CASE REPORT

Disseminated folliculitis by *Mycobacterium fortuitum* in an immunocompetent woman*

Foliculite disseminada causada por Mycobacterium fortuitum em mulher imunocompetente

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Abstract: *Mycobacterium fortuitum* is a non-tuberculous fast-growing mycobacterium which is frequently acquired from environmental sources such as soil and water. Since it is an opportunist pathogen, it is associated with trauma, surgery or immunodeficiency. The current report describes a case of Mycobacterium fortuitum-caused disseminated lesions on the skin of an immunocompetent patient.
Keywords: Folliculitis; Nontuberculous Mycobacteria; *Mycobacterium fortuitum*

Resumo: *Mycobacterium fortuitum* é uma micobactéria não tuberculosa de rápido crescimento, freqüentemente adquirida em fontes ambientais como solo e água. É um patógeno oportunista que está geralmente associado a trauma, procedimentos cirúrgicos, ou imunodeficiência. Este relato descreve um caso de lesões disseminadas na pele causada por Mycobacterium fortuitum em paciente sem imunocomprometimento.
Palavras-chave: Foliculite; Micobactérias não tuberculosas; *Mycobacterium fortuitum*

INTRODUCTION

There are currently over 140 species of nontuberculous mycobacteria (NTM) and that number has been increasing every year. NTM is a widely diverse group of organisms with a broad spectrum of virulence and potential to cause human disease.[1] Diseases caused by NTM, which have been grouped as mycobacterioses, show a wide broad spectrum of clinical manifestations and are not usually transmitted from man to man.[2] Cutaneous mycobacterioses are not common; clinical, histopathological and bacteriological findings are not very distinct, making the diagnosis difficult.[3]

Mycobacterium fortuitum is a rapidly growing NTM, often acquired from environmental sources such as soil and water. It is considered an opportunistic pathogen often associated with trauma, surgical procedures, or immunodeficiency.[4,5] There are few reports of infections in healthy hosts, which include cutaneous and soft tissue after intramuscular injections, breast augmentation and other forms of surgery, soft tissue infection following acupunture and also outbreaks of *M. fortuitum* as agents of furunculosis on the legs after pedicure procedures.[5,6,7] The pathogenicity of *M. fortuitum* is unclear but it is known that

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local trauma is the most important entry point for infections of the skin and soft tissues, followed by nosocomial acquisition.[8]

NTM infection should be considered in the differential diagnosis of chronic infection, fever of unknown origin and localized disease (abscesses, ulcers, nodules, infiltration, etc.) that do not respond to antibiotics commonly used in skin infections.[6] This report describes a case of disseminated skin lesions caused by *M. fortuitum* in an young woman without clinical signs of immunosuppression.

CASE REPORT

A 32-year-old woman who worked as a nurse in hospitals in Maringá, Parana, Brazil, suffered from erythema nodule–type lesions with some cold abscesses. The lesions had diameters ranging from 5 to 30 mm, on the trunk and on the upper and lower members, with an evolution of approximately 60 days (Figure 1). At first, the patient was treated with cephalexin 500 mg four times daily, for furunculosis, and later, with ciprofloxacin 500 mg orally twice daily for 14 days, with no improvement. Puncture and drainage of certain lesions were undertaken and specimens submitted to culture. Results were negative for aerobic bacteria and facultative anaerobic ones. The patient was then treated with rifampicin 600 mg orally twice daily and tetracycline 500 mg, four times daily, for 30 days, without any clinical improvement. The patient underwent biopsy for pathological test and culture for Acid-Fast Bacilli (AFB), fungi and pyogenic bacteria. Complementary tests, such as hemoculture, Hemogram, Aspartate Aminotranspherase (AST), Alanine-aminotranspherase (ALT), Urea, Createnin, Hemosedimentation speed, Antinuclear Antibodies (ANA), serology for HIV, Hepatitis C and B (HBs Ag, Anti-HBc, Anti-HBs), acid Alpha 1-glycoprotein, Immunoglobulins (IgE, IgA, IgG, IgM), Rheumatoid factor, Reactive Protein "C", Complement C3 and C4, CD4/CD8, were performed. The pathological test indicated deep perforating and suppurating folliculitis surrounded by a granulomatous and suppurating inflammatory process typifying a foreign body, coupled to a superficial and perivascular limphohistoplasmocytarian infiltrate and to a deep periadnexal infiltrate. Direct research for fungi and AFB showed negative results. Culture for AFB was positive in less than seven days at 30°C and 35°C. No growth of other bacteria occurred. Identification of AFB isolate was undertaken by Restriction Fragment Length Polymorphism Analysis (PCR-PRA) as *Mycobacterium fortuitum* complex.[9] No complementary test produced any changes that would justify involvement of other infectious pathogens. The patient underwent treatment using intravenous amikacin 1 g, three times weekly, clarithromycin 500 mg orally twice daily, during 12 weeks. Afterward monotherapy was maintained with clarithromycin 500 mg twice daily for 12 months. The elapsed time from first medical appointment until the beginning of therapy that achieved regression of lesions was approximately two months. By the end of treatment the patient experienced total regression of skin lesions with no recurring factor up to the present.

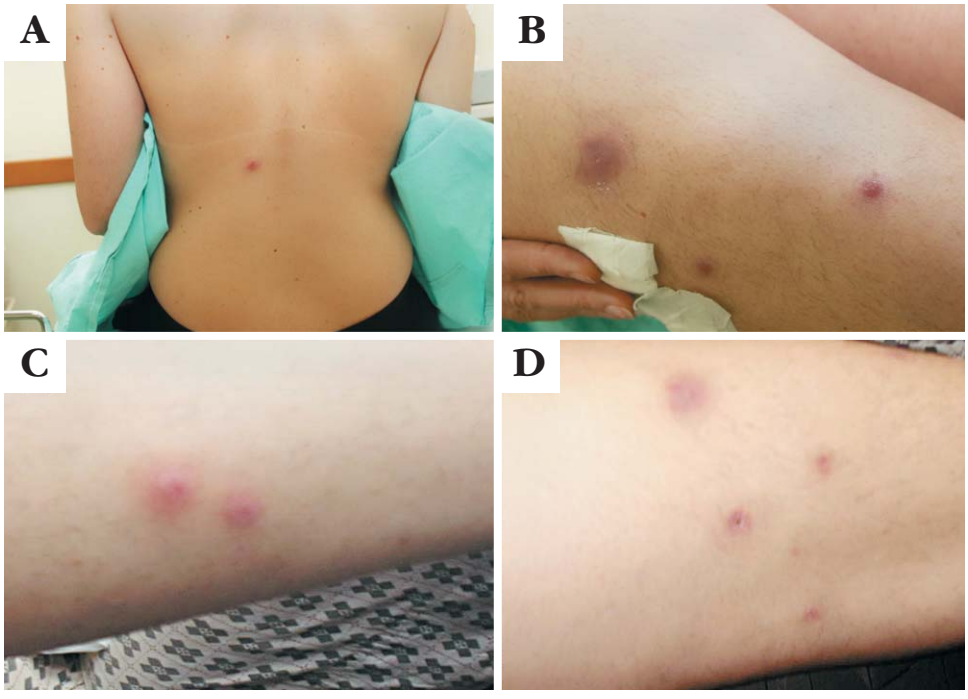

Figure 1: A. Erythematous nodular lesions on the trunk; **B,C,D** erythematous nodular lesions on lower members of the body

DISCUSSION

The current report describes a case of *M. fortuitum*-caused disseminated skin lesions in patient without clinical signs of immunosuppression. This is different from cases with localized lesions currently described in the literature.[10] Since the patient did not have either a surgical history or any other type of skin trauma, the source of *M. fortuitum* infection remained unknown.

M. fortuitum is frequently sensitive *in vitro* to several oral antimicrobial agents, including last generation quinolone, macrolides, doxycyclines, minocyclines, amikacin and sulfonamide.[11] With the therapy initially employed, the patient demonstrated bacterial resistance to ciprofloxacin. However, when the infectious agent was identified as belonging to the genus *Mycobacterium* spp. and therapy with amikacin and clarithromycin started, the patient showed complete resolution of lesions. In spite of the fact that 80% of isolates are sensitive to clarithromycin, experts do not recommend monotherapy and justify the association with amikacin.[8] Recent studies have shown that a significant amount of *M. fortuitum* are resistant to macrolides and that, as a rule, antimicrobial resistance in *M. fortuitum* may not be detected by routine sensitivity tests.[8] For a high cure probability, a minimum therapy period of four months is recommended in bone, serious cutaneous and soft tissues infections using at least two active agents.[8]

Current report highlights the need to include *M. fortuitum* in the differential diagnosis of cutaneous infections that fail to respond to antimicrobial therapy against pyogenic bacteria. This is due to the fact that non-tuberculous mycobacteria have been isolated with greater frequency. The issue requiring an answer in situations described above is whether such increase occurred through the improvement of diagnosis techniques or through an increase in mycobacterial virulence. ❑

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