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Jeeven Velayutham, Jeyasakthy Saniasiaya

Epiglottic mass mimicking laryngeal carcinoma: a red herring

Guz nagłośni o obrazie przypominającym raka krtani: wyzwanie dla diagnosty

Department of Otorhinolaryngology, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, WP Kuala Lumpur, Malaysia
Correspondence: Jeyasakthy Saniasiaya, Department of Otorhinolaryngology, Faculty of Medicine, University of Malaya, Jalan Universiti, 50603 Kuala Lumpur, WP Kuala Lumpur, Malaysia, tel.: +6012-6841223, e-mail: shakthy_18@yahoo.com

ORCID iDs
1. Jeeven Velayutham https://orcid.org/0000-0002-0199-0937
2. Jeyasakthy Saniasiaya https://orcid.org/0000-0003-1974-4379

Abstract

Aim: Laryngeal masses are commonly found during patient assessments in the otorhinolaryngology clinic and are almost always associated with a serious pathology, such as a malignancy, rather than a benign condition. In addition, epiglottic masses are often linked to a malignant disorder or granulomatous infection. **Case report:** Herein, we describe an immunocompromised patient presenting with respiratory distress secondary to an epiglottic mass requiring tracheostomy in view of airway compromise. A repeated histopathological examination revealed methicillin-resistant *Staphylococcus aureus*, which was successfully eradicated with long-term antibiotics. The tracheostomy was decannulated. **Conclusion:** We highlight the importance of early measures and interventions to obtain a diagnosis that will aid in patients' management and recovery.

Keywords: laryngeal mass, malignancy, methicillin-resistant *Staphylococcus aureus*

Streszczenie

Cel: Guzy krtani są stosunkowo często wykrywane podczas badania otorynolaryngologicznego i prawie zawsze wiążą się z obecnością poważnego schorzenia, np. nowotworu złośliwego, a nie łagodnego stanu chorobowego. Guzy umiejscowione w nagłośni są często związane z chorobą nowotworową lub ziarniniakową. **Opis przypadku:** W pracy przedstawiono przypadek pacjenta o obniżonej odporności, u którego wystąpiła niewydolność oddechowa w następstwie guza zlokalizowanego w nagłośni. Z powodu upośledzenia drożności dróg oddechowych chory wymagał wykonania tracheostomii. Badanie histopatologiczne wykazało obecność gronkowca złocistego opornego na metycylinę (*methicillin-resistant Staphylococcus aureus*, MRSA). Wdrożono długi cykl leczenia antybiotykami, który przyniósł korzystne efekty. Usunięto rurkę tracheostomijną. **Wnioski:** Przedstawiony przypadek unaocznia znaczenie wczesnych działań i interwencji diagnostycznych ukierunkowanych na postawienie prawidłowej diagnozy, która umożliwia podjęcie właściwego leczenia i powrót pacjentów do zdrowia.

Słowa kluczowe: guz krtani, nowotwór złośliwy, gronkowiec złocisty oporny na metycylinę

INTRODUCTION

The spectrum of differentials in patients presenting with an epiglottic mass, besides malignancy, includes infection, inflammation, granulomatous disease, and papilloma. In the diagnostic work-up, clinical features of laryngeal masses can overlap, resulting in a diagnostic dilemma. It is worth noting that laryngeal carcinoma and laryngeal tuberculosis have demonstrated similar clinical presentations including hoarseness, dysphagia, dyspnoea as well as constitutional symptoms[1,2].

CASE REPORT

A 42-year-old man with an underlying human immunodeficiency virus (HIV) infection, hepatitis B and hepatitis C, presented with a three-day history of intermittent noisy breathing and worsening hoarseness. Upon further questioning, the patient claimed that the noisy breathing and shortness of breath became apparent upon exertion, and denied any choking or fainting episodes. The hoarseness was not associated with any voice abuse or trauma. Before the episode, there were no prior upper respiratory tract infections, trauma, or foreign body ingestion. The patient also denied any constitutional or B symptoms. The noisy breathing was not associated with any neck swelling, dysphagia or odynophagia. The patient had no recent sick contact or positive family history of malignancy.

Upon examination, the patient appeared comfortable under room air, with audible mild inspiratory stridor. Flexible laryngoscopy revealed the presence of a mass arising from the laryngeal and lingual surfaces of the epiglottis and extending to the vallecula and laterally to both sides of the aryepiglottic fold and obstructing the view of the vocal cords (Fig. 1). No palpable neck mass was present. Lung auscultation was clear. After discussing the findings with the patient, an emergency tracheostomy was performed under local anaesthesia in view of impending airway obstruction. Direct laryngoscopy and biopsy of the epiglottic mass were performed in the same setting and were uneventful. Histopathological examination (HPE) of the biopsy revealed chronic inflammation, but was negative for malignancy, granuloma, and fungal infection. Sputum test for acid-fast bacilli, culture and sensitivity, polymerase chain reaction (PCR) test for mycobacterium tuberculosis, and the Mantoux test were negative. The patient's blood parameters revealed an elevated white cell count and erythrocyte sedimentation rate. Otherwise, autoimmune workups and other viral screenings, including syphilis, were negative. The chest radiograph was clear. The patient was discharged home with a one-week follow-up.

A subsequent review showed no improvement in the laryngeal mass. Hence, a repeated direct laryngoscopy and partial debulking of the epiglottis for further histopathological evaluation were performed successfully. HPE of the laryngeal and lingual surfaces of the epiglottis showed markedly inflamed tissue, including lymphocytes and macrophages, covered by reactive squamous epithelium. No acid-fast bacilli, granuloma, fungal infection or malignancy was detected. However, methicillin-resistant *Staphylococcus aureus* (MRSA) were isolated from the tissue culture taken from the laryngeal surface of the epiglottis. Following a discussion with the infectious diseases team, the patient was treated with a two-week course of intravenous vancomycin 1 g (BD), which he responded to well. Echocardiography performed during admission showed no valve vegetations. Nasal and throat swab cultures taken upon the completion of the course of antibiotics showed no isolation of MRSA. The patient was discharged home with trimethoprim/sulfamethoxazole as part of his prophylactic treatment for HIV.

Repeated flexible laryngoscopy in the clinic revealed a reduced size of the mass over the epiglottis, causing no airway

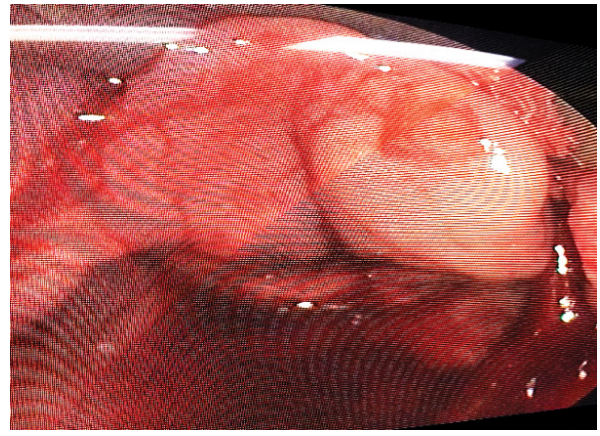

Fig. 1. Flexible laryngoscopy image showing an epiglottic mass extending towards the bilateral arytenoids and aryepiglottic folds, obstructing the laryngeal inlet

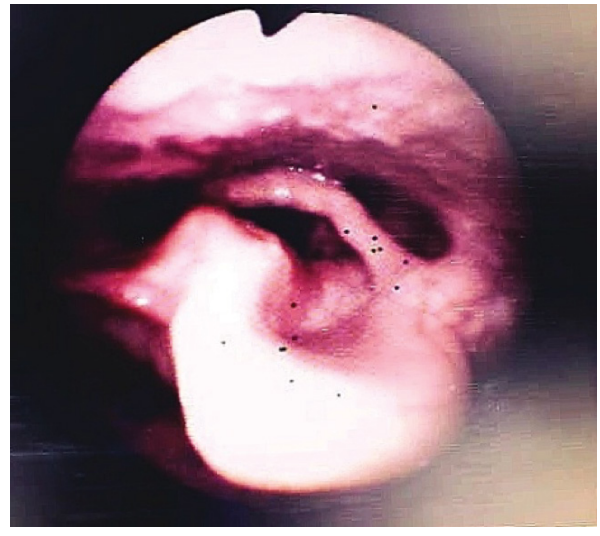

Fig. 2. Epiglottic mass reduced in size significantly with patent airway two months following debulking surgery and completion of IV vancomycin

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obstruction (Fig. 2). The patient was subsequently decannulated successfully and demonstrated a significant improvement in voice quality, with no recurrence of symptoms to date.

DISCUSSION

The clinical features of laryngeal diseases, such as laryngitis, laryngeal tuberculosis, lymphoma and carcinoma, can overlap to a certain extent, resulting in a similar presentation of hoarseness, dysphagia, dyspnoea, and sore throat[1]. Laryngeal malignancy and tuberculosis, for example, are associated with a history of weight loss, smoking, and alcohol abuse[1]. Laryngeal TB occurs secondary to a tuberculous lesion disseminated from other parts of the body or, rarely, from a primary affection from inhaled tubercle bacilli settling directly onto the larynx, which is common in immunocompromised individuals such as AIDS patients[2]. It is worth noting that in patients with laryngeal tuberculosis, the vocal cords are the most common site involved (50–70%), while the epiglottis is reported to be the least affected site[2].

The primary sites of laryngeal cancer are the supraglottis (70%), followed by the glottic and then subglottic regions[3]. Progressively worsening hoarseness is the cardinal symptom of laryngeal carcinoma, especially of the glottis[3]. Other associated laryngeal malignancy symptoms include neck swelling, dysphagia, cough, haemoptysis, halitosis, referred otalgia, and weight loss[3]. Squamous cell carcinomas (SCC) is the most common type of laryngeal malignancy (95%), followed by carcinoma in situ, verrucous, spindle cell and basaloid SCC, undifferentiated carcinoma, adenocarcinoma, and miscellaneous carcinomas (adenoid cystic, neuroendocrine carcinomas)[3]. Nonetheless, benign tumours account for 5% or less of all laryngeal tumours, whereby papilloma prevails (85%)[3]. This is then followed by other benign types, including chondroma, haemangioma, lymphangioma, schwannoma, neurofibroma, adenoma, granular cell myoblastoma, leiomyoma, rhabdomyoma, fibroma, lipoma, and paraganglioma[3]. In our case, the patient was an immunocompromised individual, an intravenous drug abuser, and a chronic tobacco smoker. Hence, his history of noisy breathing, hoarseness and epiglottic mass raised a suspicion towards either supraglottic cancer or laryngeal tuberculosis.

Previous reports on MRSA were identified from various clinically evident infections including the epiglottis, deep neck infections, otitis media and externa, chronic tonsillitis, and glottis[4]. However, MRSA isolation from tissue culture of an epiglottic mass has not been reported. Yet, it is worth noting that lately there has been a surge in MRSA cases among patients with head and neck infections[5]. Although there are many multidrug-resistant organisms that may cause resistant infections, MRSA is one of the most prevalent and persistent among these significant pathogens[5]. The anterior nares have been reported to be the most common site of MRSA colonization, though other sites, such as the throat, axilla, rectum, groin, or perineum, have been documented as well[5]. Early diagnosis from culture and sensitivity of tissue enables the initiation of an appropriate antibiotic therapy[6].

MRSA, being highly contagious, poses a threat to family members and the healthcare team during the course of diagnosis[6]. The Standard Precautions combine the major features of Universal Precautions (UP) and Body Substance Isolation (BSI)[6]. They are based on the principle that all blood, body fluids, secretions, excretions (except sweat), non-intact skin, and mucous membranes may contain or be contaminated with transmissible infectious agents[6]. The prevention practices include adherence to hand hygiene standards; use of gloves, gown, mask, eye protection, or face shield as appropriate to the anticipated exposure; and safe injection practices[6].

CONCLUSIONS

The presence of a laryngeal mass with airway obstruction requires a thorough evaluation, including direct laryngoscopy, followed by a histopathological examination of tissue biopsied from the lesion. It is prudent to note that, due to the overlapping symptoms of various laryngeal conditions, high clinical suspicion of uncommon possibilities, such as a bacterial infection, should be ruled out, especially among immunocompromised patients.

Conflict of interest

The author does not declare any financial or personal links to other persons or organisations that could adversely affect the content of this publication or claim rights thereto.

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