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FORTUITUM CHELONAE COMPLEX CAUSING EXTENSIVE CUTANEOUS SKIN ULCERS IN AN IMMUNO-COMPROMISED PATIENT

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Abstract:

Background: Among the 95 well characterized Mycobacterial species M. *tuberculosis* and M. *leprae* have been the well known pathogens affecting human beings.[1] Rarely saprophytic Non Tubercular Mycobacteria may cause human infections.[2] Here we report a case of multiple skin ulcers caused by M. *chelonae fortuitum* complex in an immuno-compromised person, along with the microbiological work-up of the isolate.

Key words: MOTT ulcer, Cutaneous TB, Atypical Mycobacteria.

Introduction;

Genus Mycobacterium has 95 well characterized species.[1] Among them M. *tuberculosis* and M. *leprae* have been the well known pathogens affecting human beings from time immemorial. Other members are called as Non Tuberculous Mycobacteria (NTM), and are present in the nature as saprophytes. However, occasionally these organisms can cause local and disseminated infections.[2] NTM are probably transmitted through aerosol, soil, dust, water, ingestion or by skin inoculation, whereas person to person transmission is a rare possibility.[3,4,] Here we report a case of multiple skin ulcers caused by M. *chelonae fortuitum* complex in an immuno-compromised person, along with the microbiological work-up of the isolate.

Case Record;

A thirty year old moderately built, nourished and obese male, farmer by occupation was referred to KLES's Dr Prabhakar Kore Medical Research Centre Belagavi, a teaching hospital of JN Medical College Belagavi. He presented with painful ulcers on abdomen, hips, back of arm and legs.(Fig No1,2) These lesions were associated with foul smelling discharge.

Past history of the patient revealed that, the lesions appeared as painless raised nodules of 1-2 cms in size on the lower limbs about a year back. Gradually the lesions spread all over the body. After 2-3 months the nodules opened up and formed ulcers which were highly painful. For the above complaints he was consulted his family physician in his village, and he prescribed him with ciprofloxacin and injection steroids for a week. Later he was given Inj. Dexona and Tab. Wysolone alternatively in various doses in the past three years. There was no improvement with this treatment. During the same time the patient noticed weight gain, joint pains and weakness. Meanwhile he had consulted many doctors. Finally he was referred to our tertiary care hospital with the above complaints. There was no history of cough with expectoration, difficulty in breathing. He was married since ten years and no similar history in family. Patient was a known alcoholic and gave significant history of heterosexual exposure.

On examination his body temp was 99.6° F, pallor was present, no icterus, no clubbing. Left sided inguinal lymphadenopathy was present. These lymph nodes were tender matted and measured 3- 5 cms on left inguinal side. Bilateral pitting type pedal edema was present. Mucocutaneous examination reveled, multiple ulcers with undermined edges present over upper limb, lower back and buttocks measuring 3x3 cm to 3x5 cm in size. The ulcers were oval in shape covered by necrotic slough. External Genital examination showed no abnormality. With these findings the patient was admitted with diagnosis of Cutanenous Tuberculosis with Cushing's syndrome and HIV infection,? Tuberculosis gumma ?TB chancre or ? type vulgaris.

On admission, he was anemic with 8.0 gms of hemoglobin. ESR was raised (62 mm/hr), total WBC count was 12,500 /cu.mm, Neutrophils 90 % Lymphocytes 10 %. AEC was 75 cells /cu.mm. Blood picture was Microcytic hyphochromic anaemia. Serum ALT 44 U, SGOT 62 U, Total Bilirubin 0.8

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mg%, Cholesterol 133 mg %, Blood Urea 25 mg %, Sr. Creatinine 0.8 mg %, Sodium 143 mEq/L, Serum. Potassium 3.7 mEq/L. Serum A:G ration 0.6 : 1.0. Serum Cortisol levels 1.3 mg and 0.7 mg/dl in morning and evening samples respectively. Urine examination was revealed no abnormality. VDRL test was Non-reactive. His serum was found reactive for HIV by EIA (J.Mitra & Co India).

Smears were prepared from the scrapings from ulcers after thorough cleansing and were subjected to Gram's and Z N Stain. Gram's Stain was revealed scattered Gram positive bacilli. However Z N stained smear showed, plenty of acid fast bacilli. The sample was inoculated on conventional Lowenstein-Jensen (LJ) slants and in radiometric BACTEC 460 TB system (Becton Dickinson diagnostic system, USA). Besides this, the sample was also plated on Mac Conkey's agar (without crystal violet) and 5% Sheep Blood agar. Colorless colonies were demonstrated on LJ medium by 3rd day. Bactec 460 indicated growth by 2nd day (GI= 510).ZN staining from both media revealed Acid fast bacilli. Culture isolate was further inoculated into bottle with p -nitro - á acetylamine - â hydroxy propiophenone (NAP) disc (5 µg) for NAP test. The test organism was identified as a Non Tuberculous Mycobacteria on the basis of the NAP test and the ability to grow on LJ media in <7 days and in BACTEC media with in 5 days. This isolate was further characterized and identified as *Myc. fortuitum chelonae* complex by biochemical tests (Hydrolysis of phenolphthalein sulphate within 3 days, Growth on mannitol & inositol, Tolerance to NaCl at 28 deg C, Sensitivity to Amikacin and Ciprofloxacin). Antimicrobial Susceptibility Testing (Kirby Bauer method) was performed on Muller Hinton agar and the isolate was sensitive to Amikacin, Vancomycin, Linezolid and Ciprofloxacin. MIC of the above drugs was determined using broth micro dilution technique using, Sensitiser (**Trek Diagnostic Systems for Rapid Growing Mycobacteria).** Sensitivity and resistance of the organism was determined by the presence or absence of **turbidity in the broth. The organism was found sensitive to Amikacin, Clarithromycin, Ciprofloxacin, Imipenem, Gatifloxacin and Co-Trimoxazole. It was resistant to Cefoxitin, Ceftriaxazone, Tobramycin and Amox + Clavalunic acid.** Treatment was started with, IV fluids, Cefotaxim, Tab Ultracef along with ATT. Within two days of admission patient started complaining of increased pain at ulcer areas. Inj Diclofenac Sodium dose was increased to reduce the severe pain in ulcer to twice a day. Despite of this treatment patient developed increase in pain and went on discharge against medical advice after fifth day of admission. Patient expired within two days after discharge.

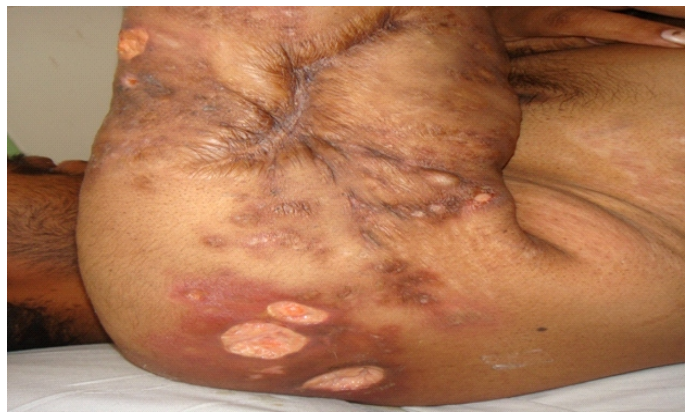

Fig 1. picture showing active and healed lesions on the shoulders and upper hand of the patient.

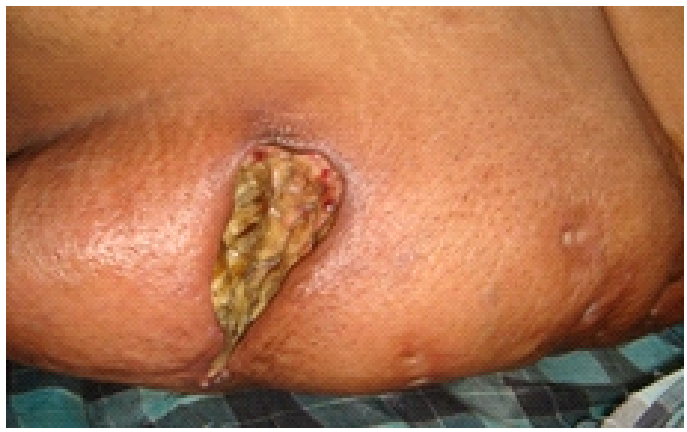

Fig 2. Leisons on the Lt gluteal region

Discussion;

Pinner, was the person who called these group organisms as Atypical Mycobacteria.[1] M. *chelonei* and M. *fortuitum* are ubiquitous organisms and are widely distributed in water and soil. The diseases caused by rapidly growing mycobacteria in human are majorly due to M. *fortuitum*, M. *chelonae* and M. *abscessus*.[2-5] We report a case of multiple skin ulcers caused by *M. fortuitum-chelonae* complex with an underlying immunocompromised condition. Though past history of this patient do not reveal any history of injury, for the reason that our patient was a farmer by occupation who could have been exposed to minor injury, which might have been overlooked.

NTM are known to cause chronic subcutaneous infections with serous discharge and require prolonged course of expensive antibiotics, especially among immuno-compromised persons.[6] Anti Tubercular treatment have no role in such cases.[7] Unfortunately in our patient, the diagnosis was delayed and he was treated by steroids for long time by

his family physician, which in turn complicated the disease pattern and led to Cushing's disease. We could not start him on antibiotic therapy for him because, we received the report after fifth day and he was gone against medical advice.

We conclude here with by adding that, in chronic sappurative cutaneous diseases pus samples have to be subjected for ZN staining along with Grams stain since, ZN stain can throw light on the case. We also suggest in such cases AFB culture should be attempted along with antibiotic sensitivity. Moreover laboratory needs to be alerted, so that all the necessary measures could be adopted.

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