

OLGU SUNUMU CASE REPORT

DOI: 10.24179/kbbbbc.2021-81252

A Rare Surgical Emergency in Geriatric Patient: Epiglottic Abscess

Geriatrik Hastada Gelişen Nadir Bir Cerrahi Acil: Epiglot Apsesi

Vural AKIN^a, Mustafa TÜZ^a, Bekir BÜYÜKÇELİK^a, Mehmet Emre SİVRİCE^a

^aDepartment of Ear, Nose and Throat Diseases, Süleyman Demirel University Faculty of Medicine, Isparta, TURKEY

ABSTRACT Epiglottic abscess is a rare complication of acute epiglottitis that can lead to upper airway obstruction and is fatal if not diagnosed early and treated. Common symptoms include dysphagia, odynophagia, dysphonia, stridor and fever. Fiberoptic laryngoscopy and contrast-enhanced neck computed tomography are the most common methods of diagnosis. In the treatment of this complication, the airway should be secured initially, abscess should be drained then and intravenous antibiotherapy should be administered. In the present study, we discuss our approach to epiglottic abscesses through a geriatric patient who underwent an emergency operation for epiglottic abscess and was treated successfully.

ÖZET Epiglot apseleri, akut epiglottitin üst havayolu obstrüksiyonuna neden olabilen, erken tanı ve tedavi uygulanmazsa mortal seyreden nadir bir komplikasyondur. Sık görülen semptomları; disfaji, odinofaji, disfoni, stridor ve ateş yüksekliğidir. Tanıda en sık fiberoptik larinks endoskopisi ve kontrastlı boyun bilgisayarlı tomografisinden faydalanılır. Tedavide öncelikle havayolu güvene alınmalı, takiben apse drene edilip intravenöz antibiyoterapi verilmelidir. Bu çalışmada, epiglot apsesi nedeniyle acil operasyona alınıp başarıyla tedavi ettiğimiz geriatrik hasta üzerinden epiglot apselerine yaklaşımı ele aldık.

Keywords: Abscess; drainage; epiglottitis; geriatrics; tracheostomy

Anahtar Kelimeler: Apse; drenaj; epiglottit; geriatri; trakeostomi

Epiglottic abscess (EA) is a rare complication of acute epiglottitis with an annual incidence of 1 in 100,000 adults.^{1,2} Its mortality rate varies from 7% to 30%.³⁻⁵ This complication carries a risk of obstruction in the upper airways, so early intervention is critical.^{1,6} In addition to anamnesis, laryngoscopy and contrast-enhanced neck computed tomography (CT) are important in diagnosis.^{5,7,8} In its treatment, the airway should be secured initially, abscess should be drained then and intravenous (IV) antibiotherapy should be administered.^{1,4,7,8} Emergency intubation or tracheotomy may be required in patients with severe symptoms because of obstruction.⁹

In this case report, we discuss a case of EA obstructing the upper airways in a geriatric patient, in the light of the literature.

CASE REPORT

A 73-year-old male patient was admitted in our clinic with the complaint of dysphagia for three days. The patient initially had difficulty swallowing solid foods only; however, on the last day, he started having difficulty swallowing liquid foods as well. Moreover, he stated that his voice was hoarse and he had difficulty breathing. The patient had a smoking history of 60 pack years, and remaining of the anamnesis was unremarkable. Physical examination of the patient revealed that his voice was hoarse and there was an accumulation of saliva in the mouth. In flexible fiberoptic endoscopy, a mass lesion starting from the free margin of the epiglottis, filling both sides of the vallecula epiglottica and covering the vestibule of the larynx by 90%, was observed (Figure 1). Movements

Correspondence: Vural AKIN
Department of Ear, Nose and Throat Diseases, Süleyman Demirel University Faculty of Medicine, Isparta, TURKEY/TÜRKİYE
E-mail: dr.vuralakin@gmail.com



Peer review under responsibility of Journal of Ear Nose Throat and Head Neck Surgery.

Received: 12 Jan 2021 **Received in revised form:** 11 Feb 2021 **Accepted:** 16 Feb 2021 **Available online:** 17 Mar 2021

1307-7384 / Copyright © 2021 Turkey Association of Society of Ear Nose Throat and Head Neck Surgery. Production and hosting by Türkiye Klinikleri.
This is an open access article under the CC BY-NC-ND license (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

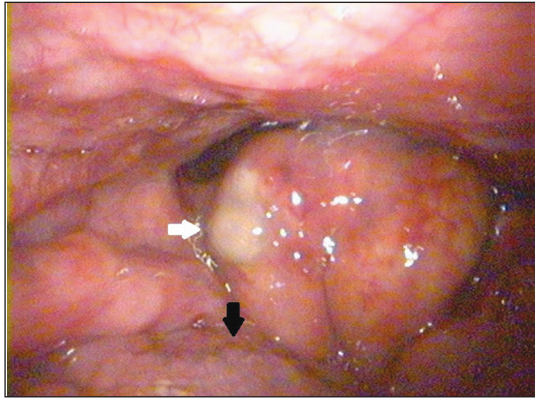


FIGURE 1: Flexible fiberoptic endoscopy view of epiglottic abscess (A) and vocal cords (B) at admission. The white arrow indicates the epiglottic abscess and the black arrow indicates the base of tongue (A).

of the vocal cords were normal. The patient's blood pressure was 120/70 mmHg, fever 36.6 °C, pulse 80/min, respiratory rate 16/min and SpO₂ 94%. Blood test results were as follows: leukocyte $16 \times 10^3/\mu\text{L}$, neutrophil $14.2 \times 10^3/\mu\text{L}$, lymphocyte $1 \times 10^3/\mu\text{L}$, haemoglobin 15.6 g/dL and CRP 257.47 mg/L. Routine biochemical tests were normal. Contrast-enhanced neck CT was performed with the pre-diagnosis of EA. An infected mass of 38×27 mm was observed, starting from the level of the epiglottis and extending laterally to the left palatine tonsillar level and both aryepiglottic folds, showing peripheral enhancement in loculated appearance (Figure 2). The

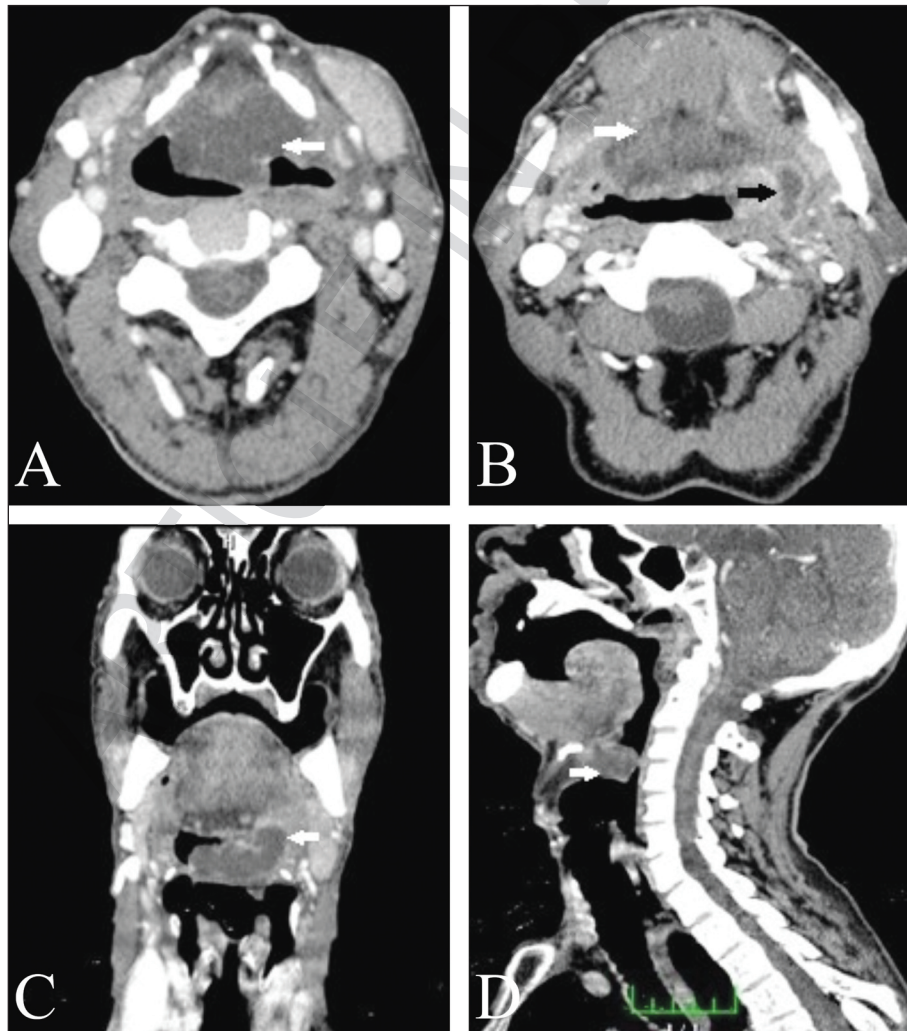


FIGURE 2: Contrast-enhanced neck computed tomography images [white arrows indicate the abscess (A, B, C, D) and black arrow indicates the part of the abscess extending to the left parapharyngeal area (B)].

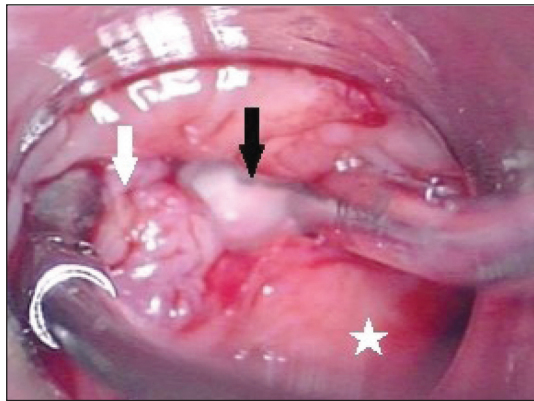


FIGURE 3: Intra-operative view of marsupialisation of abscess wall on lingual face of the epiglottis. The white arrow indicates the marsupialised abscess wall, black arrow indicates the purulent material and asterisk indicates the base of tongue.

drainage of the abscess was planned under general anaesthesia, and the patient was intubated with a video laryngoscope. The abscess wall on the lingual face was marsupialised with direct laryngoscopy (Figure 3). During this procedure, abscess culture and biopsy were taken. Tracheotomy was performed due to the risk of oedema, bleeding and abscess relapse in the post-operative period. With the recommendation of the Infectious Diseases Clinic, ampicillin-sulbactam at a dose of 4x1.5 g (IV) was started. Nutrition was administered to the patient with a nasogastric tube in line with the recommendations of the Nutrition Unit. Abscess culture was negative, but biopsy result revealed abscess and necrotising inflammation. The patient was followed up with IV antibiotherapy for 10 days, and daily vallecula epiglottica aspiration was performed (Figure 4). Nasogastric tube was removed on post-operative day 5,

and tracheotomy was closed. He was discharged on post-operative day 10. In the first-month follow-up, the patient had no complaints, and physical examination was normal as well.

Informed consent was obtained from patient.

DISCUSSION

Epiglottitis is an acute-onset infective condition that poses a risk of obstruction in the supraglottic area.^{1,7} Besides epiglottitis, arytenoids, aryepiglottic folds and vallecula epiglottica may also be affected.^{1,5} The causative agents are generally bacteria, and *Haemophilus influenzae* type B is primarily responsible.^{5,8-11} Other bacteria such as *Streptococcus pneumoniae*, β -haemolytic streptococci, *Staphylococcus aureus* and *Klebsiella pneumoniae* as well as some viral and fungal agents can also cause epiglottitis.^{4,12} Although it is typically known as a pediatric disease in children aged between 2-6 years, with the spread of *H. influenzae* type B vaccine, a decrease in the pediatric incidence of epiglottitis has been observed.^{5,8-11} Studies on its incidence in adults have yielded different results, suggesting that the frequency remains constant or increases.^{2,9,10} The annual incidence in adults is approximately 1/100,000.^{1,2} The average age of incidence among adult patients is 45 years, and it occurs three times more commonly in males than in females.^{1,2} Diabetes mellitus was found to be the most common chronic disease accompanying epiglottitis, but no comorbidity was found in most patients.⁹

EA is a rare complication of acute epiglottitis.^{1,4,8} Studies on the incidence of abscess formation have

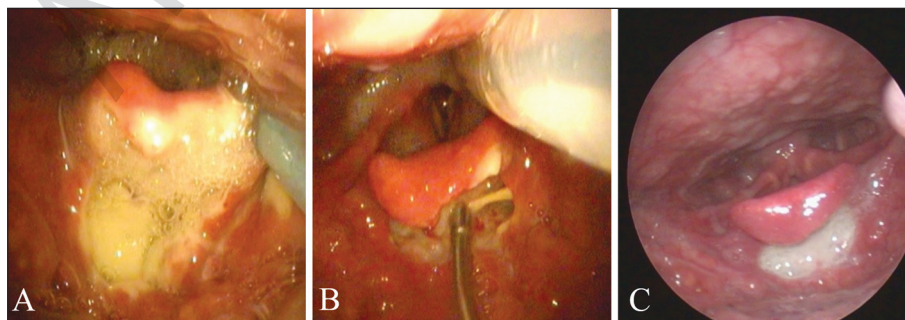


FIGURE 4: Images of the larynx endoscopies performed in the post-operative period. (A: Post-operative day 1, healing tissue is seen in the surgical area; B: Post-operative day 4, image showing aspiration of vallecula epiglottica; C: Post-operative day 10, endoscopy image taken on the day the patient was discharged).

found a wide range between 0% and 29%.^{5,11} Lee et al. examined patients with acute epiglottitis with routine CT and found abscess in 22% of them.⁵ Acute epiglottitis causes symptoms later in adults with larger airways than in children, which delays the initiation of treatment; therefore, EA usually occurs in adults.^{4,8} Although the mortality rate of EA was found to be approximately 30% in previous studies, this rate was approximately 7% in some recent studies.³⁻⁵

Common symptoms in patients are dysphagia, odynophagia, dysphonia, stridor, fever, pharyngocervical pain and cervical lymphadenopathy.^{1,7,11} As EA occurs, the symptoms are exacerbated, and the risk of airway obstruction increases; complete obstruction may occur within 12 hours.^{1,6} The diagnosis is usually made by anamnesis and laryngeal endoscopy.¹ It primarily occurs on the lingual face of the epiglottis, which is thought to be caused by the weak attachment of the mucosa to the cartilage in this area.¹ Abscess should be suspected in case of asymmetry in the epiglottis and in the presence of yellow-red mucosa.¹ Lateral neck radiographs and CT can be used for diagnosis.^{7,8} As fiberoptic laryngoscopes give faster and more accurate results, radiological examinations are secondary.^{7,8} Radiological examinations should be performed when the patient is stable and the airway is safe.⁸ Although finding the thumb sign on direct radiographs indicates epiglottitis, CT is very useful in distinguishing abscess.⁸ Laryngitis, deep neck abscess, peritonsillar abscess, lingual tonsillitis, foreign bodies, and infected epiglottic cysts should be considered in the differential diagnosis of EA.^{1,13}

Securing the airway, drainage of the abscess (drainage by needle aspiration or incision) and IV antibiotherapy are the basis of the treatment.^{1,4,7,8} Patients with severe airway symptoms may require intubation, tracheotomy or cricothyrotomy.⁹ Corticosteroids may be preferred to reduce supraglottic inflammation and airway obstruction, but there is no consensus among studies on this subject.^{7,8} After drainage, laryngoscopy should be performed at regular intervals, and obstruction should be monitored.⁶ Owing to the possibility of relapse, patients who underwent tracheotomy should be closely monitored 2-4 days before decannulation.⁶

Culture should be taken during drainage, and antibiotherapy should be revised according to the culture result. Abscess culture results mostly indicate polymicrobial growth.⁷ Blood cultures are 75%-95% negative.⁴

Despite the absence of fever in our patient, the short duration of the complaints made us primarily consider epiglottitis and EA in the differential diagnosis. EA might be misdiagnosed by confusing with epiglottic malignant masses, especially in elderly smokers. In this case, elective laryngeal biopsy should be performed instead of emergency surgery. At this point, anamnesis constitutes the key point in differential diagnosis. Despite the high CRP level and neutrophil predominated leucocytosis, the lack of fever response may be related to the immune system changes in the geriatric population.¹⁴ Geriatric patients are more susceptible to airway obstruction; therefore, we think that early diagnosis and treatment are more important in this patient group. Furthermore, dysphagia and odynophagia may continue in these patients during the healing period because of the effects of abscess and surgery. Nutritional deterioration in geriatric patients weakens the immune response to infection.¹⁵ Regarding nutritional support, we supplied nutrition to our patient through a nasogastric tube in the first five days, following the recommendations of the Nutrition Unit.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Vural Akın, Mustafa Tüz, Bekir Büyükçelik, Mehmet Emre Sivrice; **Design:** Vural Akın, Mustafa Tüz, Bekir

Büyükçelik, Mehmet Emre Sivrice; Control/Supervision: Vural Akin, Mustafa Tüz, Bekir Büyükçelik, Mehmet Emre Sivrice; Data Collection and/or Processing: Vural Akin, Bekir Büyükçelik, Analysis and/or Interpretation: Vural Akin, Mustafa Tüz, Mehmet Emre Sivrice; Literature Review: Vural Akin, Mustafa

Tüz, Bekir Büyükçelik; Writing the Article: Vural Akin, Mustafa Tüz, Bekir Büyükçelik, Mehmet Emre Sivrice; Critical Review: Vural Akin, Mustafa Tüz, Mehmet Emre Sivrice; References and Fundings: Vural Akin; Materials: Vural Akin, Mustafa Tüz, Bekir Büyükçelik, Mehmet Emre Sivrice.

REFERENCES

1. Vasileiadis I, Kapetanakis S, Vasileiadis D, Petousis A, Karatzas T. Epiglottic abscess causing acute airway obstruction in an adult. *J Coll Physicians Surg Pak*. 2013;23(9):673-5. <https://jcpsp.pk/archive/2013/Sep2013/18.pdf>
2. Barrow HN, Vastola AP, Wang RC. Adult supraglottitis. *Otolaryngol Head Neck Surg*. 1993;109(3 Pt 1):474-7. PMID: 8414565
3. Heeneman H, Ward KM. Epiglottic abscess: its occurrence and management. *J Otolaryngol*. 1977;6(1):31-6. PMID: 864812
4. Hsieh JK, Phelan MP, Wu G, Bricker A, Anne S. Epiglottic abscess. *Am J Emerg Med*. 2015;33(5):734.e5-7. PMID: 25456339
5. Lee YC, Kim TH, Eun YG. Routine computerised tomography in patients with acute supraglottitis for the diagnosis of epiglottic abscess: is it necessary?--a prospective, multi-centre study. *Clin Otolaryngol*. 2013;38(2):142-7. PMID: 23577882
6. Lee YC, Lee JW, Park GC, Eun YG. Efficacy of spinal needle aspiration in patients with epiglottic abscess: a prospective, randomized, controlled study. *Otolaryngol Head Neck Surg*. 2015;153(1):48-53. PMID: 25931293
7. Hindy J, Novoa R, Slovik Y, Puterman M, Joshua BZ. Epiglottic abscess as a complication of acute epiglottitis. *Am J Otolaryngol*. 2013;34(4):362-5. PMID: 23391346
8. Rabeea M, Al Ansari H, Al Abdulla A. An atypical cause of an epiglottic abscess. *Case Rep Infect Dis*. 2019;12:2019:9674852. PMID: 31915555; PMCID: PMC6930718
9. Berger G, Landau T, Berger S, Finkelstein Y, Bernheim J, Ophir D. The rising incidence of adult acute epiglottitis and epiglottic abscess. *Am J Otolaryngol*. 2003;24(6):374-83. PMID: 14608569
10. Shah RK, Stocks C. Epiglottitis in the United States: national trends, variances, prognosis, and management. *Laryngoscope*. 2010;120(6):1256-62. PMID: 20513048
11. Salman R, Lateef M, Qazi SM, Rafiq S. Adult epiglottic abscess: a case report. *Indian J Otolaryngol Head Neck Surg*. 2011;63(Suppl 1):85-6. PMID: 22754849; PMCID: PMC3146680
12. Abdallah C. Acute epiglottitis: trends, diagnosis and management. *Saudi J Anaesth*. 2012;6(3):279-81. PMID: 23162404; PMCID: PMC3498669
13. Eliçora SŞ, Dinç AE, Bişkin S, Damar M, Kumbul YÇ. Dev epiglot kisti. [Giant epiglottis cyst]. *ENTCase*. 2015;1(3):186-90. <http://ent-case.org/manuscript/129/makale/bas-boyuncerrahisi/dev-epiglot-kisti.htm>
14. Norman DC. Fever in the elderly. *Clin Infect Dis*. 2000;31(1):148-51 PMID: 10913413
15. Pae M, Meydani SN, Wu D. The role of nutrition in enhancing immunity in aging. *Aging Dis*. 2012;3(1):91-129. PMID: 22500273; PMCID: PMC3320807