

Non-Tuberculous Mycobacterial Infection Associated With Insulin Injections – A Case Report

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Abstract

Case Report

Non-Tuberculous mycobacterial (NTM) infections causing cutaneous abscesses are on the rise, often misdiagnosed for common bacterial cause and treated with systemic antibiotics to which they do not respond, leading to recurrences even after incision and drainage. This is a case report of a 65 year old diabetic patient with recurrence of anterior abdominal wall abscess and draining sinuses around insulin injection sites even after surgical drainage and oral antibiotic treatment. Histopathological examination of excised tissue showed tubercular granulomas and microscopy showed presence of occasional Acid Fast Bacilli in the sinus discharge. Long term treatment with appropriate drugs for NTM, lead to regression and healing of the recurrent cutaneous lesions.

Keywords: Non-Tuberculous mycobacterial infection (NTM), insulin injections, recurrent abscess, discharging sinus, tuberculous granulomas, Acid Fast Bacilli.

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INTRODUCTION

Non-tuberculous mycobacteria, specially *M. chelonae* and *M. fortuitum* belong to rapid growers of Runyon group IV [1, 2]. They are found in the environment and cause opportunistic infections in humans. They are associated with cutaneous infections following trauma, use of contaminated injections or via iatrogenic sources. They lead to recurrent abscess formation if left undiagnosed and treated appropriately. Diabetes and immuno-compromised state are predisposing factors for recurrent cutaneous infections by Non-Tuberculous Mycobacteria (NTM).

CASE REPORT

A 65 year old, diabetic male came to the surgical OP department with complaints of pain and recurrent swelling on right side of anterior abdominal wall of 2 weeks duration. He gave a past history of incision and drainage for a similar condition in a private hospital 1 month ago. On general examination, patient's condition was good and systemic examination showed no abnormalities. Local examination showed 10x5cm size indurated swelling with 2 discharging sinus openings in the right hypochondrial region of the anterior abdominal wall. Patient complained of tenderness on palpation. He was admitted for surgical debridement and excision of necrotic fat and sinuses. He was investigated for blood and biochemical parameters which showed normal results and diabetes

under control with parenteral insulin. X-ray, ECG and USG reports were normal.

Under I.V. sedation, debridement with wide excision was done upto the deep fascia, and wound closed with a drain. He was put on oral broad spectrum antibiotics. The biopsy material was sent for histopathological examination and the report showed: dermis with multiple granulomas and central caseous necrosis surrounded by neutrophils, epithelioid cells, langhan giant cells and lymphocytes, suggestive of granulomatous inflammation of Koch's etiology [3, 4]. Discharge from the surgical site on 3rd post-up day was sent for microscopy and culture. Gram staining, KOH mount (for fungal elements) and routine bacterial and fungal culture reported negative. Ziehl Neelsen staining of the discharge from the surgical site showed occasional beaded Acid Fast Bacilli. Both the HPE & Microscopy reports confirmed the presence of Mycobacteria in the cutaneous lesions. Molecular test using Xpert MTB/RIF assay on Gene Xpert system did not detect MTB.

Patient was referred to the infection control specialist and was advised Ciprofloxacin 250 mg t.d.s and Clarithromycin 500mg b.d. for 6 months [2, 5]. Review after 1 month showed patient responding well to the above treatment. The discharging sinuses and cutaneous lesions were regressing in size and healing well. No new lesions seen.



Fig-1: Pre-operative picture - Cutaneous abscess with persistent discharging sinuses on anterior abdominal wall



Fig-2: Per-operative picture – Debridement and Excision of abdominal wall sinuses

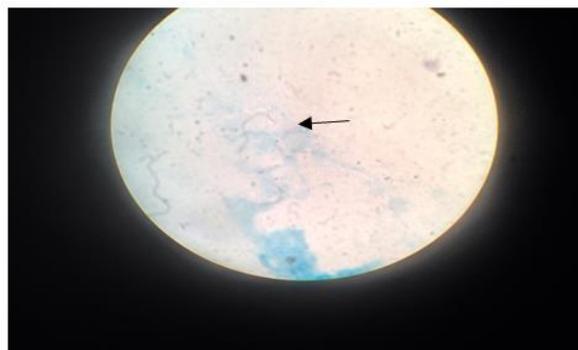


Fig-3: Beaded AFB seen by ZN method



Fig-4: Post-operative picture – Healed wound one month after commencement of treatment for NTM Infection

DISCUSSIONS

Though rare, the clinical presentation of NTM cutaneous infections is generally associated with immuno-compromised state. Patients on mesotherapy and diabetics on insulin injections are more prone [5]. The rapid growers *M. chelonae* and *M. fortuitum* have been the 2 common causative agents isolated from these

lesions. They stain irregularly with ZN staining, grow rapidly (1 week) in cultures on LJ medium and are of low virulence with no human to human transmission and are generally resistant to the routine 1st line anti-tuberculous drugs. Various combinations of drugs, including Rifabutin, Chlofazimine, Quinolones, and newer Macrolides can be used. Selection of drugs based on sensitivity studies should be done if feasible.

CONCLUSION

This case reinforces the need to consider NTM as a causative agent of persistent or recurrent sterile cutaneous abscesses, especially over the injection sites. Necessary investigations have to be carried out keeping this in mind so that delay in diagnosis is avoided and initiation of appropriate treatment is done at the earliest, to contain the disease. Sterile procedures, aseptic techniques, hand-hygiene, proper storage of medication, etc, should be taught to patients as preventive measures and reuse of needles to be avoided.

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