

A STUDY ON THE TREATMENT OF PATIENTS WITH PULMONARY NON-TUBERCULOUS MYCOBACTERIAL INFECTION USING THE NICE SCORING SYSTEM

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Abstract [Purpose] Chest radiographs of patients with pulmonary non-tuberculous mycobacterium (NTM) infection were analyzed using an image scoring method (NICE scoring system), by comparing the difference in bacterial discharge and hemoptysis with a control group; the relation between the chest radiographs and the treatment initiated was studied.

[Subject and Method] Non-tuberculous mycobacteria were detected in sputum and bronchial lavage samples of 282 patients between January 2013 and December 2015. Chest radiographs of 152 patients with a definitive diagnosis of pulmonary NTM were analyzed using this system. The relation of the score of each NICE component and the total score with the treatment introduction rate, bacterial discharge rate, and presence of hemoptysis was analyzed.

[Results] Existence of cavity ($p < 0.001$), bacterial discharge amount $\geq 2+$ ($p = 0.003$), hemoptysis ($p = 0.037$), age ($p < 0.001$), and gender ($p = 0.044$) were factors associated with treatment introduction in pulmonary NTM infection. The total score was 20.48 in the treatment introduction group, 11.75 in the control group, and 14.96 overall. NICE score was significantly higher in the treatment introduction group ($p < 0.001$). High amount of bacterial discharge and hemoptysis symptoms led to a higher NICE score ($p < 0.001$). By logistic regression analysis, age ($p < 0.001$), existence of cavity ($p = 0.015$), and NICE score ($p = 0.001$) were significant

factors associated with treatment introduction.

[Discussion] A significant relation was observed between the radiograph, bacterial discharge amount, and hemoptysis; we can posit that the NICE score satisfactorily reflects the clinical picture and the system was efficient as an image scoring method.

[Conclusion] Image evaluation using the NICE scoring system was performed for pulmonary NTM patients. Age, existence of cavity, and NICE score were significant factors associated with treatment introduction. The total score showed a tendency to be higher in patients in the treatment introduction group and in those with more bacterial discharge and hemoptysis.

Key words: Nontuberculous mycobacteria, NICE scoring system, Image findings, Amount of bacteria discharged, Hemoptysis

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— Case Report —

A CASE OF TUBERCULOUS KNEE ARTHRITIS DIAGNOSED
WITH TUBERCULOUS PLEURISY

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Abstract: A 74-year-old male took a JAK inhibitor for myelofibrosis and prednisolone for idiopathic organizing pneumonia. Subsequently, he presented to an orthopedic clinic with a fever (37°C) and right knee joint pain; nevertheless, a diagnosis could not be established, and he was treated only for symptoms. After 4 months, he experienced respiratory difficulty because of left pleural effusion and was admitted to our hospital. We suspected tuberculous pleurisy from pleural effusion and positive IGRA. Thus, a parietal pleural biopsy was performed by thoracoscopy under local anesthesia; however, only nonspecific, inflammatory findings exhibiting lymphocyte-based inflammatory cell infiltration were obtained. Therefore, a definitive diagnosis was not obtained. As we also considered a possibility of combined extrapulmonary tuberculosis, an orthopedic surgeon was requested to perform knee joint synovial biopsy. Pathological findings of the biopsy suggested tuberculosis because of the presence of inflammatory cell infiltration, primarily lymphocytes, caseous necrosis, and Langhans giant cells. After we initiated

anti-tuberculous drug treatment, his symptoms considerably improved. Later, *M.tuberculosis* was identified from the cultures of pleural effusion, parietal pleura, and knee joint synovial tissue. Here, we report a rare case of tuberculous knee arthritis with a complication of tuberculous pleurisy.

Key words: Extrapulmonary tuberculosis, Tuberculous knee arthritis, Tuberculous pleurisy, Thoracoscopy under local anesthesia

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Case Report

A CASE OF CHRONIC EMPYEMA DUE TO *MYCOBACTERIUM AVIUM*
WITHOUT PULMONARY INVOLVEMENT

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Abstract: A 79-year-old female with an abnormal chest shadow was referred to our hospital for further evaluation. She was diagnosed with lung tuberculosis at 13 years of age and administered artificial pneumothorax therapy and pleural decortication. Chest radiograph and computed tomography (CT) at the first visit revealed empyema in the left lung. She was followed without further examination or therapy because of her good general health status. Six months later, she presented with productive cough, and worsening of empyema was observed by chest CT. CT-guided transcutaneous fine needle aspiration revealed *Mycobacterium avium* in the fluid aspirated from the empyema. She was initiated on chemotherapy with rifampicin, ethambutol, and clarithromycin, which was followed by the development of gastrointestinal symptoms and appetite loss; therefore, chemotherapy was discontinued. As her respiratory symptoms exacerbated, she was referred to Fukuji Hospital. She was administered a three-drug regimen including sitafloxacin, ethambutol, and clarithromycin. A subcutaneous abscess developed and worsened during the treatment, then open drainage without a catheter was required. Surgical treatment facilitated thoracostomy, and her clinical symptoms and chest X-ray findings gradually improved. Then she was able to continue the three-

drug regimen including sitafloxacin, ethambutol, and clarithromycin. We herein report our experience in such a chronic *M. avium* empyema case administered both drug therapy and thoracostomy that has rarely been examined.

Key words: Nontuberculous mycobacterium, *Mycobacterium avium*, Chronic empyema, Open window thoracostomy

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