

### **ANOTHER REASON TO VISIT YOUR DENTIST REGULARLY.**

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A 75-year-old man with a history of ischemic stroke without residual deficits, elevated prostate specific antigen, iron-deficiency anemia with guaiac-positive stool, and a dental extraction six months earlier presented to the emergency department with progressively worsening right-sided weakness and delirium over the past 48 hours. The patient was hospitalized four months earlier for fever, hemoptysis, and leukocytosis. Chest roentogram was significant for a 7 x 7 centimeter opacity in the left lower lobe. Follow-up chest CT scan revealed a soft tissue density in the left lower lobe measuring 8 x 9 centimeters and a 1.5 x 1.5 centimeter nodule in the right upper lobe with unremarkable abdominal and pelvic CT scans. An exophytic endobronchial lesion was noted in the superior segment of the left lower lobe on bronchoscopy. While culture and biopsy samples were non-diagnostic, the patient's symptoms had improved with amoxicillin/clavulanate. Cytologic evaluation revealed granulation tissue with a pyogenic granuloma without malignant cells.

On physical exam, the patient was afebrile and intermittently delirious with a right-sided lower facial droop and right-sided weakness. Laboratory studies were unremarkable. A head CT scan revealed a 1.5 centimeter lesion with vasogenic edema. On brain MRI, a ring-enhancing lesion in the left lentiform nucleus was noted. Cultures from brain biopsy grew extensive filamentous gram-positive organisms compatible with *Actinomyces*. A review of cultures previously obtained during bronchoscopy was notable for heavy growth of *Actinomyces*.

Central nervous system actinomycosis is a rare infection that typically presents as a brain abscess. These infections usually result from hematogenous spread from a pulmonary or abdominal source. *Actinomyces* is a common saprophyte of the oral cavity, pharynx and intestine; therefore recovery of *Actinomyces* does not necessarily establish the presence of infection unless cultures are obtained by aspiration of a closed lesion. The normal commensal status of *Actinomyces* is altered when the organism penetrates into deeper tissues through a break in mucous membranes. Obtaining a detailed history including the risk factors for actinomycosis such as dental caries, oral infections, and recent tooth extractions is important as delay in diagnosis and treatment may result in serious neurologic sequelae in half and death in 25% of patients. A prolonged course of Penicillin G remains the drug of choice and can result in complete resolution of neurologic complications if initiated promptly.