ABSTRACT

Educational Objective: Describe the microbiology, clinical course, and treatment of complications of acute otomastoiditis in patients immunosuppressed due to solid organ transplant

Background: There are over 183,000 patients living with a functioning solid organ transplant in the United States, and almost no data exist discussing complications of acute otomastoiditis in this vulnerable population. Early recognition and treatment of acute otomastoiditis is essential in patients whose immune system is not normal, as progression can lead to sepsis, meningitis, brain abscess, Bezold’s abscess, sigmoid sinus thrombosis, or other potentially fatal sequelae.

Methods: Case report with extensive literature review.

Results: A 63-year-old man presented 3 years after cadaveric renal transplant with ototympanometry and altered mental status. His acute otitis media progressed to meningitis with sigmoid sinus thrombosis and sepsis, within 24 hours of arrival at our institution. Given his deteriorating clinical course despite IV and otic antibiotics, neurosurgical consultation was obtained and cortical mastoidectomy was performed. The patient made a full recovery without residual neurologic deficit.

Conclusion: Extrapolating data from patients immunosuppressed for other reasons, patients immunosuppressed after solid organ transplant should receive prompt recognition and aggressive treatment of acute otomastoiditis is essential to prevent or address potentially devastating intracranial or systemic complications.

INTRODUCTION

Immunocompromised states, whether inherited or acquired, often times lead to infectious complications. The congenital and acquired syndromes that cause immune system dysfunction result in a variety of clinical manifestations depending on the exact cell line involved. These clinical manifestations include both opportunistic infections as well as advanced, aggressive presentations of diseases common in the general population. Organ transplant recipients are a significant patient population in which the infectious complications resulting from immunosuppression are encountered. Although neoplastic processes also occur, infection plays a significant role in the mortality and morbidity in this population. A significant portion of these infections arise in the head and neck, and timely recognition and treatment are important to preventing progression of disease. More specifically, otomastoiditis, when occurring in immunosuppressed patients, has the potential to progress to serious, life-threatening intracranial complications including meningitis, intracranial abscess, and lateral sinus thrombosis. It is the goal of this paper to demonstrate the importance of recognizing otomastoiditis, understanding its etiology, and quickly treating the disease to manage and prevent the advanced stages of infection in solid organ transplant patients.

REFERENCES


RESULTS

Intracranial spread of otogenic infection has been shown to have a mortality rate of 5-25%. Most commonly, intracranial involvement presents as meningitis, however, abscess, lateral sinus thrombosis, and otic hydrocephalus are all possible sequelae of uncontrolled disease. Antibiotics play a crucial role in preventing these complications in the general population, and have decreased the incidence of intracranial spread from 2.3% to 0.24% since their clinical use began in the 1930’s and 40’s. Although treatment strategies are somewhat controversial, some believe surgical treatment is usually necessary after medical management has failed to bring about significant improvement within 48 hours. Watchful waiting for the effects of medical therapy may not be the optimum plan of action in a patient with a weakened immune system. Antibiotics along with immunosuppression may mask the symptoms of disease progression by lessening the inflammatory response mounted in the presence of intracranial spread. With this in mind, the combination of antibiotic therapy and early surgical treatment should be strongly considered in management of acute otomastoiditis in the immunosuppressed patient. Additionally, it has been shown that a significant number of cases of otomastoiditis could be attributable to presence of a cholesteatoma and chronic suppurative otitis media. Surgical intervention is typically needed when definitively treating both of these conditions, therefore, early surgery in immunocompromised individuals may not only provide a cure for a current infection, but may also serve to prevent further complications due to chronic middle ear disease.