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CASE REPORT

Cutaneous Infection Caused By *M. Chelonae* Following Thorn Prick

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ABSTRACT

Mycobacterium chelonae is a rare pathogen that causes infection among humans. It is ubiquitous in nature. We report here, a cutaneous infection in a healthy young lady following thorn prick. She was treated with Clarithromycin and Cotrimoxazole and recovered completely after treatment.

Key Words: *M. chelonae*, cutaneous infection.

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Introduction

The improvement in Mycobacterial culture techniques and the introduction of new molecular techniques for the identification of previously unidentified organisms has evoked a resurgence of interest in diseases caused by the nontuberculous Mycobacteria (NTM). At present, there are more than 100 species of NTM, of which 60 are considered to be potential pathogens. The rapidly growing Mycobacteria include the nonpigmented species which are grouped under the *M. fortuitum* complex. It contains *M. fortuitum*, *M. chelonae*, *M. abscessus* and the newly described species *M. immunogenum*. A second group includes the late pigmented or nonpigmented species *M. smegmatis* which is composed of *M. smegmatis*, *M. wolinsky* and *M. goodii* [1].

A wide variety of infections have been associated with rapidly growing mycobacteria like *M. fortuitum*, *M. chelonae* and *M. abscessus* which involve the lungs, skin, bone, kidneys and those in disseminated diseases [2]. Most of NTM species can be readily recovered from environmental samples like soil, water, animals and birds and are acquired by contact with the environment, rather than by person to person spread [1].

We report here, a young immunocompetent female who developed *M. chelonae* cutaneous infection following thorn prick.

Case Report

A 30 year old healthy, young female without any predisposing immunosuppression presented to the Dermatology OPD of a tertiary care hospital with a history of a subcutaneous nodule on the right arm since 2 months. She gave a history of thorn prick while working in the garden. The nodule was 3x3 cm in size, tender and fixed to the underlying structure. There was no local rise of temperature. Physical examination of the patient was normal. Routine haematological investigations and biochemical and

serological tests were within normal limits. Chest X-ray was normal.

Aspirated contents from the nodule were subjected to microbiological investigations. Gram's stain showed plenty of pus cells. Cultures on Blood agar and MacConkey's agar were sterile both aerobically and anaerobically. Acid fast stain showed acid fast bacilli. A culture on Lowenstein-Jensen's medium grew Mycobacteria after 3-4 days of incubation, which was presumed as rapidly growing Mycobacteria. The isolate was identified as *M.chelonae* at the Tuberculosis Research Center, Chetput, Chennai by the HPLC method. It was sensitive to Erythromycin, Clarithromycin, Kanamycin, Ciprofloxacin and Amikacin. The patient was treated with Clarithromycin and Cotrimoxazole for a period four months. The patient responded well to treatment and the recovery was complete.

Discussion

The NTM is known to cause chronic infections involving the tendons, sheaths, bursae, bones, joints, skin, soft tissues and disseminated infections following direct inoculation of the pathogen through trauma, puncture wounds, injection and surgery. The rapidly growing Mycobacteria, *M.chelonae*, *M.fortuitum* and *M.abscessus* are the most common NTM involved in cases of community acquired infections of the skin and soft tissues. The localised infections with *M.fortuitum* have no predisposing immune suppression [2]. In community outbreaks of *M.fortuitum*, the source of infection has been traced to footbaths used for pedicure in beauty Salons [3]. In contrast, infections with *M.chelonae* are seen in both immunocompetent and immunosuppressed patients. The cutaneous infections seen in immunocompetent patients, gain entry through punctured wounds or surgery [5],[6],[7],[8],[9],[10],[11],[12], whereas disseminated infections are reported in immunosuppressed patients who are on long term corticosteroids or those who are

suffering from autoimmune diseases and leukaemia[1],[4]

Sporadic cutaneous infections with *M.chelonae* are seen as nosocomial infections, most of them following surgery[5],[6],[7],[8] or after injections[9],[10],[11],[12]. The source of infection being hospital tap water, processed tap water is used for dialysis and injectable medicines and it is resistant to chlorine and glutaraldehyde [1],[5],[6]. *M.chelonae* isolated from the colonic mucosal membranes [14] may be the reason behind most of the infections reported during intestinal surgeries. More research is required in this area. There is a predominance of cases of *M.chelonae* abscesses following renal transplant, though the reason is not clear [5]. Hence, proper sterilisation and hygienic practices may prevent this nosocomial infection.

As traditional biochemical tests take time for the identification of bacteria, newer rapid diagnostic methods are made available. They are high performance liquid chromatography (HPLC) which examines the mycolic acid fingerprint patterns that differ amongst species or complexes of Mycobacteria, DNA probes and the BACTEC and NAP tests [13]. Antituberculous drugs do not have any action on atypical rapidly growing Mycobacteria. The drug of choice for localised infections caused by *M.chelonae* is Clarithromycin. Other drugs which are sensitive are Erythromycin, Amikacin, Ciprofloxacin, Sulphonamides, Cefoxitin, Imipenem and Tobramycin.

In this case, the infection was acquired through thorn prick and our patient responded well to Clarithromycin therapy and recovered completely. Clinicians should always keep atypical mycobacteria in mind while treating chronic nonhealing ulcers with a history of trauma, apart from fungal causes.

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