

***Aggregatibacter Actinomycetemcomitans* causing empyema necessitans and intramuscular abscesses in an immunocompetent patient**

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Introduction: Empyema necessitans, a relatively rare entity, is a pyogenic infection extending directly from the pleural cavity to the overlying subcutaneous tissue to form a mass in the chest wall. Several pathogens have been reported to cause this infection, including but not limited to Mycobacteria, Nocardia, and Actinomyces. We present a patient who developed empyema necessitans due to *Aggregatibacter* (formerly *Actinobacillus*) *Actinomycetemcomitans* likely from aspiration in the setting of periodontitis and complicated by a right triceps brachii abscess and a left posterior thigh abscess; a few patients with similar infections have been previously reported.

Case Presentation: A 57-year-old HIV-negative Haitian gentleman with poor oral dentition presented with a right triceps brachii abscess for which he underwent debridement. Tissue cultures grew *Aggregatibacter Actinomycetemcomitans*. He received two doses of intravenous vancomycin and was not continued on antibiotics upon discharge. One month later, he presented with fever, cough and a painful and erythematous right upper chest wall mass that had been enlarging over the past two weeks. Imaging revealed right pulmonary consolidations with extension of infection into the right pectoralis muscle (Figure 1) consistent with empyema necessitans. He underwent debridement of the abscess and partial rib resection. Tissue cultures again grew *Aggregatibacter Actinomycetemcomitans*. He also developed a left posterior thigh abscess, which was debrided. Review of the computed tomography imaging of his right upper extremity from his previous admission a month earlier revealed that right pulmonary consolidations were present suggesting that his abscesses had originated from a primary lung infection. He was treated with oral amoxicillin-clavulanate for 6 weeks with resolution of his infected sites.

Discussion: Empyema necessitans is a relatively rare clinical entity in which the empyema extends through the parietal pleura into the adjacent soft tissue and musculature of the chest wall. It usually occurs due to inadequate treatment of a primary lung infection. *Aggregatibacter* (formerly *Actinobacillus*) *Actinomycetemcomitans* is a facultative anaerobic gram-negative coccobacillus that is part of the normal oral flora. Infections due to this organism usually result from aspiration in conjunction with dental disease or trauma to the oral mucosa resulting in pneumonia or empyema. It often coinfects with actinomyces and is known to cause empyema necessitans in pediatric populations with four cases reported in the literature. Cases of monomicrobial empyema necessitans due to *Aggregatibacter Actinomycetemcomitans* in adults have rarely been reported. It is often resistant to penicillin, vancomycin, and clindamycin; and there is no consensus as of yet regarding the antibiotic of choice. Previous reports indicate successful treatment with cephalosporins and beta-lactams. Invasive infections due to this organism

require treatment with long-term antibiotics and surgery to drain any suppurative collections.

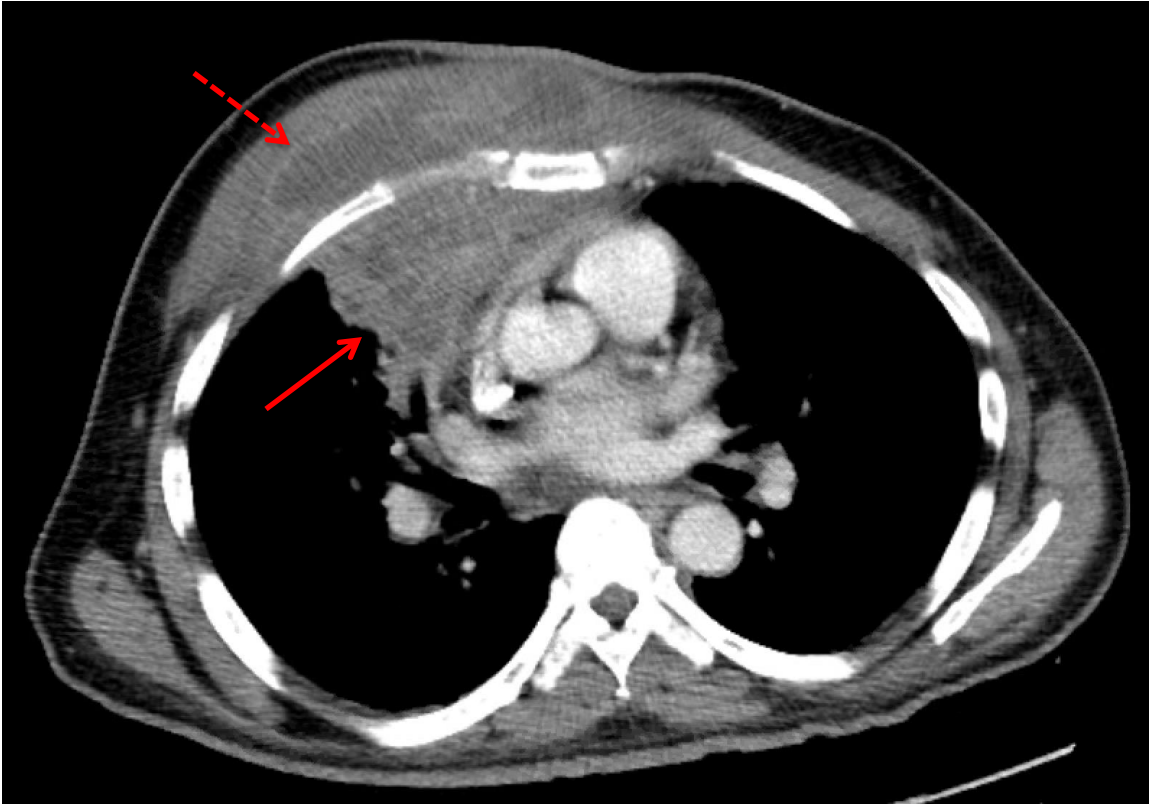


Figure 1. Computed tomography with contrast of the chest showing abscesses in the right lung (solid arrow) with extension through the pleura and into the soft tissue and musculature of the right chest wall (dashed arrow).