

Case Report

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A Case of Laryngeal Abscess due to a Rare Causative Organism



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Abstract

Purpose: To report a case of rarely encountered Laryngeal abscess caused by a rare bacterium.

Case report: A middle aged gentleman with uncontrolled Diabetes Mellitus presented with progressive dysphagia and worsening throat pain due to Laryngeal abscess involving the Epiglottis requiring emergency incision and drainage with aggressive post-operative medical management for rare causative bacteria - Citrobacter koseri. He had an uneventful, complete recovery from an otherwise potentially life-threatening condition.

Conclusion: Fortunately rare, laryngeal abscesses are challenging conditions for otolaryngologists and anesthesiologists sharing the upper common airway. Once the acute crisis is over these patients require aggressive medical management as surprises can crop up as in our case in form of the causative organism.

Keywords: Laryngeal abscess; Diabetes mellitus; Citrobacter koseri

Introduction

Infections and abscesses of larynx are serious, potentially life-threatening conditions which fortunately in the present era of higher and more potent antibiotics, are rare to find in ENT practice [1]. However, there has been a rise in incidence of adult acute epiglottitis and epiglottic abscess due to miscellaneous pathogenic bacteria [2]. Here, we present such a case with a rare causative bacterium.

Case Presentation

A 50-year-old gentleman presented with throat pain and progressive dysphagia to both solids and liquids over previous four days. He experienced some discomfort in throat after eating fish at the onset but did not seek any medical attention initially. When seen in Emergency room, the patient was afebrile, stable but anxious. He was sitting in a forward leaning posture,

having severe stertor, muffled speech but no stridor or respiratory distress. The patient had a past history of Hypertension, Diabetes Mellitus and Dyslipidemia for 15 years and was on insulin mixtard injection twice daily for his DM but it was partially controlled as his HbA1c on presentation was 7.2%, his BP also was mildly uncontrolled with stable DLP. Indirect fiberoptic laryngoscopy showed Diffuse Epiglottic bulge obscuring laryngeal inlet and CT scan neck with contrast revealed Epiglottic abscess. (Figures 1&2).

Treatment

Immediate concern

Maintain safe Airway – Patient admitted in ICU, Standby tracheostomy was kept ready. Considering Hemophilus Influenza Type B being the commonest causative organism for acute epiglottitis, Injection Amoxycillin, clavulanic acid combination was started. Intravenous long-acting steroid was given.

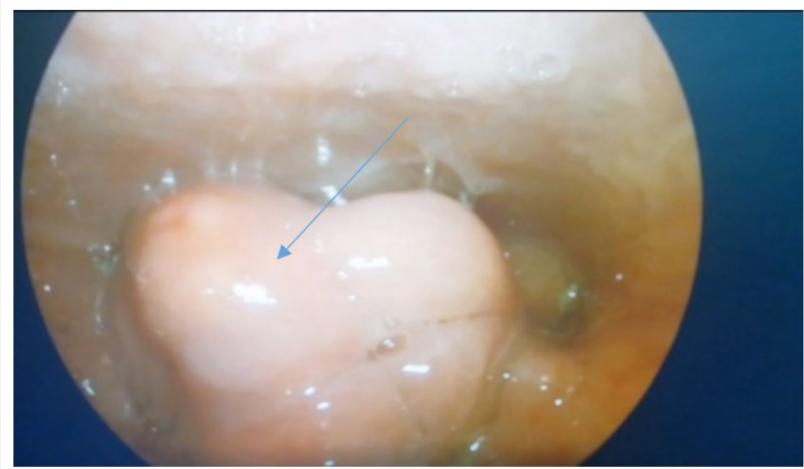


Figure 1: Fiber optic Indirect Laryngoscopy-Edematous Epiglottis blocking the Laryngeal inlet with pus pointing on right side of superior border suggesting abscess (arrow) and bulging anterior wall reaching up to vallecula.

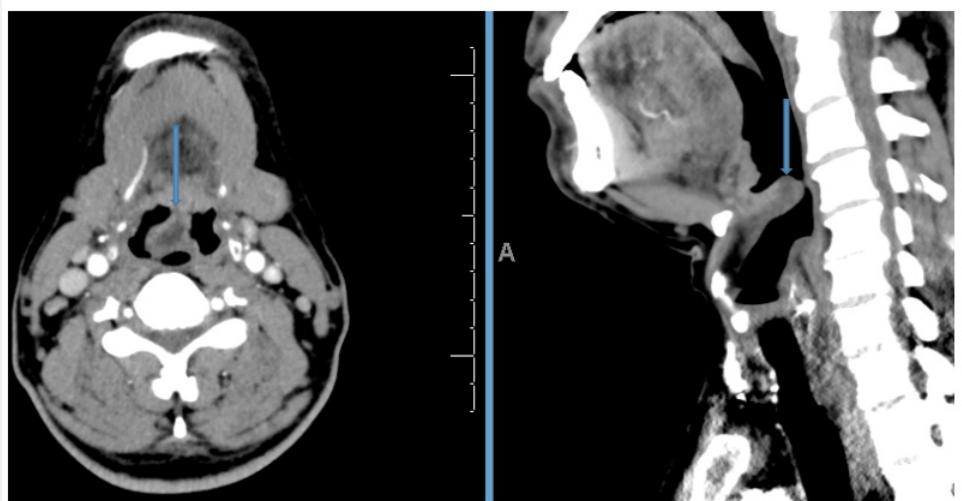


Figure 2: CT scan neck with contrast revealed - Epiglottic abscess reaching up to vallecula (arrow).

Emergency abscess drainage on the day of admission

Intubation of the patient for general anesthesia was a major challenge due to obstructed view of the glottis and risk of rupture of abscess during intubation. The risks were duly explained to the patient and his relatives by the Anesthesiologist and ENT specialist and informed high risk consent taken for emergency Tracheostomy. With gentle and skillful maneuvering, our Anesthesiologist performed a smooth intubation and thereafter incision and drainage of the abscess was done under direct Laryngoscopic view.

Medications

Apart from the antibiotic, sliding Insulin conservative scale started 6 hourly with good glycemic control. In post-operative,

basal bolus insulin regimen was resumed. In addition, anti-inflammatory analgesics, steroid nebulization 8 Hourly and Dilute Adrenalin nebulization once a day for 2 days for topical mucosal decongestion was given. As the inflammation and infection markers were not showing expected reduction in values despite the surgery and after 2 days of injectable antibiotics, resistant organism was suspected that was confirmed on pus culture which grew *Citrobacter koseri* resistant to Amoxycillin Clavulonic acid. The antibiotic was immediately changed to Ceftriaxone 1 G 12 hourly and Clindamycin 600 mg 8 hourly with rapid recovery over the next two days.

Guiding tools for infection monitoring

- a. CRP - most sensitive

b. WBC, DLC, Absolute Neutrophil counts (Figure 3)

Microbiology report and culture sensitivity report was available on Day 3. Organism isolated: *Citrobacter koseri* (Figure 4) and (Table 1). The Patient was discharged on oral Ciprofloxacin

500mg BID for 7 days along with anti-diabetic medications. He followed up after 10 days of surgery in outpatient clinic: He was completely asymptomatic. Fibre optic Laryngoscopy showed complete resolution of Epiglottic swelling and inflammation (Figure 5).

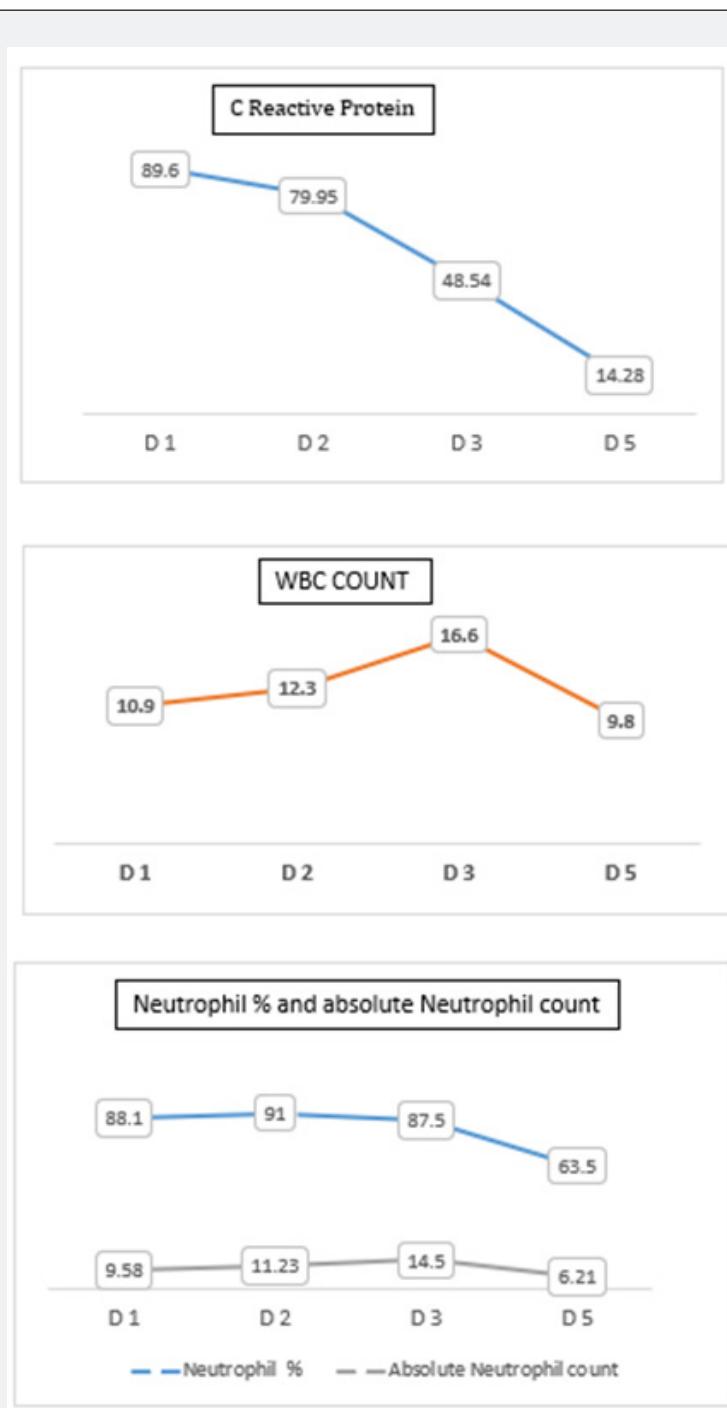


Figure 3: Laboratory Investigations monitoring the patient's progress on Days 1, 2, 3 & 5.

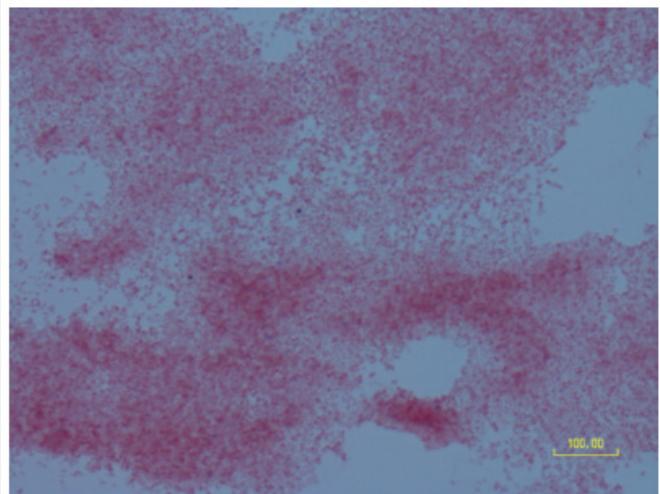


Figure 4: Gram-stained smear from the culture isolate shows short Gram-negative bacilli.



Figure 5: 10th post-operative day follow up Laryngoscopy: Complete resolution of Epiglottic edema allowing good visualization of the vocal cords.

Table 1: Antibiotic sensitivity result of the organism isolated.

Amocy+Clavu	Resistant	Levofloxacin	Sensitive
Amikacin	Sensitive	Meropenem	Sensitive
Cefuroxime	Resistant	Piper/Tazoba	Sensitive
Ceftriaxone	Sensitive	Imipenem	Sensitive
Cefotaxime	Sensitive	Cefazolin	Resistant
Ciprofloxacin	Sensitive	Ampicillin	Resistant
Gentamycin	Sensitive	Cotrimoxazole	Resistant

Discussion

Differentiation between acute inflammation and abscess formation decided the line of management in this case. If it were not

an abscess, we would have managed conservatively. Radiological confirmation of abscess along with the clinical and laryngoscopic picture helped us to take a decision for surgical intervention. Safe airway is always the priority in the acute stage of Laryngeal infection. Once the acute stage is seen through, aggressive medical management helps the patient make a good recovery as almost always these patients are suffering from comorbid conditions and the causative organisms are resistant to most routinely used antibiotics. If the CRP does not fall below 60% of pre antibiotic value in 72 hours after initiation of treatment or below 90% in 7 days, it strongly suggests inadequate treatment/inappropriate antibiotic [3]. Organisms of the genus *Citrobacter* gram-negative bacilli belonging to the Enterobacter family. They are facultative Anaerobe and occasional inhabitants of the gastrointestinal

tract. They cause diseases in neonates and debilitated or immunocompromised patients. The genus *Citrobacter* consists of three species linked to human diseases: *C. amalonaticus*, *C. koseri* - formerly *diversus* and *C. freundii*.

Goals of presentation

- i. Rarity of the case. Only 4 reported cases of Oropharyngeal abscess caused by *Citrobacter* earlier [4].
- ii. Timely intervention - potentially life-threatening condition.
- iii. Objective and reliable laboratory tests for monitoring of infection and appropriateness of antibiotic treatment.
- iv. Emphasis on a teamwork for a successful outcome in a potentially life-threatening condition.
- v. Involvement of an experienced Anesthesiologist is of paramount importance during surgical intervention [5].

Conclusion

Obstructive lesions of the Laryngeal airway are always challenging. Uncontrolled diabetes aggravates the infection and

can lead to life threatening complications. Efficient teamwork with aggressive medical management can be lifesaving in cases of obstructive upper airway lesions.

References

1. Canalis RF, Jenkins HA, Osguthorpe JD (1979) Acute laryngeal abscesses. Ann Otol Rhinol Laryngol 88 (2 Pt 1): 275-279.
2. Berger G, Landau T, Berger S, Finkelstein Y, Bernheim J, et al. (2003) The rising incidence of adult acute epiglottitis and epiglottic abscess. Am J Otolaryngol 24: 374-383.
3. Bali R, Sharma P, Ghanghas P, Gupta N, Tiwari JD, et al. (2017) To Compare the Efficacy of C-Reactive Protein and Total Leucocyte Count as Markers for Monitoring the Course of Odontogenic Space Infections. J Maxillofac Oral Surg 16(3): 322-327.
4. Trindade, Aaron Sekhawat, V Andreou, Zenon Meldrum, J Kamat, et al. (2010) *Citrobacter freundii* causing pharyngitis and secondary retropharyngeal abscess with intrathoracic extension to the diaphragm: Minimally invasive management of a rare case. The J Laryngol Otol 124: e4.
5. Thrivikrama Padur Tantry, Ajay Prasad Hrishi, Reshma Koteswaran, Sunil P Shenoy, Karunakara Kenjar Adappa (2011) Acute epiglottic abscess in adults: still a challenge! J Anaesthesiol Clin Pharmacol 27: 426-428.



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