

## VNTR CONSISTENCY RATE WITH RESPECT TO AGE BETWEEN SECONDARY AND INDEX CASES IN CONTACT INVESTIGATION FOR TUBERCULOSIS

<sup>1,2</sup>Kenji MATSUMOTO, <sup>1</sup>Sayuri YAMADA, <sup>1</sup>Jun KOMUKAI, <sup>1</sup>Yuko TSUDA, <sup>1</sup>Rie AOKI, <sup>1</sup>Naoko SHIMIZU, <sup>1</sup>Maiko ADACHI, <sup>1</sup>Miho TAKEGAWA, <sup>1</sup>Tetsuya KURATA, and <sup>1</sup>Yumi IKEDA

**Abstract** [Purpose] To analyze the variable numbers of tandem repeats (VNTR) in patients with tuberculosis for adequate contact investigation.

[Methods] Among patients suspected to be secondary cases in contact with tuberculosis patients newly registered between 2007 and 2015, the subjects were those in whom the VNTR was investigated in parallel with index cases. The main survey items consisted of the VNTR consistency rate between secondary and index cases, state of contact, secondary cases' age, and interval from index until secondary case development.

[Results] i) Fifty-seven patients were suspected to be secondary cases. In 50 (87.7%) of these, the VNTR was consistent with that in index cases. In 7 (12.3%), it was not consistent. With respect to age, there was a consistency in all 5 patients aged  $\leq 19$  years, 35/41 (85.4%) aged 20 to 69 years, and 10/11 (90.9%) aged  $\geq 70$  years. There were no significant differences in the consistency rate among the age groups. Concerning the state of contact, 37 subjects had lived with index cases, with a VNTR consistency rate of 91.9%, whereas 20 had not lived with index cases, with a VNTR consistency rate of 80.0%.

ii) The interval from index until secondary case develop-

ment was  $< 3$  months in 37 subjects, with a VNTR consistency rate of 86.5%. It was  $\geq 3$  months in 20, with a VNTR consistency rate of 90%.

[Discussion] There were no age-related differences in the rate at which the VNTR was consistent between the secondary and index cases. Furthermore, there were no differences associated with the lifestyle or interval from index until secondary case development. Therefore, the state of secondary case development suggests that patients for whom contact investigation is indicated should be selected based on detailed survey results regarding the risk of infection or disease onset in individual cases regardless of age.

**Key words:** Tuberculosis, Contact investigation, VNTR, Index case, Secondary case, Elderly

<sup>1</sup>Osaka City Public Health Office, <sup>2</sup>Nishinari Ward Office, Osaka City

Correspondence to: Kenji Matsumoto, Osaka City Public Health Office, 1-2-7-1000, Asahimachi, Abeno-ku, Osaka-shi, Osaka 545-0051 Japan.

(E-mail: ke-matsumoto@city.osaka.lg.jp)

————— Case Report —————

AN INFANT CASE OF KOCH PHENOMENON, MOST LIKELY CAUSED  
BY SENSITIZATION OF *MYCOBACTERIUM AVIUM*

<sup>1</sup>Yoshiyuki FURUICHI, <sup>1</sup>Shin KASAI, and <sup>2</sup>Masaki OTA

**Abstract** A 7-month-old male infant diagnosed with Koch phenomenon after BCG vaccination was referred to our hospital. He had no symptoms such as coughing or fever, and was normal on chest X-ray. Further he didn't have apparent contact history with tuberculosis patients. However he was diagnosed with latent tuberculosis infection (LTBI) because of his positive tuberculin reaction (19 mm × 19 mm). Therefore prophylactic administration of isoniazid (INH) to him was started. *Mycobacterium avium* was detected from his gastric juice after 3 weeks incubation. As a result, it was suspected more strongly that sensitization of *M. avium* was involved in Koch phenomenon of this case. However we continued INH administration because it was difficult to deny LTBI. Isolated *M. avium* had resistance to INH, but was not detected from his gastric juice culture when prophylaxis for 6 months was completed. Subsequently his clinical course was good. This reported case supports a hypothesis that some cases of Koch phenomenon after BCG vaccination may have been induced by sensitization of nontuberculous mycobacteria (NTM), not by *M. tuberculosis*. The number of infants diagnosed with

Koch phenomenon after BCG vaccination is considered to have increased, following the change in the timing of BCG vaccination. Therefore BCG vaccination should be done as early as possible. It is also necessary to further accumulate detailed information on infants diagnosed with LTBI due to Koch phenomenon.

**Key words:** Koch phenomenon, BCG, Infant, *Mycobacterium avium*, Latent tuberculosis infection

<sup>1</sup>Department of Pediatrics, Yamanashi Red Cross Hospital;  
<sup>2</sup>Department of Technical Assistance for National Tuberculosis Programmes, Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association

Correspondence to: Yoshiyuki Furuichi, Department of Pediatrics, Yamanashi Red Cross Hospital, 6663-1, Funatsu, Fujikawaguchikomachi, Minamitsuru-gun, Yamanashi 401-0301 Japan. (E-mail: yofuruichi@yahoo.co.jp)

————— Case Report —————

A CASE OF ENDOBRONCHIAL TUBERCULOSIS DUE TO LYMPH NODE  
PERFORATION CAUSED BY PARADOXICAL RESPONSE AFTER  
COMPLETION OF TUBERCULOSIS TREATMENT

Miwako SAITOU, Tomoko SUZUKI, and Katsunao NIITSUMA

**Abstract** A 49-year-old woman was admitted to our hospital due to positive result for interferon-gamma release assay, persistent cough, and body weight loss of 7 kg which had started when her daughter had been diagnosed with tuberculosis (TB) 9 months before. Her body mass index (BMI) was 15.2 and her prognostic nutritional index (PNI) was also low as 36.3. She had no underlying diseases. Since ulcerative lesion at the left main bronchus was found by bronchoscopy (BF) and *Mycobacterium tuberculosis* was detected, she was diagnosed with pulmonary and endobronchial TB. Anti-TB therapy was started and went successfully, and since her complaints were all disappeared after 3 months, she was discharged from the hospital. However, in 2 months since then, she started to have cough and dyspnea at supine position again. Tumorous lesion in the left main bronchus was revealed by CT and obstruction of left main bronchus with

white mass was found by BF. It was considered as a case of bronchial tuberculosis due to mediastinal lymph node perforation to left main bronchus caused by paradoxical response after completion of tuberculosis treatment.

**Key words:** Endobronchial tuberculosis, Paradoxical response, Poor nutrition, Lymph node perforation

Department of Infectious Disease and Pulmonary Medicine,  
Aizu Medical Center, Fukushima Medical University

Correspondence to: Miwako Saitou, Department of Infectious Disease and Pulmonary Medicine, Aizu Medical Center, Fukushima Medical University, 21-2, Maeda, Tanisawa, Kawahigashi, Aizuwakamatsu-shi, Fukushima 969-3492 Japan. (E-mail: aizuanes@fmu.ac.jp)