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CASE REPORT

A rare cause of Ludwig's angina by *Morganella morganii*

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KEYWORDS
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Summary Ludwig's angina is a rapidly spreading and potentially lethal infection involving the floor of the mouth and neck. We present a rare case of Ludwig's angina caused by an unusual microorganism, *Morganella morganii*, and the group D α-hemolytic streptococcus. To our knowledge, this is the first case of Ludwig's angina and deep neck infection caused by *Morganella morganii*. Adequate airway maintenance, appropriate use of antibiotics and surgical drainage resulted in survival of the patient without complications.

Introduction

Ludwig's angina is caused by a rapidly progressing cellulitis of soft tissues of the neck and floor of the mouth with posterior displacement of the tongue potentially obstructing the airway.[1] Effective diagnosis and treatment are based on early recognition of the clinical process, airway protection, formal surgical drainage, followed by appropriate use of parenteral antibiotics according to bacterial culture from drainage material, though computed tomographic (CT) studies help determine the extent of infection, especially when there is abscess formation and surgical drainage may be necessary.[2] In this report, we describe a case of Ludwig's angina caused by a rare microorganism *Morganella morganii*. The bacteriology and the choice of antibiotic are discussed.

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Case report

A 71-year-old male presented to the emergency department with sore throat, dysphagia, odynophagia of 1-week duration. Physical examination revealed saliva drooling, slight dyspnea, with marked swelling of tongue and bilateral submandibular regions (Fig. 1a), which looks like ''double tongues'' (Fig. 1b). He was unable to open his mouth well or to take solids and only liquid diet was tolerated. He was afebrile and not cyanotic. There was no stridor or signs of upper airway obstruction. The initial white cell count was 11450/ml with a left shift, and C-reactive protein (CRP) was 3.455 mg/dl (normal range $<$0.800). Although pulse oximetry showed 97% oxygen saturation on room air, supplemental oxygen at 4 l/min via nasal cannula was given. Inhaled 0.5 ml of adrenaline (0.5 ml of 1:1000 diluted to 5 ml of 0.9% saline) was also given. Intravenous clindamycin 600 mg every 6 h and 80 mg of gentamicin every 8 h after

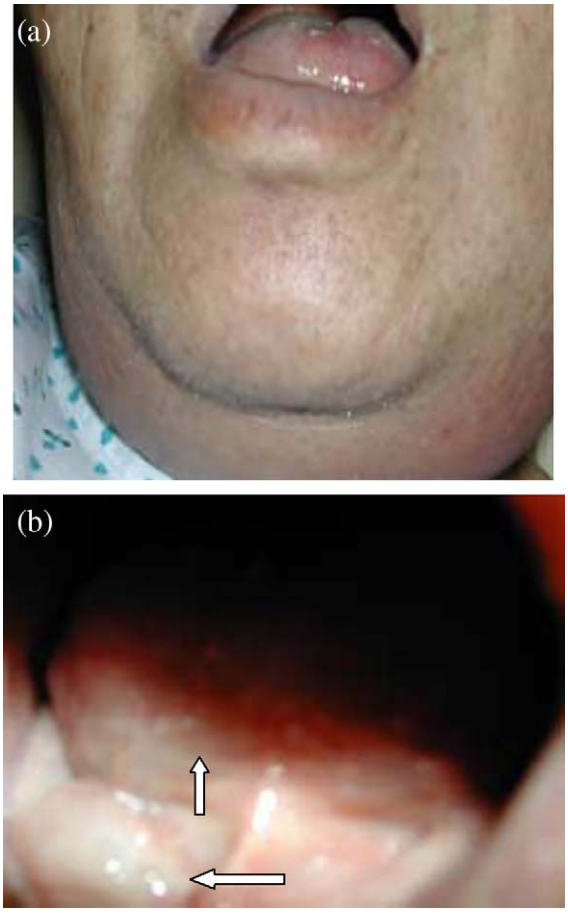

Figure 1 (a) Bilateral neck swelling and inflammation of tongue. (b) Swelling of the floor of the mouth which looks like ''double tongues'' (horizontal arrow).

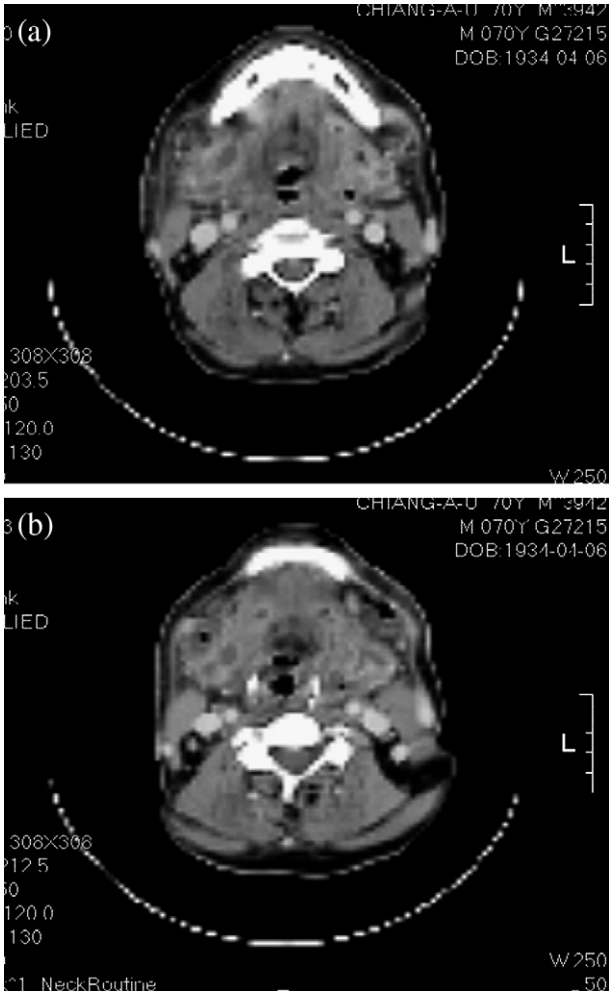

Figure 2 (a,b) CT scan of the neck demonstrated multiple heterogeneous hypodense lesions with ring enhancement by contrast over bilateral submandibular and parapharyngeal spaces.

two sets of blood cultures and aspirated pus culture were obtained. Emergent CT scanning of the neck demonstrated multiple heterogeneous hypodense lesions with ring enhancement by contrast over bilateral submandibular and parapharyngeal spaces (Fig. 2a and b). Ludwig's angina and deep neck abscess secondary to a dental infection was impressed. On the same day, the patient received incision and drainage procedure under general anesthesia and tracheotomy was performed to ensure adequate airway. His symptoms subsided and the neck swelling resolved gradually postoperatively. Two sets of blood cultures at the emergency department showed negative up to 7 days, but pus culture yielded both group D α-hemolytic streptococcus and *Morganella morganii* from the subculture. He was discharged 9 days later without complications and received 400 mg of