

Skin Infection Caused by *Mycobacterium abscessus* in a Healthy Adult

Ju Yeong Lee and Eung Ho Choi[†]

Department of Dermatology, Yonsei University Wonju College of Medicine, Wonju, Korea

Mycobacterium abscessus (*M. abscessus*) belongs to the *M. chelonae/abscessus* complex and the rapid growth group of nontuberculous mycobacteria. Tender nodules, ulcers, and abscesses may occur during skin infection. This case reports a nontraumatic *M. abscessus* skin infection in a healthy adult.

A 41-year-old female patient with no specific medical or traumatic history visited our hospital with a skin lesion on the right calf that had developed 3 months earlier. Although incision and drainage were performed twice and the patient was treated with oral antibiotics in another hospital, no

improvement was realized. A rigid patch approximately 2 cm in diameter was observed on the right calf, which was accompanied by slight skin depression, erythema, abscess, and tenderness (Fig. 1A). On the first visit, no symptoms other than the lesion were observed and no abnormalities were found in the blood test, fungus study, or chest X-ray. Histological examination revealed an abscess containing neutrophils on the upper dermis layer and chronic granulomatous inflammation, including Langhans giant cells, on the deep dermal and subcutaneous fat layers. Mycobacteria staining

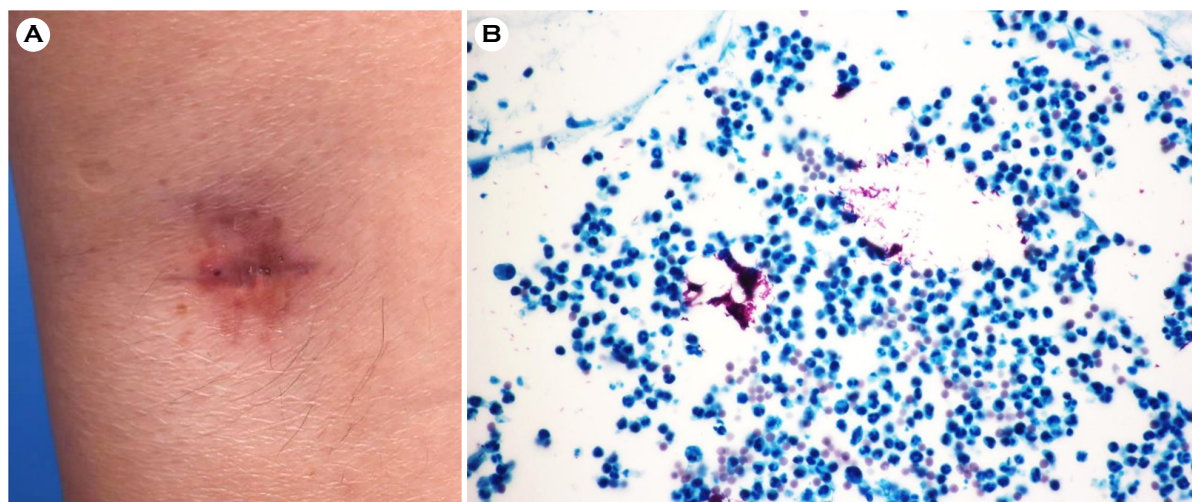


Fig. 1. (A) Solitary dimpled erythematous patch on the right shin approximately 2 cm in diameter (B) Purplish-stained acid-fast bacilli are seen (Ziehl-Neelsen stain, $\times 400$).

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[†] Corresponding: Eung Ho Choi, Department of Dermatology, Yonsei University Wonju College of Medicine, 20 Ilisan-ro, Wonju, Gangwon-do, 26426, Korea.

Phone: +82-33-741-0623, Fax: +82-33-748-2650, e-mail: choieh@yonsei.ac.kr

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Table 1. Skin infection by *M. abscessus* without trauma in a healthy adult in Korea

No	Case report	Sex/age of patients	Location	Trauma history	Medical history	Diagnosis	Treatment	Treatment duration
1	Cho et al. ³	F/30	Both arms	None	None	Biopsy culture PRA	Roxithromycin, cefditoren, amikacin, I&D	2 months
2	Choi et al. ⁴	F/57	Rt. cheek	None	None	Biopsy culture PRA	Clarithromycin, ciprofloxacin	6 months
3	Yu et al. ⁵	F/29	Rt. arm	None	None	Biopsy culture PRA	Clarithromycin	6 months
4	Our case	F/41	Rt. shin	None	None	Biopsy culture PRA RT-PCR	Clarithromycin, levofloxacin	6 months

PRA: Polymerase chain reaction-restriction fragment length polymorphism analysis, RT-PCR: Real-time polymerase chain reaction, I&D: Incision and drainage

showed a positive result (Fig. 1B). The combination of anti-tuberculosis drugs for three weeks showed no improvement. Therefore, nontuberculous mycobacterium (NTM) polymerase chain reaction (PCR) and culture were performed. To distinguish *M. abscessus* and *M. massiliense*, the erythromycin ribosome methyltransferase (*erm*) gene was confirmed using an ERM-plus real-time PCR kit (LG Chem; not a commercial product)¹, and *M. abscessus* was detected. The antibiotic susceptibility test was sensitive to amikacin, clarithromycin, imipenem, and linezolid. We started treatment with 500-mg oral clarithromycin twice a day and 500-mg levofloxacin once a day. After 24 weeks of treatment, all lesions improved without recurrence.

M. abscessus is found in soil, water, and dust. In addition to skin diseases, it can infect joints, bones, and lungs. In Korea, trauma-related skin infections, such as mesotherapy, have been reported. However, only a few nontraumatic cases have been reported in healthy people³⁻⁵. *M. abscessus* infection is mainly caused by invasive actions, such as injections, surgery, or trauma. However, in this case, the *M. abscessus* infection occurred in a healthy adult without a history of invasive procedures or trauma.

Currently, no standard guidelines exist for treating cutaneous *M. abscessus* infections. *M. abscessus* is generally sensitive to macrolides, such as clarithromycin and azithromycin, but may have resistance genes, such as *erm41*. Therefore, combination therapy with other antibiotics is recommended².

In cases of *M. abscessus* without trauma in a healthy adult in Korea, combination antibiotic therapy is used. The treatment period varies from 2 to 6 months, and in one case, incision and drainage were additionally performed (Table 1).

If subcutaneous nodules do not improve with conventional treatment, mycobacterial infection should be suspected. In the case of *M. abscessus* infection, an antibiotic susceptibility test and antibiotic combination therapy based on clarithromycin should be implemented for 4~6 months.

Key Words: *Mycobacterium abscessus*, Non-tuberculous mycobacterium

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The authors declare that there is no acknowledgment.

CONFLICT OF INTEREST

In relation to this article, we declare that there is no conflict of interest.

ORCID

Ju Yeong Lee: 0000-0003-1465-3267

Eung Ho Choi: 0000-0002-0148-5594

PATIENT CONSENT STATEMENT

The patient provided written informed consent for the publication and the use of her images.

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