EURASIAN JOURNAL OF EMERGENCY MEDICINE
Case Report
DOI: 10.4274/eajem.galenos.2023.59455
Eurasian J Emerg Med. 2023;22(4): 251-4

Epiglottitis with a Complication of Epiglottic Abscess: A Case Report and Review of the Literature

Ibraheem Alzaabi, Asma Alhammadi, Aya Doudin, Hayat Ali, Mondy Hammad

Sheikh Shakhbout Medical City, Department of Emergency Medicine, Abu Dhabi, United Arab Emirates

Abstract

Epiglottitis is a life-threatening condition that can result in a 10% mortality rate in adults. This case report presents the case of a 34-year-old man with epiglottitis complicated by an epiglottic abscess (EA). The patient was successfully treated with incision and drainage under general anesthesia. EA is a rare complication of epiglottitis, and prompt diagnosis and management are crucial for preventing airway compromise and respiratory failure. This report reviews the literature on epiglottitis and EAs, including their presentation, diagnosis, and management.

Keywords: Epiglottitis, epiglottic abscess, airway obstruction, respiratory failure

Introduction

Epiglottitis is a potentially life-threatening condition characterized by inflammation of the epiglottis, which can lead to a mortality rate of 10% in adults (1). This condition can progress to airway obstruction and respiratory failure (1). Patients with epiglottitis typically present with sudden onset of severe sore throat, dysphagia, stridor, retractions, and cyanosis (2). Prompt diagnosis and management are essential for preventing airway compromise and respiratory failure (2). We report a case of a 34-year-old man with a complaint of dysphagia and severe pharyngodynia who, after close examination and workup, was found to have epiglottitis with an epiglottic abscess (EA). We discuss the diagnostic approach to such cases and prompt management of critical condition to avoid possible complications.

Case Report

A 34-year-old previously healthy male presented to the emergency department with a 2-day history of dysphagia and severe pharyngodynia. Prior to his presentation, the patient had received antibiotics and antipyretics at a private healthcare facility; however, no significant improvement in his symptoms was observed. The patient experienced difficulty tolerating oral intake and reported hoarseness and a "hot potato" voice. He had no known drug allergies and a non-significant medical history. The patient denied any history of alcohol or tobacco use. Upon reviewing his body systems, he reported fever and chills but denied visual disturbances, headaches, vomiting, or nausea, and had no other complaints.

Upon examination, the patient appeared unwell and dehydrated. Anterior neck examination revealed tenderness, particularly on the right side. Throat examination using a tongue depressor revealed no significant inflammation or erythema. The patient could move his neck without signs of meningism. Ear, nose, and throat examinations were unremarkable. The differential diagnosis included retropharyngeal abscess, pharyngitis, and epiglottitis.

Laboratory testing revealed a white blood cell count of 22.07×10^9/L, a neutrophil count of 18.45×10^9/L, and an elevated C-reactive protein level of 174 mg/L. Urea and electrolyte levels were within normal limits. A lateral soft tissue neck X-ray (Figure 1) displayed a thumbprint sign, indicative of swollen epiglottis. The case was discussed with the on-call ear, nose, and throat physician, who advised obtaining a computed tomography (CT) scan with contrast to rule out an abscess. The neck CT scan with contrast (Figure 2) revealed diffusely swollen epiglottis with peripheral enhancing hypodensity measuring 3 cm 2.8 cm, consistent with an EA.

Corresponding Author: Ibraheem Alzaabi MD, Sheikh Shakhbout Medical City, Department of Emergency Medicine, Abu Dhabi, United Arab Emirates
Phone: +00971509755440 **E-mail:** drialzaabi@hotmail.com **ORCID ID:** orcid.org/0000-0001-6230-1595

Cite this article as: Alzaabi I, Alhammadi A, Doudin A, Ali H, Hammad M. Epiglottitis with a Complication of Epiglottic Abscess: A Case Report and Review of the Literature. Eurasian J Emerg Med. 2023;22(4): 251-4.

Received: 05.05.2023
Accepted: 03.08.2023

The patient was taken to the operating theater as a level 1 patient, where he was intubated by an anesthetist using fiberoptic intubation. Incision and drainage of the EA were performed under direct laryngoscopy (Figure 3). Postoperatively, the patient was admitted to the surgical intensive care unit for 72 h while intubated. He received intravenous (IV) dexamethasone, cefepime, and metronidazole. Extubation was performed when the inflammatory markers showed marked improvement, and repeated CT demonstrated complete resolution of the previously observed EA (Figure 4). Tissue culture results revealed *K. pneumoniae* and *Escherichia coli*.

Figure 1. Lateral neck X-ray demonstrating the thumbprint sign, indicative of swollen epiglottis

Figure 2. Contrast-enhanced computed tomography scan revealing epiglottitis accompanied by an epiglottic abscess

Discussion

EA, with an incidence of 4%, is generally considered an uncommon complication of acute epiglottitis (also referred to as supraglottitis). EA predominantly affects males, and compared withchildren, adults are more likely to experience neck discomfort and voice changes as additional symptoms (3). Voice alterations are more commonly reported by patients with EA (4), whereas sore throat is the most prevalent symptom in other studies, followed by dysphagia, voice change, and dyspnea (5,6).

Pre-existing diabetes mellitus is a potential risk factor for the development of acute epiglottitis and EA, particularly in males aged 35 to 64 years. A history of foreign body ingestion is another risk factor for EA (7), as is incomplete vaccination, particularly for H. influenzae type B.

The diagnosis of epiglottitis relies on the physician's suspicion along with the patient's acute clinical presentation. If there are signs of airway compromise, a lateral neck X-ray may confirm the condition through the "thumb sign" but is not always necessary. In cases where initial imaging is inconclusive, flexible fiberoptic laryngoscopy in the operating room may be considered. When an EA is suspected, a CT scan is an appropriate diagnostic test for stable patients (8).

The primary management step for epiglottitis is airway protection (9). Delayed or inadequate treatment may lead to life-threatening airway obstruction (9). Patients who present with clinical features of airway obstruction or have been diagnosed with EA should be transported to the operating room for further airway management and drainage, often following tracheal intubation (9). Antibiotic overuse, potentially leading to the development and spread of antimicrobial resistance, may contribute to the occurrence of EA. Epiglottitis with EA is more complex and challenging to treat than pure epiglottitis.

Various treatments have been described in the literature, including incision and drainage under general anesthesia (10,11), spinal needle aspiration (12,13), and other therapies that serve as alternatives or adjuncts to antibiotic therapy (10-13). However, no consensus has been reached regarding the optimal treatment approach for EA.

A recent study reported that individuals with EA who were treated with antibiotics and indirect laryngeal biopsy forceps experienced shorter hospital stays and faster symptom relief than those who received medication alone. The use of laryngeal biopsy forceps under local anesthesia instead of general anesthesia for treating EA was found to be more practical, simpler, and inexpensive (13).

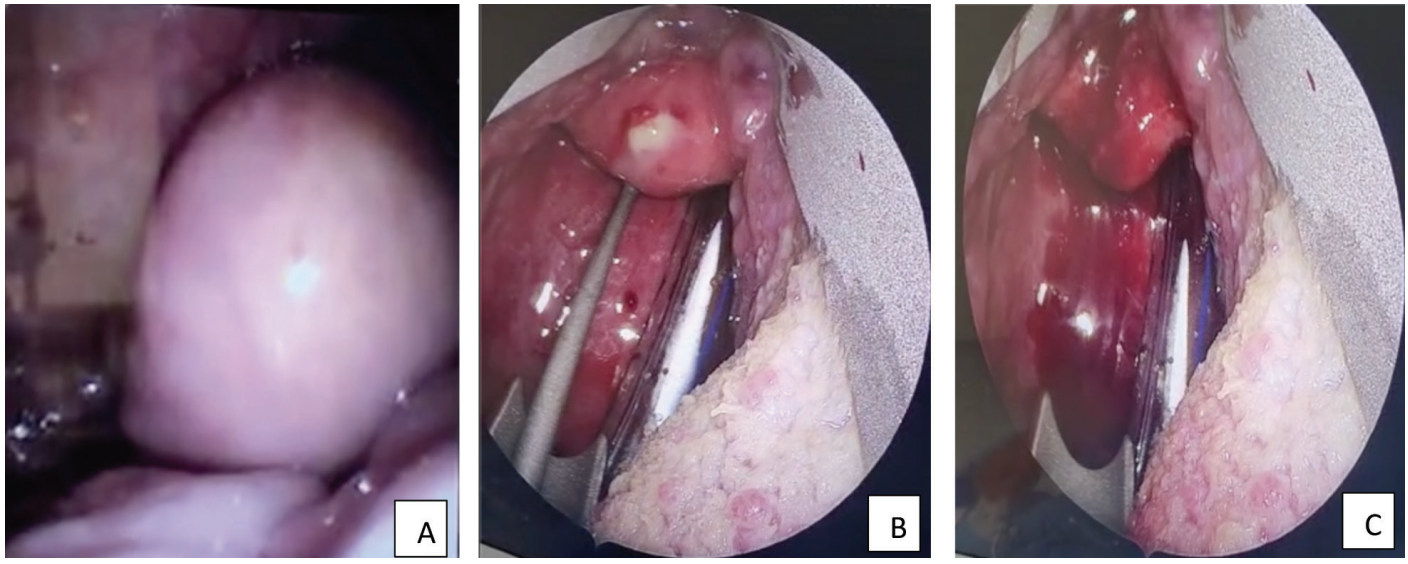

Figure 3. Intraoperative findings using a laryngoscope, displaying epiglottitis with an epiglottic abscess. A) Pre-intubation. B) Pre-incision and drainage. C) Post-incision and drainage

Figure 4. Contrast-enhanced computed tomography scan presenting near-complete resolution of the epiglottic abscess (sagittal view)

Conclusion

In conclusion, this case report underscores the importance of maintaining a high index of suspicion for EA as a potential complication of epiglottitis, particularly in adult males. Prompt diagnosis and management, including securing the airway, administering IV antibiotics, and performing surgical drainage, are crucial in preventing life-threatening complications and ensuring a favorable outcome for the patient. Clinicians should be vigilant for symptoms such as severe sore throat, dysphagia, odynophagia, fever, and rapid progression of symptoms in the context of known or suspected epiglottitis. Collaboration among emergency physicians, intensivists, and otolaryngologists is essential to provide timely and effective care to these patients. Further research is needed to better understand the risk factors, optimal management strategies, and long-term outcomes of patients with EAs.

Acknowledgements

The authors would like to express their gratitude to the patient for allowing the publication of this case report and to the hospital staff for their contribution to the patient's care.

Ethics

Informed Consent: The patient provided informed consent for the publication of this case report and the accompanying images (verbal consent).

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices - Concept - Design - Data Collection or Processing - Analysis or Interpretation - Literature Search - Writing: A.D., A.A., H.A., M.H., I.A.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Brook I. Acute epiglottitis in adults: analysis of 129 cases. J Fam Pract. 2001;50:853-6.
2. Al-Qudah M, Shetty S, Alomari, M. Supraglottic and epiglottic abscess. American Journal of Otolaryngology. 2012;33:221-3.
3. Shah RK, Roberson DW, Jones DT. Epiglottitis in the Hemophilus influenzae type B vaccine era: Changing trends. Laryngoscope. 2004;114:557-60. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1097/00005537-200403000-00031
4. Ng HL, Sin LM, Li MF, Que TL, Anandaciva S. Acute epiglottitis in adults: a retrospective review of 106 patients in Hong Kong. Emerg Med J. 2008;25:253-5.
5. Katori H, Tsukuda M. Acute epiglottitis: Analysis of factors associated with airway intervention. J Laryngol Otol. 2005;119:967-72.
6. Swain SK, Shajahan N, Debta P. Acute epiglottitis–A life-threatening clinical entity. Journal of Clinical and Scientific Research. 2020;9:110-5. Available from: https://journals.lww.com/jcsr/Fulltext/2020/09020/Acute_epiglottitis___A_life_threatening_clinical.8.aspx
7. Guardiani E, Bliss M, Harley E. Supraglottitis in the era following widespread immunization against Haemophilus influenzae type B: evolving principles in diagnosis and management. Laryngoscope. 2010;120:2183-8.
8. Sakarya EU, Kulduk E, Gündoğan O, Soy FK, Dündar R, Kılavuz AE, Özbay C, et al. Clinical features of deep neck infection: analysis of 77 patients. The Turkish Journal of Ear Nose and Throat. 2015;25:102-8.
9. Ng HL, Sin LM, Li MF, Que TL, Anandaciva S. Acute epiglottitis in adults: a retrospective review of 106 patients in Hong Kong. Eurasian J Emerg Med. 2008;25:253-5. Available from: https://emj.bmj.com/content/25/5/253.short
10. Valdepeña HG, Wald ER, Rose E, Ungkanont K, Casselbrant ML. Epiglottitis and Haemophilus influenzae immunization: the Pittsburgh experience–a five-year review. Pediatrics 1995;96:424-7. Available from: https://publications.aap.org/pediatrics/article-abstract/96/3/424/59869/Epiglottitis-and-Haemophilus-influenzae
11. Faden H. The dramatic change in the epidemiology of pediatric epiglottitis. Pediatr Emerg Care. 2006;22:443-4.
12. Westerhuis B, Bietz MG, Lindemann J. Acute epiglottitis in adults: an under-recognized and life-threatening condition. South Dakota Medicine. 2013;66. Available from: https://web.s.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=00383317&asa=Y&AN=94829129&h=%2fwyxyiHwC4rDne7IorNyyv4fbgX5Exdyhjc B4QybzPHeTW%2bn7AmkLmNufSxbS7%2bOps7V0DOYP2a%2fG7AaCBb3Iw%3d%3d&crl=c&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authtype%3dcrawler%26jrnl%3d00383317%26asa%3dY%26AN%3d94829129
13. Suzuki S, Yasunaga H, Matsui H, Fushimi K, Yamasoba T. Factors associated with severe epiglottitis in adults: Analysis of a Japanese inpatient database. Laryngoscope. 2015;125:2072-8.