Combined Modality Treatment for Laryngeal Actinomycosis - A Rare Cause of Hoarseness

Abstract

Laryngeal actinomycosis is one of the rare forms of presentation by actinomyces israelli. This bacteria commonly affects the immunocompromised persons and the mainstay treatment of this disease is long term antimicrobial therapy. This case report is about primary laryngeal actinomycosis diagnosed in an immunocompetent individual, who presented with hoarseness. The review of literature and methodology of treatment offered to this patient are discussed in this article.

Keywords: Actinomycosis israelli; Immunocompromised; Videolaryngoscopy; Debulking

Case Report

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Introduction

Actinomycosis is a granulomatous disease caused by actinomyces israelli. It is a systemic infection that can manifest in cervicofascial region, thorax or abdomen. Cervicofascial is the most common area affected which presents as multiple discharging sinuses in the skin [1]. Laryngeal actinomycosis is relatively rare and only few cases have been reported in literature. Actinomycosis characteristically occur in immunocompromised persons, however cases have been reported following laryngeal trauma, surgeries and infection [2]. Its presentation can mimic a neoplasm thus making it a diagnostic dilemma if appropriate microscopic examinations are not done. In this study, we are reporting a case of laryngeal actinomycosis in an immunocompetent adult, which presented as a laryngeal neoplasm and the way of managing this disease.

Case Report

A 33 year old male, presented with complaints of hoarseness for 3 months. He was a non smoker and had no significant relevant past history. He had an episode of upper respiratory tract infection few months back. His neck was insignificant on examination. Videolaryngoscopy showed a papillomatous growth in anterior commissure with mobile vocal cords (Figure 1). Clinical diagnosis of a laryngeal neoplasm was made and he was planned for endoscopic laryngeal surgery. Intra operative examination showed a friable, polypoidal lesion involving anterior commissure, and anterior one third of both the vocal cords. However ventricles and subglottis were free. The lesion was debulked and biopsy report showed chronic inflammation, few areas of necrosis, presence of sulphur granules and negative for fungal stain (Figure 2). Diagnosis of laryngeal actinomycosis was made and he was started on cotrimoxazole (800/160mg) tablets twice daily. Periodic videolaryngoscopic assessments were carried out and showed regressing volume of lesion. At the end of 2 months of treatment the lesion completely disappeared. However the antimicrobial treatment was continued for another 2 months. 6 month follow up videolaryngeal picture showed no residual or recurrence of disease and patients voice improved subjectively (Figure 3).

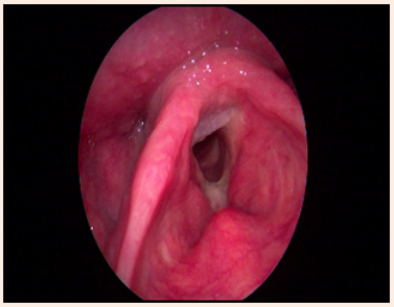

Figure 1: videolaryngoscopy showing papillomatous lesion in anterior commissure.

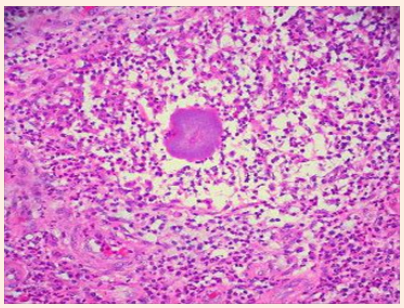

Figure 2: Histopathology showing areas of necrosis, giant cells and sulphur granules.

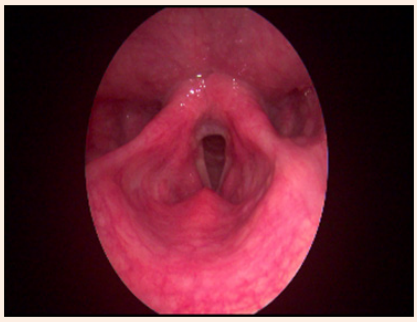

Figure 3: Videolaryngoscopy after completion of treatment.

Discussion

Actinomyces israelli is a gram positive, filamentous, anaerobic bacteria. It was previously considered as a fungus causing various systemic manifestations in immunocompromised hosts [3]. These are normal commensals of oral cavity and can become invasive, when the physical and immunological barriers of mucosa are lost and in the presence of anaerobic environment. Laryngeal actinomycosis, is a rare manifestation of disease spectrum caused by this organism. In literature, few cases of laryngeal actinomycosis have been reported in immunocompromised individuals, especially in those who underwent surgeries or radiation therapy in airway. Primary laryngeal actinomycosis in immunocompetent individuals perse is rare.

In this case, laryngeal actinomyces infection had developed possibly following an upper respiratory tract infection. Cough and associated mucosal edema probably would have damaged the protective barriers and this paving the way for an invasive disease. This disease can present as a nodule, ulcer or a papillomatous lesion, making an accurate clinical diagnosis difficult. There are few articles which have described its radiological features, which aid in diagnosing these lesions [2,3]. However, the author feels that microscopic examination of the tissue specimen as the quickest and most sensitive tool for diagnosis and radiological evaluation is needed only in presence of multiple systemic involvements and/or fistulas.

In literature, laryngeal actinomycosis have been managed traditionally by combined surgical and medical modalities [4-7]. In this case, surgical debulking followed by antimicrobial treatment was administered. The standard medical management for actinomycosis include administration of long acting penicillin and/or clindamycin, in case of penicillin allergy. In this case, we administered cotrimoxazole (800/160mg) tablets twice daily for 6 months, as he was allergic to penicillin. The advantage of using cotrimoxazole over clindamycin include its being cost effective and no risk of pseudomembranous colitis on a long term treatment.

Conclusion

Laryngeal actinomycosis is a rare cause of hoarseness, which should be considered even in immunocompetent individuals. Prompt histopathological examination in a suspicious clinical scenario will aid in arriving at the diagnosis. Radiological investigations are not warranted in all cases. Surgical debulking along with cotrimoxazole can be used safely in penicillin allergic patients without affecting the outcome.

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