# MRSA CHRONIC BACTERIAL LARYNGITIS: A GROWING PROBLEM

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Abstract

Objectives/Hypothesis: Chronic bacterial infection of the larynx is characterized by long-standing hoarseness and excruciating laryngitis. Protracted antibiotic therapy is required to cure the infection and MRSA may be the responsible pathogen. The objective of this study was to describe the presentation, co-morbidities, treatment response and underlying etiology, including the incidence of MRSA, in our patient population with chronic bacterial laryngitis.

Study Design: Retrospective Case Review

Methods: A review of patients with a diagnosis of chronic bacterial laryngitis from 2013-2016 was performed. Diagnosis of chronic bacterial laryngitis was based on clinical history and findings on flexible laryngoscopy. In selected cases, the diagnosis of MRSA bacterial laryngitis was confirmed by operative biopsy. Information regarding clinical presentation and course was collected.

Results: Twenty-eight patients were included in the study. Twenty-three were treated empirically with Augmentin for a minimum of 21 days. Twelve (52%) had recurrence or non-resolution of infection. A wave of the 12 non-responders (58%) were found to have MRSA by laryngeal tissue culture. The mean time required to eradicate the MRSA infection was 12 weeks. Five patients were treated initially with Bactrim and all resolved the infection without need for further treatment. There was a non-statistically significant increase in smoking and reflux in the MRSA population compared to the non-MRSA group.

Conclusions: A significant proportion of chronic bacterial laryngitis patients have MRSA as the underlying pathogen. Based on the results of the study, a treatment algorithm for management of this unusual patient population is suggested.

Introduction

Chronic bacterial laryngitis is the diagnosis in a growing patient population with chronic dysphonia and dysphagia in the setting of characteristic erythematous and edematous vocal cords with crusting and purulence obvious on flexible laryngoscopy. This disease can be a challenging problem for the Otolaryngologist as these patients often require extended antibiotic therapy for complete resolution of disease. In addition, a growing proportion of patients diagnosed with chronic bacterial laryngitis have been found to have methicillin-resistant staphylococcus aureus laryngitis.

The objective of this study was to assess the incidence in MRSA laryngitis in our patient population, evaluate potential risk factors, and to help create a treatment algorithm that may be used by the Otolaryngologist for this growing problem.

Methods and Materials

University of Utah Institutional Review Board approved the study prior to analysis of patient data. A retrospective review was performed on all patients associated with the code ‘Chronic Bacterial Laryngitis’ (ICD 10: I37.0, ICD 9: 476.0) seen in Laryngology clinic from 2012-2016. Twenty-eight patients met criteria for the diagnosis of chronic bacterial laryngitis. All patients underwent full evaluation in clinic with diagnosis of bacterial laryngitis based on flexible laryngoscopy exam. All biopsies and cultures were performed in the operating room with tissue samples sent for microbiology and pathology.

Results

- 23/28 patients were treated initially with Augmentin for mean of 41 days (range: 21-90)
- 12 (52%) individuals failed treatment and were taken to OR for biopsy and cultures
- 7 individuals + for MRSA (58% of non-responders)
- Clinical indicators do not differentiate MRSA from other pathogens
- Mean time to eradicate MRSA infection after diagnosis was 12 weeks (range: 6weeks-16weeks)
- Antibiotic of choice was Bactrim (Doxycycline used for sulfa allergy)
- All patients treated initially with Bactrim responded without relapse (range: 3-weeks-16weeks)

Discussion

MRSA laryngitis was first described in 2002 and 7 cases have been reported in the literature to date. The results of our study suggest MRSA laryngitis may be more prevalent than previously thought. At least 25% of this study population had biopsy proven MRSA. Unfortunately, MRSA laryngitis is clinically indistinct from laryngitis due to other bacterial pathogens although male gender, PPI treatment and smoking may be associated. Irrespective of the underlying pathogen, treatment requires a prolonged course of antibiotics. Given the increasing incidence of MRSA laryngitis and 52% relapse with Augmentin therapy, initial empiric treatment of chronic bacterial laryngitis with Bactrim is proposed with initial promising results.

Conclusions

A significant proportion of chronic bacterial laryngitis patients have MRSA as the underlying pathogen. Based on the results of the study, a treatment algorithm for management of this unusual patient population is suggested.

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References