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Original Article

REVIEW OF PULMONARY *MYCOBACTERIUM XENOPI* INFECTION CASES: 11 CASES OF OUR OWN AND 18 OTHER CASES REPORTED IN JAPAN

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Abstract [Objective] To investigate clinical features of patients with pulmonary *Mycobacterium xenopi* infection treated at our hospital.

[Subjects and Methods] We diagnosed 11 cases of *M. xenopi* infection at Tokyo National Hospital between 2000 and 2008 and recorded the drug susceptibility, patient characteristics, radiographic findings, treatments given and clinical courses. Eighteen other Japanese cases from the literature were discussed along with our findings.

[Results] The cases of *M. xenopi* infection at our hospital consisted of 10 men and l woman with a mean age (±SD) of 55.1±19.4 years. Among the patients, 10 were smokers, 4 were heavy drinkers, and 6 had sequelae of pulmonary tuberculosis as an underlying disorder. Four patients had chronic obstructive pulmonary disease and 2 had diabetes mellitus, while there were 2 patients who had no underlying disease. All cases had radiographic opacities, predominantly found in the upper lung region, and cavernous lesions. These findings were demonstrated in both lungs in 5 patients, in the right lung only in 5 patients and in the left lung only in l patient. Concurrent aspergillosis was observed in 8 patients. The bacterial isolates from 7 cases were tested for drug sensitivity to levofloxacin (LVFX) and were found to be susceptible. *M. xenopi* disease was treated in 5 cases with INH+RFP+EB, in 2 cases with INH+RFP+Clarithromycin (CAM), and in l case with RFP+EB+CAM. Concurrent aspergillosis was treated with itraconazole in 2 cases. One patient underwent surgery for lung cancer. The duration of treatment was 16.4 ±12.8 months (range, 4-36 months). The radiographic findings were improved in 4 cases, deteriorated in 2 and unchanged in 5. *M. xenopi* was eradicated bacteriologically in 6 cases. The combination of radiographic and bacteriological findings indicated improvement in 3 cases, no change in 6 and deterioration in 2.

[Discussion] The review of our cases disclosed that medical treatment alone was not sufficient in most cases for the control of clinical *M. xenopi* infection as reported overseas. Although we did not use LVFX for treatment, LVFX might be recommended for the treatment since all isolates tested proved to be susceptible to LVFX.

Key words: Non-tuberculous mycobacteriosis, *Mycobacterium xenopi*, Pulmonary aspergillosis, Levofloxacin

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Original Article

CLINICAL INVESTIGATION AMONG ELDERLY PATIENTS WITH TUBERCULOSIS

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Shunsuke SHOJI, Akira HEBISAWA, and Yutsuki NAKAJIMA

Abstract [Objectives] We discussed the factors which may confuse diagnosis and treatment of tuberculosis (TB) in elderly patients, in order to improve the situation.

[Subjects and Methods] 414 patients who were hospitalized for active tuberculosis in Tokyo National Hospital were divided into three groups according to their ages (in years) : less than 65, 65 to 74, and greater than 75. The three groups were compared in terms of performance status (PS), serum albumin level (whether over 3 g/d*l* or not), underlying diseases, symptoms at onset, sputum smear findings for acid-fast bacilli, presence or absence of cavitary lesion, regimen of treatment, adverse reaction to medications, and treatment outcome.

[Result] The older group had significantly poorer PS (3 or 4), lower albumin level, more complications, a larger proportion of non-respiratory to respiratory symptoms, less cavity formation, less likelihood of continuing to take drugs regularly and higher mortality. It is supposed that these characteristics are mostly due to the aging itself.

[Conclusion] Diagnosing and treating active tuberculosis among elderly people is difficult because of nonspecific and thus confusing findings due to other diseases or aging. Delay in diagnosis and start of treatment makes prognosis of their TB poorer. To improve this situation we should keep a high index to TB and make better use of novel diagnostic technologies. For satisfactory treatment that allows maintenance of a high level of activity of daily life, it is necessary to pay more attention to such aspects as nutrition and rehabilitation and to offer appropriate supports.

Key words : Elderly patients with tuberculosis, Aging, Performance status, Hypoalbuminemia, QFT positive rate

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Review Article

CONTROL OF CATTLE TB IN JAPAN

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Abstract Traditional food custom of Japan changed after the opening of the country in late 19th century, and habit of eating beef and of drinking milk was introduced, and the control of cattle TB had become one of major topics of veterinary medicine in Japan. Old tuberculin (OT) prepared by Koch R in 1890 initially intended to cure TB, however, it was found ineffective against TB, while local and general reactions after the introduction of OT were found to be useful to detect TB infection, and OT was first applied in veterinary medicine to detect TB infection in cattle.

Cattle TB Control Law was legislated in Japan in 1901, and cattle was subjected to health checking including tuberculin test, and TB cattle had to be slaughtered, and TB suspects had to be isolated. Several trials had been done to improve the implementation of the Law by increasing the number of experts in health checking of cattle including tuberculin test and compensation for cattle slaughtered during isolation, and they were partly achieved in the revision of the Law in 1933. However, no marked progress was achieved up to 1945 because of war conditions.

In 1948 during the occupation period by the US, tuberculin test method was changed to intradermal skin test method by the strong recommendation of the GHQ, and some lawsuits were raised to slaughter cattle based on tuberculin positive reaction by the newly introduced intradermal method. Autopsy was done for slaughtered cattle due to tuberculin positive test results, and as shown in Table 1, TB lesions were found in the majority of autopsied cattle, and thereafter, no more lawsuits were raised.

Annual examination including tuberculin test has been continued hard thereafter, and as shown in Fig. 3, the prevalence of TB cattle has dropped down rapidly, and only one or few TB cattle were found by the annual examination, and TB has been nearly eliminated from cattle in Japan. The efforts made by those engaged in the fight against TB in cattle in Japan were highly appreciated.

Key words: Cattle TB Control Law, Tuberculin test, Cattle TB

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Case Report

A CASE OF TUBERCULOUS PLEURISY WITH TRANSIENT NEW INTRA-PULMONARY LESIONS DURING ANTI-TUBERCULOSIS THERAPY

Kazumi NISHIO, Shinji AIDA, Yasushi NAKANO, Ken OKABAYASHI, and Hisato SHIMADA

Abstract A 24-year-old man who had been treated 3 months for tuberculous pleurisy presented with thoracic back pain. Chest CT showed a new lesion abutting the pleura, despite the disappearance of pleural effusion. Two weeks later, the mass abutting the pleura progressed to form a new intra-pulmonary infiltrative shadow. A transbronchial lung biopsy was performed and the histopathologic examination of the specimen from this lesion revealed granulomatous inflammation without caseous necrosis or acid-fast bacilli. No acid-fast bacilli were cultured from the bronchoalveolar lavage fluid. Anti-tuberculosis medication was continued without change, and the lesions finally resolved. More than 3 years have passed since the completion of anti-tuberculosis chemotherapy, and no recurrence has been observed. We believe that these lesions were pulmonary tuberculomas and transient intra-pulmonary infiltration due to non-specific inflammation, caused secondarily by an excessive immune response, as in paradoxical worsening.

Key words: Tuberculous pleurisy, Pulmonary tuberculoma, Infiltrative shadow, Paradoxical worsening Transbronchial lung biopsy

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Case Report

A CASE OF COLD ABSCESS OF THE CHEST WALL DUE TO THORACIC DRAINAGE FOR TUBERCULOUS PLEURITIS

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Abstract A 56-year-old man underwent thoracic drainage for two weeks for tuberculous pleuritis. He was put on anti-tuberculosis chemotherapy with INH (400 mg), RFP (450 mg), and EB (750 mg). Two months later, he developed an elastic hard subcutaneous mass in the area of the previous thoracic drainage. The mass was 10 cm in diameter, warm, reddish and painful. Chest computed tomography (CT) revealed localized and encapsulated empyema in the left thoracic space and a subcutaneous abscess with rim enhancement in the left lateral chest wall. Magnetic resonance imaging (MRI) demonstrated a dumbbell abscess in the subcutaneous tissue communicating with the empyema through the chest wall. A needle aspiration of the subcutaneous abscess had acid-fast bacilli smears of 2＋ and tested positive by polymerase chain reaction (PCR) for *Mycobacterium tuberculosis*. Thus, he was diagnosed with a cold abscess of the chest, with the empyema in the thoracic space draining into the chest wall through the cut for artificial drainage. Continuation of the anti-tuberculosis treatment and the drainage of the empyema with repeated aspiration reduced the subcutaneous mass, and the clinical and radiological course was favorable. Both the smear and culture for acid-fast test became negative. After completion of chemotherapy, there has been no disease recurrence.

Key words: Tuberculous pleuritis, Chest wall tuberculosis, Cold abscess of the chest wall, Subcutaneous abscess, Chest drainage

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Case Report

A CASE OF MULTIDRUG-RESISTANT TUBERCULOSIS WHO ACQUIRED ADDITIONAL RESISTANCE TO ETHAMBUTOL BEFORE THE RESULT OF THE INITIAL DRUG SENSITIVITY TEST WAS REPORTED

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Abstract On December 6, 2008, a 52-year old man presented to a clinic with chronic cough, sputum, and chest discomfort, which had lasted since mid-November. Since the chest radiograph showed a small cavity with small nodules and granular shadows, he was referred to another hospital. On TB-PCR, the gastric juice was positive. Therefore, on December 16, 2008, treatment for pulmonary tuberculosis was initiated with isoniazid, rifampicin, ethambutol, and pyrazinamide. However, on February 4, 2009, a drug susceptibility test revealed that the bacilli were resistant to isoniazid and rifampicin. Therefore, he was referred to our hospital. At that time, he had no symptoms and his sputum smear was negative. We performed a right upper lobectomy. The smear result of the surgical specimen was heavily positive (equivalent to Gaffky 6), and the drug susceptibility test showed resistance to ethambutol in addition to isoniazid and rifampicin. After surgery, we treated him with pyrazinamide, streptomycin, para-aminosalicylate, ethionamide, and levofloxacin.

We report this case of multidrug-resistant tuberculosis without past treatment who acquired additional resistance to ethambutol during the first 2 months of chemotherapy. When treating multidrug-resistant tuberculosis, very careful consideration of susceptibility to other drugs is warranted.

Key words: Multidrug-resistant tuberculosis, Drug susceptibility test, Acquired drug resistance

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