

中文題目：胸腔念珠菌感染以感染性脊椎炎及椎間盤炎為表現之案例報告

英文題目：Pulmonary Candidiasis with Infectious Spondylodiscitis Presented with Lower Back Pain

作者：陳昱勳<sup>1</sup> 林明頡<sup>2</sup> 張永裕<sup>1</sup>

服務單位：<sup>1</sup>高雄醫學大學附設醫院內科部, <sup>2</sup>高雄醫學大學附設醫院一般科

**Introduction:** Fungal spondylodiscitis is a rare infection mostly found in immunocompromised patients, and could cause severe sepsis and neurologic symptoms. Only scarce literature in the past has reported that spinal fungal infection occurred as a complication of fungal pneumonia. To our knowledge, reported pathogens leading to both pulmonary and CNS (central nervous system) infection only include *Scedosporium apiospermum*, aspergillus, coccidioidomycosis, and *Pseudallescheria boydii*. Spinal fungal infection could also lead to severe sepsis with high mortality rates and prolonged hospital stay, which is critical in a clinical scenario. Herein we report a case of pulmonary candidiasis as a result of *C. albicans* infection, complicating spondylodiscitis, which was successfully treated by antifungals during a hospital course of 20 days.

**Case Presentation:** We documented a case of a 65-year-old male patient with type 2 diabetes mellitus, who suffered from extreme lower back pain and onset of fever, was diagnosed of spondylodiscitis, and was later correlated with pulmonary candidiasis. Spinal X-ray revealed cortical blurring over 11th thoracic spine, 12th thoracic spine, and 1st lumbar spine, which later thoracic-lumbar spine MRI (magnetic resonance image) confirmed spondylodiscitis from 6th to 12th thoracic spine with abscess formation. Invasive procedures for alleviation of spinal abscess were not done due to high risk suggested by specialists. Chest radiograph upon admission disclosed right lung infiltration, however responded poorly to antibiotics, thus bronchoscopy was later done for further survey, and transbronchial biopsy disclosed *Candida albicans* infection. Fungal treatment of pulmonary candidiasis resulted concurrent resolution of pneumonia and low-back pain, consistent with fungal spondylodiscitis.

**Discussion:** Infectious spondylodiscitis is rare, with previous literature reported to occur at a rate less than 0.1%, and fungal infections consist of around 0.5% of infectious spondylodiscitis. Pulmonary candidiasis complicated with spinal fungal infection is even rarer, with only few reported cases in known literature. We report a patient presenting with severe lower back pain and right lung infiltration, which spine MRI (magnetic resonance image), transbronchial biopsy were performed, and discharged with health status after antifungal treatment. Candidemia is known to have a higher prevalence in immunocompromised patients, which in our case, a type 2 DM patient with poor blood sugar control. Microorganisms infecting the spine originating from other locations are often translocated from the bloodstream. Blood cultures in infectious spondylodiscitis do not always yield positive findings in reported literature, which blood culture did not yield fungus in our case. In previous literature, invasive fungal infection, such as pulmonary candidiasis and infectious spondylodiscitis is scarce in healthy population. A ten year-retrospective study of fungal

spondylodiscitis in France resulted in no pulmonary candidiasis recorded as a source of spinal fungal infection, and concluded that vertebral candidiasis is health related. Some patient groups were reported to have a higher risk leading to spinal fungal infections, regarding immunocompromised patients, drug abusers, and in our case, diabetes mellitus patients with poor blood sugar control. Drowning, exposure to sewers, even in healthy patients, may lead to fungal infection not only in the respiratory tract, but also CNS sites have also been reported as well. Previous documented literature yielded 4 different pathogens regarding fungal pneumonia complicating infectious fungal CNS infection or osteomyelitis, and spinal infections. The pathogens were *Scedosporium apiospermum*, *Aspergillus fumigates*, coccidioidomycosis, and *Pseudallescheria boydii*, respectively. Our patient presented with pulmonary candidiasis with *Candida albicans* infection associated with fungal spondylodiscitis, which has not been documented in known literature.

Spinal MRI and lumbar spine radiograph are handy tools and should not be hesitated for use once spinal infection is suspected. Signs in radiography specific to spinal infection should be carefully surveyed and aggressively treated. Meanwhile, other common infections, such as pneumonia, should also be surveyed and treated simultaneously.

**Conclusion:** Candidiasis involving multiple sites, in our case the lung and the spine, should be kept in mind when it comes to patients who are immunocompromised even without presenting with typical signs of infection.