A Case of Nosocomial Atypical Mycobacterial Infection

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Introduction

Mycobacterium chelonae is a nontuberculous mycobacterium (NTM), a group that encompasses all mycobacteria outside the *Mycobacterium tuberculosis* complex. It is classified in the Runyon group IV, rapidly growing mycobacteria. It is found in natural and processed water sources as well as in sewage. Distribution is likely to be worldwide, though exact prevalence and incidence is not known, as World Health Organization does not track NTM infections [1]. Nosocomial skin and soft-tissue disease is rare and wound infection with *M chelonae* has been reported in two isolated cases of laparoscopic inguinal hernioraphy recently [2,3]. We describe one such unusual wound infection following open mesh hernioplasty for incisional hernia and aim to highlight that a high degree of suspicion is required to suspect and detect this organism when faced with chronic wound infection.

Case Report

A 38 year old apparently healthy lady, diagnosed to have epigastric hernia underwent mesh hernioplasty. Post operative recovery was uneventful. However, five weeks later she presented with multiple discharging sinuses in and around the operative wound. There was associated continuous dull aching pain but no history of loss of appetite, cough with sputum, fever and weight loss. Examination of the wound revealed mild erythema and induration around the operated site with serosanguinous discharge. With a presumptive diagnosis of delayed wound infection, the patient was treated empirically with tablet ciprofloxacin (500 mg PO BD) for seven days and again with capsule ampiclox (500 mg PO TDS) for 15 days without any improvement and the sinuses persisted. Routine blood counts, hepatic and renal function tests were normal. Test for human immunodeficiency virus (HIV) was negative. Chest radiograph was normal and mantoux test was negative. Pus was sent for culture and antibiotic sensitivity. It was assumed that the mesh was the source of this deep seated infection and hence it was removed along with local

resection of skin and subcutaneous tissue encompassing sinus bearing area. Postoperatively the sinuses persisted (Fig.1). Culture on LJ medium displayed rapidly growing mycobacterial colonies which were subcultured and subjected to standard biochemical test to identify the sub species. *Mycobacterium chelonae* was identified with an antibiotic sensitivity to amikacin. The patient was put on injection amikacin and tablet clarithromycin and reviewed monthly. The sinuses healed completely in the about six months time.

Discussion

Mycobacterium chelonae is an atypical rapidly growing mycobacterium (RGM), originally isolated from a turtle [4]. Unlike *Mycobacterium tuberculosis*, it does not appear to be transmitted from person to person. Surgical site infections due to *M chelonae* have been documented and it is recognized that the source of contamination is colonized tap water [5]. Other nosocomial infections with this organism include infections of implanted devices (e.g.catheters) and injection site abscesses [6,7]. Diagnosis is made by culture of the specific pathogen from drainage material or tissue biopsy. The major modification of culture techniques for recovering NTM species is the requirement of incubating all skin or soft tissue samples

Fig. 1 : Multiple sinuses anterior abdomen wall

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at 35° C and 28-32°C, because a number of common pathogens including *M haemophilum*, *M ulcerans*, *M marinum* and *M chelonae* grow at lower temperatures. We identified the subspecies by the traditional technique of subculture and biochemical tests, so there was a time lag of almost one month before precise diagnosis could be made. However rapid methods are recommended for identification of the NTM. The high-performance liquid chromatography (HPLC) examines the mycolic acid fingerprint patterns that differ amongst species or complexes of mycobacteria. A small number of species (complexes) are not separable by HPLC, including most of the pathogenic rapidly growing mycobacterial species. Two additional techniques for rapid identification of NTM are the species-specific DNA probes and the BACTEC NAP test [8].

M chelonae is resistant to the antituberculous agents, but is susceptible to a number of traditional antibacterial agents like amikacin (80%), tobramycin (100%), clarithromycin (100%), imipenem (60%), doxycycline (25%), ciprofloxacin (20%) and clofazimine [9].

Prolonged antibiotic therapy is generally required for *M chelonae* infections. Treatment usually lasts for many months, and courses lasting more than six months are not unusual. It is recommended to administer drugs long enough to allow for a complete resolution of clinically apparent lesions. How much additional therapy is needed to prevent relapse is unclear [10]. Surgery is generally indicated with extensive disease, abscess formation and in cases where drug therapy is difficult. Removal of foreign bodies such as breast implants, percutaneous catheters, etc. is important to recovery.

In the present study, the probable source of infection could be inadequate sterilization process, over dilution of disinfectants, storage of disinfectant for long time or an infected prolene mesh. But in absence of proven culture from any of above, this remains a conjecture.

What is perhaps more pertinent is that the surgeon remains aware of the possibility of infection with NTM in cases of chronic wound infection.

Conflicts of Interest

None identified

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Events Calendar

07th-08th December 2007

CME on Imaging and Intervention Radiology

Venue: Department of Radiodiagnosis and Imaging,

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