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Mycobacterium Fortuitum Septicaemia In Septic Arthritis : A Case Report

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Abstract:
Mycobacterium fortuitum is rapid growing non tuberculous mycobacteria producing opportunistic infections in the immunocompromised and occasionally immunocompetent persons. Septicaemia due to M.fortuitum is a rare event associated with surgery, trauma or catheterisation. A case of septicaemia and arthritis due to M.fortuitum in an immune competent individual is reported.

Keywords – Mycobacterium fortuitum, septic arthritis, septicemia

Introduction

Non tuberculous mycobacteria (NTM) are opportunistic pathogens that can cause disease in both healthy and immune compromised individuals.[1] *M. fortuitum and M.chelonae* are the most common NTM which often cause cutaneous disease and rarely cause disseminated infections.[1] It is usually chronic, occasionally remitting spontaneously and does not respond to conventional anti tuberculous treatment.[2] They are ubiquitous in the environment and can cause iatrogenic infections following invasive procedure and surgery.

Case History

A 55-yr-old woman was admitted to medical ward with complaints of pain in the right knee of about fifteen day's duration, fever and vomiting of three days duration. The patient was not a known diabetic or hypertensive but a known patient of hypothyroidism. The patient gave a history of similar complaints for over three months and on irregular treatment. On examination at admission the patient was febrile and conscious. Pulse rate was 100/min and BP 140/80mm/Hg. Abdomen was soft with non palpable liver and spleen. Respiratory, cardiovascular and central nervous system examination was non contributory. Erythrocyte sedimentation rate was 90 mm at first hour, other tests like random blood sugar, urea, creatinine, total protein, SGOT, SGPT were normal. ECG showed sinus tachycardia. The right knee joint was tender and with restriction of movement. The following day the patient became drowsy, and there was swelling over the right knee. Diagnostic

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aspiration of the swelling has yielded purulent fluid. Since the patient was toxic, emergency arthrotomy was done. Synovium was enlarged with cheesy material and articular surface was deformed. Gram stain of the fluid showed plenty of pus cells with moderate number of gram negative bacilli. Zeihl - Neelsen stain (ZN- stain) of the aspirate showed plenty of acid fast bacilli. (Figure 2A) Routine bacterial culture yielded a heavy growth of *Pseudomonas aeruginosa* and it was sensitive to ciprofloxacin, ofloxacin, Cefuroxime and imipenem. Culture for acid fast bacilli on Lowenstein – jensen medium (LJ medium) showed growth within seven days of incubation and identified as *M.fortuitum* by standard tests. (Figure 1A) Synovial biopsy results showed degenerative changes with large area of necrosis. A sample of blood was sent for culture along with the pus yielded a pure growth of acid fast bacilli within 48 hours and subculture of the brain heart infusion broth on blood agar, Macconkey's agar and LJ medium yielded *M.fortuitum* within three days. (Figure1B) and it was sensitive to amikacin and ofloxacin.

The patient was put on anti tuberculous treatment (ATT) pending culture reports for NTM, injection Cefuroxime and thyroxine tablets. After five days of treatment with injection Cefuroxime the patient was put on Ofloxacin and Amikacin based on the sensitivity report to NTM. Initially the patient became afebrile, and the pain around the knee subsided but over the next day that is on 6th day of admission the patient developed upper gastrointestinal bleed and collapsed.

Discussion

M.fortuitum is rapidly growing mycobacteria that can cause disease in healthy and immune compromised. Disseminated infection with *M.fortuitum* is rare.[3] The patient was initially started on ATT and cefuroxime based on direct smear examination and later started with Amikacin and Ofloxacin based on antibiotic sensitivity pattern of both the isolates of *M.fortuitum* and *Pseudomonas aeruginosa*.

Isolation of *M.fortuitum* from both the blood and synovial aspirate suggested the diagnosis of *M.fortuitum* septicaemia with arthritis. The patient died suddenly during the course of her treatment which could be due to the resistant character of M.fortuitum for the first line of ATT. NTM is inherently resistant to first line of ATT and usually sensitive to Clarithromycin, Azithromycin, Ciprofloxacin and Amikacin.[4] The choice of therapy should be based on sensitivity reports before combination regimen is started.[4] In the case reported, due to unavailability of rapid methods for sensitivity testing the right selection of antibiotics was delayed.

Conclusion

This case exemplifies an unusual presentation of M. fortuitum causing septic arthritis followed by septicaemia. It is important to maintain suspicion of atypical mycobacteria in infections of both immunocompromised and immunocompetent patients. Early detection and combination regimen is necessary to prevent the complications, which are executable only if rapid laboratory methods are usable.

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egends for the figure

1A – Growth of *M.fortuitum* on LJ media

1B – Turbidity of Blood culture brain heart infusion broth

2A – ZN - stain of the pus showing plenty of acid fast bacilli (100X)

2B - ZN - stain of the broth showing acid fast bacilli (100X)

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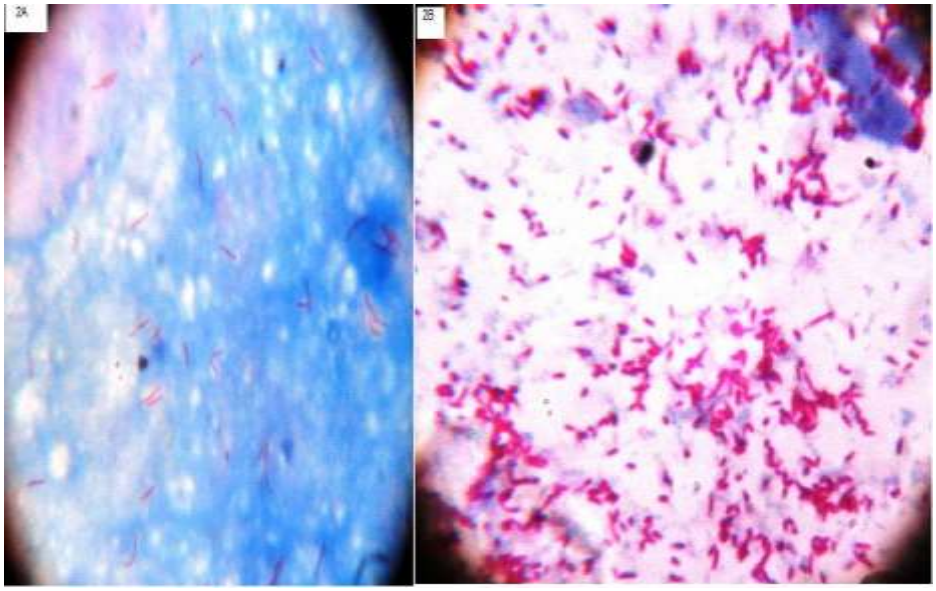

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