative agent, particularly in immunocompromised children, while human immunodeficiency virus has been rarely implicated in infant cases [17]. In adults, the microbial spectrum differs and reflects both immunologic maturity and comorbid disease burden. Haemophilus influenzae remains a significant pathogen, accounting for approximately one quarter of adult cases, followed by H parainfluenzae, Streptococcus pneumoniae, and group A streptococci. Less frequently encountered bacterial causes include mycobacteria, Bacteroides melaninogenicus, Enterobacter cloacae, Escherichia coli, Fusobacterium necrophorum, Klebsiella pneumoniae, Neisseria meningitidis, and Pasteurella multocida. Viral etiologies are uncommon but may include herpes simplex virus and Epstein–Barr virus. In immunocompromised adults, fungal organisms such as Candida and Aspergillus have been reported, while community-acquired methicillin-resistant Staphylococcus aureus represents a rare but recognized cause [18].

Several risk factors increase susceptibility to adult supraglottitis and influence disease severity. These include middle age, with a mean presentation around 45 years, increased body mass index exceeding 25 kg/m², diabetes mellitus, and male sex, with a reported male-to-female ratio of approximately 3 to 1. Epidemiological data also demonstrate higher incidence among Black and Hispanic populations. Structural abnormalities such as epiglottic cysts, concurrent pneumonia, and autoimmune conditions including Sjögren syndrome further elevate risk [19][20]. Collectively, these etiological factors highlight the complex interplay between infectious agents, host susceptibility, and environmental exposures in the development of epiglottitis and supraglottitis.

## Epidemiology

Epiglottitis was historically regarded as a disease that predominantly affected young children; however, its epidemiological profile has shifted markedly over recent decades, with increasing recognition among adult populations. In the United States, the annual incidence is estimated at approximately 1 case per 100,000 individuals, with adult rates remaining relatively stable over time. The widespread introduction of the Haemophilus influenzae type b (Hib) vaccine in 1985 resulted in a dramatic decline in pediatric epiglottitis, particularly among children aged 2 to 4 years, in whom the condition has become uncommon [21]. This

immunization strategy significantly altered disease distribution. The ratio of childhood to adult cases declined from 2.6:1 in 1980 to 0.4:1 by 1993, reflecting both reduced pediatric incidence and the relative persistence of adult disease. Despite high vaccination coverage, sporadic vaccine failures have been reported, and epiglottitis remains a clinical consideration in immunized children. In regions where Hib vaccination is not universally implemented, incidence rates continue to vary widely, underscoring the importance of public health infrastructure. Notably, epidemiological data from the United Kingdom demonstrate a rise in epiglottitis diagnoses despite established immunization programs, a trend that may be associated with increased recognition of severe upper airway infections such as bacterial tracheitis [22][23]. Following vaccine implementation, the mean age of affected pediatric patients shifted upward, with most cases now occurring in children between 6 and 12 years of age [24]. These trends highlight the evolving epidemiology of epiglottitis and the need for continued vigilance across age groups.

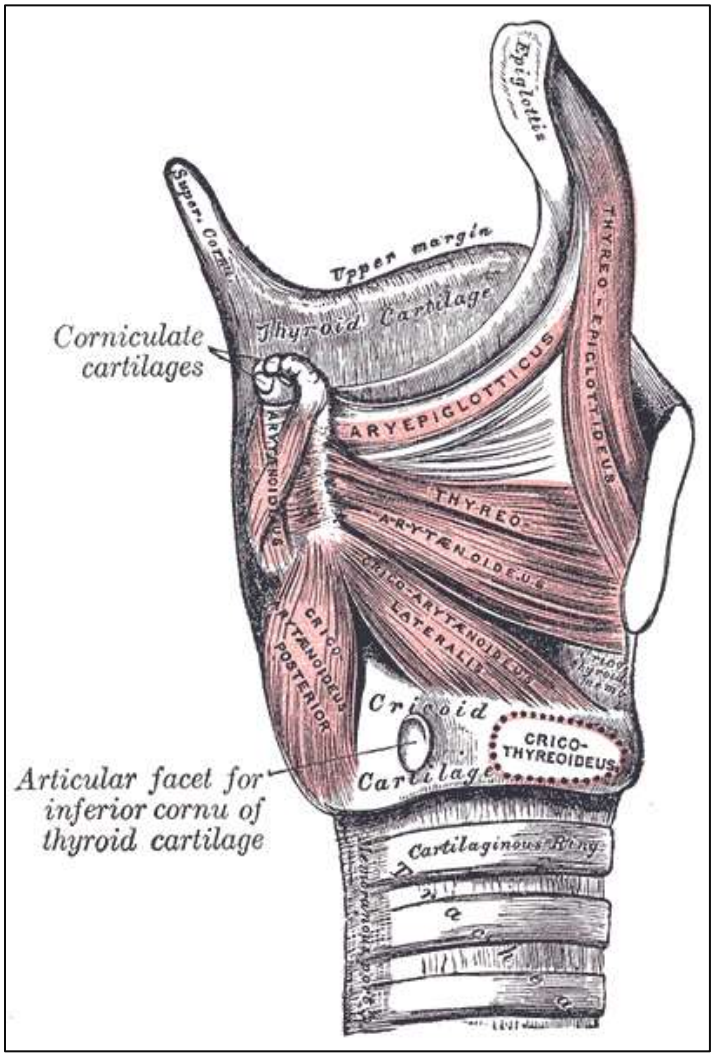


**Fig. 1:** The Muscles of the Larynx.

**Pathophysiology**

The pathophysiology of epiglottitis and supraglottitis is dominated by rapid inflammatory changes that compromise airway patency and gas exchange. Airway obstruction and subsequent respiratory arrest may occur as a result of marked inflammatory edema, accumulation and pooling of oropharyngeal secretions, aspiration, and distal mucus plugging. Once bacterial pathogens breach the mucosal barrier, bacteremia

may develop, facilitating hematogenous dissemination to adjacent and distant tissues. In adults, this spread most commonly involves the supraglottic structures, while secondary infections may arise in the meninges, lungs, skin, and middle ear. The lingual surface of the epiglottis is loosely attached, a structural feature that permits rapid expansion when inflamed, leading to critical airway narrowing. This process is particularly dangerous in pediatric patients due to the smaller diameter of the laryngeal airway. Distinct anatomical and developmental differences between pediatric and adult airways strongly influence disease expression and severity. In children, the epiglottis is positioned higher and more anteriorly, with an oblique orientation relative to the trachea. The narrowest portion of the pediatric airway lies in the subglottic region, in contrast to adults, in whom the glottis represents the most constricted segment. Furthermore, the epiglottic cartilage in infants and young children is softer and more pliable because of incomplete maturation. This increased flexibility explains the susceptibility to dynamic airway collapse, as seen in conditions such as laryngomalacia. During infection, edema and increased epiglottic mass can produce a ball-valve mechanism in which inspiratory airflow draws the swollen epiglottis posteriorly over the airway, intensifying obstruction with each breath. In adults, the epiglottic cartilage is stiffer and less prone to dynamic collapse, reducing the likelihood of this ball-valve effect. However, inflammation may spread more diffusely throughout the supraglottis, resulting in progressive airway compromise. The tightly adherent epithelium of the true vocal cords typically limits extension of edema into the glottic region, but extensive supraglottic swelling can still destabilize the airway. Pathogens such as Haemophilus influenzae can provoke profound inflammatory responses, producing rapid edema of the epiglottis and surrounding structures across all age groups. In immunocompromised individuals, atypical organisms, including Mycobacterium tuberculosis, must also be considered, although the overall pathogenic distribution remains relatively consistent [22][23][24].


**Fig.2:** Epiglottis, Lateral X-Ray.

**History and Physical**

Epiglottitis constitutes a true medical emergency, and any patient in whom this diagnosis is suspected requires immediate and focused clinical attention. The foremost concern during initial assessment is the risk of acute airway compromise, which may evolve rapidly and unpredictably. Although the incidence of pediatric epiglottitis has markedly declined since the widespread implementation of the Hib vaccine approximately four decades ago, the condition has not been eliminated and remains potentially fatal across all age groups. Adult patients, in particular, may initially present with seemingly benign or nonspecific symptoms, which can obscure the diagnosis and delay appropriate intervention. Despite early initiation of antibiotic therapy for symptoms such as sore throat, dysphagia, or fever, abrupt clinical deterioration can still occur, underscoring the deceptive nature of the disease and the need for continued vigilance [25]. It has been suggested that a proportion of unexplained sudden deaths in adults may be attributable to unrecognized or inadequately treated epiglottitis. Historical accounts have even speculated that George Washington's death may have resulted from an untreated peritonsillar infection progressing to supraglottitis and critical airway obstruction [26]. In pediatric patients, the clinical presentation is often dramatic and may evolve without a clear prodromal phase. Some children develop a sudden high-grade fever accompanied by signs of respiratory distress. Common presenting features include stridor, labored breathing, dysphagia, refusal to eat or drink, hoarseness, sore throat, and marked anxiety. The classic triad associated with pediatric epiglottitis consists of drooling, dysphagia, and distress manifested by air hunger and overt panic. Physical signs may include suprasternal, intercostal, or subcostal retractions, tachypnea, cervical lymphadenopathy, and audible stridor. Many children instinctively assume the tripod position to optimize airflow, and the presence of cyanosis is a grave indicator associated with poor prognosis. In older pediatric patients, localized pain or tenderness elicited by palpation of the hyoid bone may provide an additional clinical clue [27].

Physical examination in suspected pediatric epiglottitis must be approached with extreme caution. Any maneuver that may provoke agitation, force the child into a supine position, or mechanically stimulate the oropharynx can precipitate sudden airway collapse. Placement of intravenous lines, routine monitoring, and diagnostic imaging should be deferred until the airway is secured. The diagnosis is primarily clinical, and definitive evaluation should not supersede airway protection. Medical, nursing, and respiratory therapy trainees must be explicitly instructed never to attempt visualization of the pharynx with a tongue blade in a child with suspected epiglottitis, as this may trigger complete obstruction. In adults, epiglottitis often presents with a more insidious onset but carries comparable risk. Predisposing factors include diabetes mellitus, chronic alcohol use, hyposplenia, autoimmune disease, immunosuppression, and impaired host defenses against encapsulated organisms [20]. Rarely, arytenoid edema associated with SARS-CoV-2 infection has been reported [28]. Adult patients frequently describe antecedent upper respiratory symptoms such as sore throat, odynophagia, or dysphagia, followed by worsening pain and difficulty swallowing. A muffled "hot-potato" voice, inability to lie flat, and progressive dyspnea are common complaints. Fever may be present despite minimal oropharyngeal findings. Some adults adopt the tripod posture, protrude the tongue, and lean forward to alleviate airway obstruction, while others report significant tenderness over the larynx or hyoid bone on gentle palpation [27]. Systemic manifestations such as tachycardia, irritability, mild cough, and a toxic appearance may also be observed. As in children, adults demonstrating signs of airway compromise, including stridor or respiratory distress, require immediate airway intervention, whereas clinically stable patients warrant close observation with cautious, controlled evaluation.

## Evaluation

The evaluation of suspected epiglottitis must prioritize airway safety above all diagnostic considerations, particularly in pediatric patients. In children, epiglottitis remains a clinical diagnosis, and no routine physical examination, laryngoscopy, laboratory investigation, or radiologic study is recommended prior to securing the airway. Any intervention that may agitate the child or alter airway dynamics carries a significant risk of precipitating sudden obstruction. Consequently, airway stabilization takes precedence over diagnostic confirmation. The traditional lateral neck radiograph, although historically associated with the identification of the enlarged epiglottis or so-called "thumb sign," should never be obtained unless

definitive airway control is already in place. Children should not be separated from continuous supervision for imaging, as even brief periods without monitoring may result in catastrophic deterioration. While lateral neck radiography can assist in narrowing the differential diagnosis in select cases, it is not required for confirmation and is unreliable, failing to detect epiglottitis in approximately 20% of cases. This limitation reinforces the principle that imaging must never delay airway intervention. Computed tomography of the neck has been described in rare or atypical pediatric presentations, particularly when the diagnosis is uncertain or alternative pathology is suspected. However, CT scanning must be approached with extreme caution due to the need for supine positioning, potential agitation, and delays in securing the airway [29]. Such imaging should only be considered in highly controlled settings with immediate access to airway management. Once the pediatric airway has been secured, further evaluation becomes safer and more informative. Blood cultures and epiglottic cultures may then be obtained, often at the time of endotracheal intubation. Reported culture positivity rates range from 50% to 75%, providing valuable microbiological data to guide antimicrobial therapy [30]. Postintubation chest radiography is recommended to assess tube placement and exclude complications such as pulmonary edema or pneumonia, the latter occurring in approximately 15% of cases. In exceptional circumstances where endotracheal intubation is not immediately feasible, percutaneous transtracheal ventilation has been described as a temporary measure before definitive surgical airway placement [31]. Ultrasonography has also emerged as an adjunctive tool, with identification of the “alphabet P sign” on longitudinal views, though its application remains limited and is more commonly described in adults [32]. Laboratory investigations, including complete blood count, blood cultures, and epiglottic cultures, should only be pursued once the airway is secured [33].

In adults, the evaluation of epiglottitis may follow a more nuanced pathway, particularly when immediate airway compromise is not evident. Careful observation in a monitored setting is essential, with early involvement of otolaryngology and anesthesia services. Flexible fiberoptic nasopharyngoscopy or laryngoscopy is often preferred, as it allows direct visualization of supraglottic structures while maintaining patient cooperation and minimizing risk. This approach has largely replaced reliance on lateral neck radiography in many centers. When performed, a lateral neck soft-tissue radiograph demonstrating an epiglottic thickness of 7 mm or greater, compared with the normal range of 3 to 5 mm, has been shown to provide high diagnostic accuracy for acute adult epiglottitis [34]. Chest radiography remains useful for excluding concomitant pneumonia, although neck CT is frequently favored in stable adults to delineate the extent of supraglottic inflammation and identify abscess formation. Emerging modalities such as transcutaneous sublingual ultrasonography may play an expanding role in future diagnostic algorithms [35]. Blood cultures yield positive results in approximately one-quarter of cases caused by H influenzae, and epiglottic cultures obtained after airway protection can further refine antimicrobial management. In selected cases, aspiration of epiglottic abscesses using a spinal needle has been advocated as both a diagnostic and therapeutic intervention [36].

**Treatment / Management**

Epiglottitis constitutes a true medical emergency in which therapeutic priorities are clearly defined and time sensitive. The cornerstone of management rests on two fundamental objectives: prompt stabilization of the airway and eradication of the underlying infectious process. Airway protection must precede the initiation of antimicrobial therapy, as clinical deterioration can occur abruptly and without warning. Once airway stability is reasonably assured, broad-spectrum intravenous antibiotics, most commonly ceftriaxone or an equivalent third-generation cephalosporin, should be administered to target likely bacterial pathogens. Throughout the early phase of care, patients must be handled gently, as unnecessary sedation, aerosolized therapies, racemic epinephrine, or excessive stimulation may precipitate airway collapse. Supplemental oxygen should be delivered in a noninvasive, nonthreatening manner, avoiding forceful application that may increase patient agitation. Failures in management frequently stem from underestimating disease severity, inadequate monitoring, premature airway manipulation without appropriate expertise or specialist support, and unnecessary physical examinations or procedures that destabilize the airway. In pediatric patients, management presents unique challenges, particularly in differentiating epiglottitis from viral

laryngotracheobronchitis. Croup, commonly caused by parainfluenzavirus types 1 and 3, can produce upper airway obstruction that mimics epiglottitis, yet the clinical trajectory and management differ substantially [37]. Pediatric epiglottitis, historically affecting children between 2 and 7 years of age, now occurs infrequently due to widespread vaccination but may still arise in unvaccinated children or in cases of vaccine failure. Clinical features favoring epiglottitis include acute onset of systemic malaise or anxiety, high fever, stridor, dyspnea, hoarseness, odynophagia, dysphagia, drooling, and cervical lymphadenopathy. Once suspected, supplemental blow-by oxygen should be administered while preparations are made for definitive airway management. Controlled endotracheal intubation in the operating room, with anesthesia and otolaryngology support, remains the preferred approach. In cases where intubation is unsuccessful or impossible, emergency surgical airway access through needle cricothyroidotomy or tracheostomy may be required. Following airway control, empiric antimicrobial therapy with agents such as cefuroxime, ceftriaxone, or cefotaxime should be initiated to cover common respiratory and oral flora. With heightened awareness and structured airway protocols, pediatric mortality following airway intervention has declined to below 1%, although diagnostic delays and transport-related issues continue to contribute to adverse outcomes.

After airway stabilization, pediatric patients require admission to the intensive care unit for close monitoring. Microbiological cultures should be obtained after intubation, and adjunctive corticosteroid therapy may be considered to reduce supraglottic edema and potentially shorten intensive care duration. Antibiotic therapy should subsequently be refined based on culture and sensitivity data. Extubation is typically considered once airway swelling subsides and a cuff leak is demonstrated around the deflated endotracheal tube [38]39. Patients who are not intubated must still be managed in an intensive care setting with immediate availability of airway equipment, including a tracheostomy tray. Nursing care focuses on maintaining the child in an upright position, minimizing handling, and avoiding unnecessary interventions that could provoke agitation or airway compromise. Management strategies in adults differ substantially, reflecting anatomical, physiological, and clinical distinctions. Adult epiglottitis often involves diffuse inflammation of the supraglottic structures rather than isolated epiglottic swelling [2]. Advances in monitoring, imaging, and fiberoptic laryngoscopy have reduced the routine need for emergent airway intervention in stable adults. Unlike children, many adults can tolerate cautious examination, imaging, and conservative observation without immediate airway collapse. Awake fiberoptic intubation may be effective in selected cases when performed by experienced anesthesiology and otolaryngology teams in cooperative patients; however, it is contraindicated in rapidly deteriorating or severely obstructed airways, where immediate surgical access may be the only viable option [40][41].

Otolaryngologic assessment is central to adult management, enabling risk stratification and early identification of patients likely to deteriorate. In adults with mild to moderate supraglottic edema and without high-risk features such as diabetes or epiglottic abscess, many specialists advocate intensive care observation combined with intravenous antibiotics and corticosteroids. The role of inhalational induction remains uncertain in adults, and contingency planning for front-of-neck airway access is essential [42]. Despite modern advances, adult epiglottitis carries a significantly higher mortality rate, reported between 7% and 10% [43]. The use of neuromuscular blocking agents remains controversial, as loss of airway tone may precipitate complete obstruction [44][45]. Failures in adult airway management are commonly attributed to severe edema and distorted anatomy, excessive secretions, disease progression, aggressive manipulation, equipment or training limitations, and inadequate preparation for emergency surgical airway access [46]. No universal consensus exists regarding the optimal management of adult epiglottitis, reflecting heterogeneity in presentation, institutional resources, and clinician expertise. Although pediatric cases may appear more algorithmic, effective management across all age groups depends on early recognition, accurate risk assessment, anticipation of rapid deterioration, and meticulous preparation for definitive airway control. In the absence of a standardized airway management protocol, timely, skilled, and coordinated intervention remains the decisive factor in preventing fatal outcomes in this life-threatening condition [47].

## Differential Diagnosis

Acute epiglottitis, though less common in children due to widespread Hib vaccination, remains a critical diagnosis across all ages. Haemophilus influenzae continues to be the most frequent causative organism, but clinicians may have reduced exposure to the disease, increasing the risk of delayed recognition and treatment. Prompt suspicion is vital, as even minor delays in management can precipitate sudden airway obstruction, which may be fatal if the patient is moved or handled without appropriate monitoring and resuscitative support. Several other conditions can mimic epiglottitis, complicating the diagnostic process. Acute angioedema, for example, may present with rapid swelling of the upper airway, while bacterial laryngotracheobronchitis (croup) produces stridor and respiratory distress, particularly in children. Thermal or caustic injuries, whether from liquids, hot air, or chemical ingestion, may cause airway edema indistinguishable from infectious epiglottitis on initial assessment. Foreign body aspiration can similarly result in partial obstruction, drooling, and respiratory distress. Less common etiologies include laryngeal diphtheria, peritonsillar or retropharyngeal abscesses, and laryngotracheobronchopneumonitis, while systemic sepsis may occasionally mimic airway compromise through generalized edema. Accurate differentiation relies on careful history taking, rapid clinical assessment, and avoidance of interventions that may exacerbate obstruction [47].

## Prognosis

When recognized and treated promptly, epiglottitis carries an excellent prognosis, with most patients experiencing rapid resolution of symptoms and minimal residual sequelae. Airway control, when required, is typically successful, and post-intervention recovery is often swift. In cases complicated by epiglottic abscesses, targeted aspiration may provide additional therapeutic benefit. Secondary prophylaxis is recommended for close contacts of patients with confirmed H influenzae type b infection. Rifampin, administered at 20 mg/kg daily (maximum 600 mg) for four days, reduces transmission risk and prevents secondary cases. Adult recurrence is uncommon but may warrant further immunologic evaluation if repeated episodes occur. In patients with recurrent peritonsillar or retropharyngeal infections, consideration of underlying predisposing factors is essential, and tonsillectomy may be indicated to prevent recurrent supraglottitis. Early recognition, proper antibiotic therapy, and appropriate airway management remain critical determinants of favorable outcomes across all patient populations [48].

## Complications

Despite modern treatment, epiglottitis can result in serious complications if not managed expeditiously. Cervical lymphadenitis and cellulitis may occur from local bacterial invasion, while deeper infection can progress to epiglottic abscess formation. Systemic spread may lead to meningitis, pneumonia, pulmonary edema, pneumothorax, and septic shock. Respiratory complications remain the most critical, including hypoxemia, respiratory arrest, and cardiac arrest in severe cases. Rare sequelae include septic arthritis, vocal cord granulomas, and Ludwig-type submental infections. Prompt airway control, antimicrobial therapy, and intensive monitoring significantly reduce the likelihood of these complications, emphasizing the importance of early and coordinated intervention [47][48].

## Postoperative and Rehabilitation Care

Recovery from epiglottitis generally occurs within 48 to 72 hours following airway stabilization and initiation of antibiotic therapy. However, a full seven-day antibiotic course is recommended to ensure eradication of the pathogen. Patients should only be discharged once afebrile and clinically stable, with close follow-up arranged to monitor for potential recurrence or complications. Rehabilitation includes airway hygiene, gradual reintroduction of oral intake, and education on avoiding exposure to pathogens in high-risk individuals [48].

## Consultations

Management of epiglottitis requires input from multiple specialists. An anesthesiologist and otolaryngologist are essential for airway evaluation and potential intervention, while intensivists oversee monitoring in critical care settings. Infectious disease specialists guide antibiotic therapy, and pulmonologists may assist in assessing respiratory status and managing complications. Early multidisciplinary involvement improves outcomes and ensures coordinated care [46][47][48].

**Patient Education**

Preventive measures are critical for high-risk populations. Close contacts of patients with H influenzae should receive rifampin prophylaxis if unvaccinated, and vaccination against Hib should be encouraged for all eligible children, although breakthrough cases can still occur. Adults with recurrent epiglottitis require evaluation for immunodeficiency or structural anomalies. Patient and caregiver education on early symptom recognition, avoidance of irritants, and adherence to vaccination schedules is essential to reduce incidence and severity [46][47].

**Other Issues**

Epiglottitis is an acute otolaryngologic emergency with a high potential for rapid deterioration. Pediatric and adult cases differ in presentation, risk factors, and management strategies. Adult risk factors include male sex, obesity, diabetes, epiglottic cysts, and autoimmune diseases. Avoiding common management errors—such as premature airway manipulation, inadequate monitoring, unnecessary physical examinations, or lack of preparation for emergent tracheostomy—is essential. Early, coordinated intervention by a skilled interprofessional team remains the cornerstone of safe and effective care [48].

**Enhancing Healthcare Team Outcomes**

Successful management of epiglottitis relies on a coordinated interprofessional approach. Early recognition by emergency clinicians and triage nurses ensures rapid intervention. Effective communication among anesthesiologists, otolaryngologists, intensivists, pulmonologists, and infectious disease specialists supports timely decision-making regarding airway management and antimicrobial therapy. Nursing staff play a pivotal role in patient positioning, minimizing agitation, and continuous monitoring of oxygenation and respiratory status. Pharmacists contribute by ensuring timely antibiotic administration and managing drug interactions. Coordination across emergency, intensive care, and specialist teams enhances patient safety, reduces errors, and improves clinical outcomes by aligning all efforts toward airway protection and infection control [45][46][47][48].

**Conclusion:**

Epiglottitis continues to represent a critical otolaryngologic emergency despite significant advances in preventive strategies, particularly Hib vaccination. The disease has evolved from a primarily pediatric condition to one that more commonly affects adults, often presenting with subtle or nonspecific symptoms that can delay diagnosis. This epidemiological shift underscores the need for sustained clinical vigilance across all age groups. As highlighted in this review, rapid inflammation and edema of the supraglottic structures can lead to sudden airway compromise, making early recognition and airway protection the most decisive determinants of patient survival.

Management strategies must be individualized, taking into account patient age, clinical stability, comorbidities, and available institutional expertise. While pediatric cases often require controlled endotracheal intubation, many adults may initially be managed conservatively under close monitoring, provided there are no indicators of impending obstruction. Nonetheless, unpredictable deterioration remains a hallmark of epiglottitis, reinforcing the importance of preparedness for emergent airway intervention. Multidisciplinary collaboration among emergency physicians, anesthesiologists, otolaryngologists, intensivists, and nursing staff is essential to ensure optimal outcomes.

Ultimately, epiglottitis exemplifies a condition where timely intervention, careful handling, and adherence to airway-first principles can be lifesaving. Ongoing education, awareness of evolving risk factors, and adherence to evidence-based management protocols remain central to reducing morbidity and mortality associated with this potentially fatal disease.

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