

中文題目：近似肺癌腦部轉移表現之 *Slackia exigua* 感染

英文題目：Slackia Exigua Infection Mimicking Lung Cancer with Brain Metastasis

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### Case presentation:

A 62-year-old male without known underlying disease presented in our out-patient department due to intermittent fever, productive cough with hemoptysis for 3 months. Body weight loss of 4 kg in 3 months was also noted. There were no fever, no night sweating or dyspnea. He smokes 2 pack per day for 40 years, and had regular “kaoliang liquor” (a strong liquor made of Sorghum bicolor, containing 50% alcohol) consumption about 350 ml per week, which seemed quite common in “Kimen”, a small island famous for growing Sorghum bicolor.

On physical examination, crackles with decreased breathing sound were noted over left upper lung field and also poor oral hygiene was noted. CXR revealed consolidation over left upper lung field, and further chest CT showed a cavitory mass lesion with irregular cavitory wall thickness and internal air fluid density.

He was then admitted for percutaneous sono-guided biopsy. Upon admission, his vital signs were stable without fever. Pancytopenia (WBC: 2200/ $\mu$ L with seg, Hb:7.9, plt: 147) and elevated CRP level (7.56mg/dL) were noted. On-site cytology of sono-guided biopsy revealed suspected cancer cells and hence brain MRI was arranged which revealed a 10 mm nodule with ring-enhancement at left anterior frontal lobe. Additionally, he also received bone marrow biopsy for pancytopenia which was compatible with myelodysplastic syndrome according to both pathology and clinical findings. He was discharged while pending lung pathology report.

Nevertheless, the patient readmitted again 6 days after discharge due to fever flare up again. Empirical antibiotics with ampicillin/sulbactam was given for suspected iatrogenic infection after biopsy, and the fever subsided 2 days after. The pathology report showed acute and chronic inflammation of lung parenchyma and the aspiration culture yielded *Slackia exigua*. For the fear of lung cancer complicated with lung abscess, bronchoscopic biopsy was done but still yield neither endobronchial lesion nor malignant cells by pathology.

Infection specialist was consulted and antibiotic was shifted to Ampicillin under the impression *Slackia exigua* lung abscess and brain abscess and was further shifted to clindamycin according to susceptibility test. Serial CXR showed improvement of lung lesion and subsequent brain MRI 3 weeks after treatment also disclosed regressive change of brain lesion. Under stable condition, antibiotics was shifted to oral clindamycin and he was discharged 1 month after receiving intravenous antibiotics treatment. We kept oral clindamycin treatment for another 2 months at OPD and follow up brain MRI at 6 months after treatment showed complete resolution of the brain abscess.

## **Discussion:**

Lung abscess is defined as necrosis of the pulmonary parenchyma caused by microbial infections. The most common organisms of lung abscess are anaerobic bacteria. The most common risk factors of forming a pulmonary abscess include aspiration from the mouth, stomach, bronchiectasis, history of alcohol abuse, and immunosuppression. In most cases, lung abscess is unilateral and singular. The most common location for lung abscess is posterior segments of the upper lobes and the superior segments of the lower lobes due to vomiting and aspiration in prone position. The chest CT with contrast enhancement is the most specific imaging modalities for diagnosis of lung abscesses. Lung abscess may contain only fluid or have a air-fluid level. The wall of the abscess is typically thick and the luminal surface is irregular. In lung cancer cases, tumors can have margins which are smooth, lobulated, or irregular and spiculated. They can be uniformly solid or can have central necrosis and cavitation. It is recommended to treat lung abscess with broad spectrum antibiotics, due to poly microbial flora, such as Ceftriaxone, piperacilin-tazobactam. For coverage of anaerobic microorganism, combination with Clindamycin can be considered.

In our case, smoking history of the patient and the location of the lesion is not typical for a lung abscess; therefore, lung cancer was considered first.

*Slackia exigua* was first classified as *Eubacterium exiguum* in 1996 and was reclassified as *Slackia exigua* in honor of microbiologist Geoffrey Slack in 1999. It is a Gram-positive, non-sporulating, anaerobic bacilli in the family of Coriobacteriaceae. *Slackia exigua* is considered as an oral microbiota which may cause intra-oral infections such as necrotic pulps, and periradicular lesions. It rarely causes extraoral infection.

Kawasuji et al. identified 10 *Slackia exigua* infection cases from 2004 through 2019 and the majority of diagnosis are bacteremia, empyema, and lung abscess. Others included periprosthetic joint infection, meningitis, mastoiditis, infectious endocarditis, and intra-abdominal infection. Antibiotics from amoxicillin/clavulanic acid, Ceftriaxone, Piperacillin/tazobactam to imipenem showed fair response of treatment. Most of the cases showed fair outcomes after abx treatment except for two patients with advanced rectal cancer and the drug user. Except three patients, other patients own predisposing factors such as drug user, rectal cancer, tracheostomy, cerebrovascular event with hemiplegia, poor diabetes control, type 1 diabetes mellitus with impaired renal function and diffuse large B-cell lymphoma. Poor oral hygiene was documented in 4 cases; others not mentioned.

In our case, the patient with underlying disease of myelodysplastic syndrome presented with neutropenia. This maybe the predisposing factor that cause infection by *Slackia exigua*. In our case, the brain and lung abscess resolved after three months of antibiotics treatment with one-month intravenous ampicillin and two-month oral clindamycin. Serial follow up of brain MRI after 3 weeks of antibiotics treatment and 6 months after treatment showed complete resolution.

**Conclusion:**

We present a case of *Slackia exigua*-associated lung and brain abscess. To our knowledge, this is the first report of brain abscess caused by *Slackia exigua*. Antibiotics treatment with ampicillin or clindamycin alone could be considered when encountering monomicrobial *Slackia exigua* brain and lung abscess. We should be careful of infections mimicking lung cancer when patients clinically presented as lung cancer with brain metastasis but without pathological evidence in biopsy. Especially in the patient with predisposing factors of malignancy, poor dental hygiene, or immunocompromised disease such as myelodysplastic syndrome. Also, we should be alert when *Slackia exigua* was yielded in specimen outside oral cavity; sometimes it mimics presentation of malignancy