PULMONARY ACTINOMYCOSIS: A RARE ROUTE FOR SPREAD OF INFECTION

Hanna A. Dawood, MD, LLB, Inna Naroditsky, MD, Ludmila Guralnik, MD
Rambam Health Care Campus, Haifa, Israel

Introduction: Actinomyces are gram positive bacteria belonging to the family Actinomyceataceae. Pulmonary actinomycosis is a rare but important diagnosis to make. It accounts for around 15% of all forms of human actinomycosis. It is commonly confused with other chronic lung diseases, lung abscess, tuberculosis or malignancy. The diagnosis of actinomycosis is based on the bacteriological identification of Actinomyces from a sterile body site. However, isolation and identification of these bacteria occur only in a minority of cases.

Case Presentation: A 70-year-old woman with history of type 2-diabetes mellitus presented to our institute for the investigation of chronic cough with episodes of hemoptysis in the recent month, without fever. Four years prior to the current symptoms, she underwent laparoscopic cholecystectomy. Since then, she suffers from a chronic Peritoneo-cutaneous fistula due to leftover stones. Vital signs were normal. Decreased breathing sounds above the right lung were noted. A right flank small fistula opening with pus secretion was noted. CT scan revealed a right lower lobe consolidation with pleural effusion (figure 1).

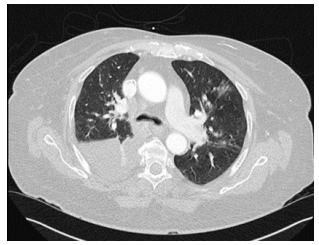

Figure 1: CT scan at presentation

Cultures from abdominal secretion and pleural effusion were negative. Transbronchial biopsy was obtained. The histological examination showed bronchial respiratory epithelium with chronic inflammation. In addition, colonies of actinomyces were seen (figure 2).

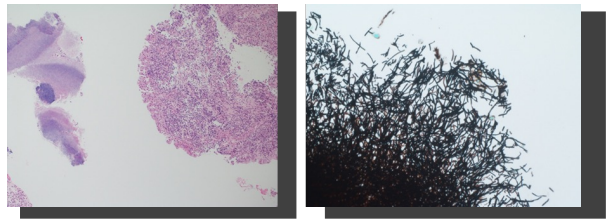

Figure 2:
Left: inflamed bronchial wall with actinomyces colonies (*sulfur granules)*
Right: Actinomyces colony. (silver stain x 600)

She was treated with IV ampicillin G for 6 weeks, followed by 4 months of oral amoxicillin. CT scan performed two months after the initiation of treatment, revealed a remarked irregularity of the right diaphragm in the area above the gallbladder bed, in juxtaposition to the culpable pleura, suggesting the existence of an abnormal abdominal–pleural pathway (figure 3). Follow-up 4 and 6 months after treatment showed complete resolution of hemoptysis and cessation of pus discharge through the peritoneo-cutaneous fistula. CT scan showed significant consolidation contraction and fibrosis of fistula tract (figure 4).

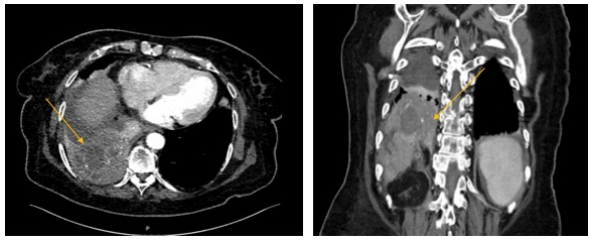

Figure 3: CT scan at 2 months

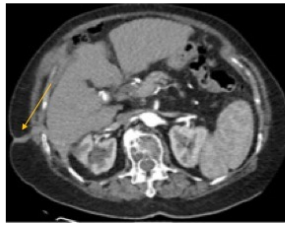

Figure 4: CT scan at 6 months

Discussion: Pulmonary actinomycosis is a rare medical condition. It usually affects patients with classic risk factors, such as oral and facial infections. Gram staining of pus and histological examination are critical for the diagnosis of actinomycosis, as they are usually more sensitive than cultures, which remain sterile in more than 50% of cases. Treatment consists of high doses of IV beta-lactam over 2–6 weeks, followed by oral penicillin or amoxicillin for 6–12 months.

Conclusions: Pulmonary actinomycosis should also be considered in patients with pulmonary consolidation and concomitant chronic abdominal or cutaneous infections. Other fashions of infections, such as abdominal-pleural dissemination, especially when a pleural effusion is present, are rare but possible. A microscopic pathology should be the preferred method for diagnosis.

References:
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