Sarcoidosis is a granulomatous disease that affects multiple organ systems. It is most commonly diagnosed in young adults ages 20-40 and is more prevalent in the African-American population. The exact etiology is unknown and is considered multifactorial. Prevalence of sarcoidosis ranges from 10-35/100,000, while laryngeal involvement occurs in 0.5-8.3% of patients. Bilateral TVC paralysis has been reported in few cases in the literature.

Case Report

A 49-year-old African American female presented to the emergency department with a two day history of progressive dyspnea and inspiratory stridor. Over the previous five months, the patient had been evaluated at an outside facility for chronic cough. Workup included a CT scan of the chest which revealed subcarinal lymphadenopathy. Subsequent biopsy via endobronchial ultrasound (EBUS) revealed no evidence of malignancy or granulomatous disease. At the time of our examination, the patient had bilateral TVC paralysis on flexible laryngoscopy and moderate respiratory distress requiring a tracheostomy. An EBUS at our institution revealed no evidence of malignancy or mediastinal lymphadenopathy, which may also necessitate a tracheostomy. Laryngoscopy classically reveals edematous, elevated, and pale mucosa found in the following sites in decreasing order: epiglottis, arytenoids, aryepiglottic folds, vestibular folds, and subglottis. Immobility of the vocal cords may occur by impairment of the vagus nerve via compressive lymphadenopathy or neurosarcoidosis or direct fixation by sarcoidomatous infiltration. Laryngeal EMG may be beneficial in elucidating the cause of immobility. As in our case, a normal EMG suggests direct infiltration rather than neural involvement. Chest imaging often reveals mediastinal lymphadenopathy, which may also cause vocal cord fixation via compression of the vagus nerve. While laboratory evaluation is typically unrevealing, hypercalcemia or elevated angiotensin converting enzyme (ACE) levels may be elevated. Biopsy of affected lymph nodes via EBUS or video-assisted thoracic surgery (VATS) reveals noncaseating granulomas on histology. Other granulomatous diseases and malignancy should be excluded. Treatment typically consists of systemic corticosteroids, although other systemic therapies including cytotoxic agents may be offered. Intrathoracic steroid injection as well as surgical resection of problematic lesions of the larynx or mediastinal lymph nodes have also been described.

Conclusions

- Sarcoidosis with laryngeal involvement is infrequent, with immobility of the vocal cords a rarely associated clinical finding.
- Sarcoidosis may cause vocal cord paralysis via compression of the vagus nerve from mediastinal lymphadenopathy, neurosarcoidosis affecting the vagus nerve, or direct laryngeal involvement.
- Vocal cord paralysis may be the presenting symptom of sarcoidosis and remains an important consideration for the otolaryngologist’s differential diagnosis.

References