CASE REPORT

A CASE REPORT OF ACTINOMYCOTIC MYCETOMA WITH OSTEOMYELITIS OF RIGHT FOOT TREATED WITH WELSH REGIMEN

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ABSTRACT- A 60-year-old female patient presented with history of swelling over the right foot with multiple sinuses having seropurulent discharge. On gram stain -gram positive branching filamentous bacilli, (actinomycotic mycetoma) were demonstrated and was started on Welsh regimen, patient responded well with one cycle. This case is reported to emphasize the importance of laboratory diagnosis in the management and assessment of the prognosis of such cases.

INTRODUCTION- Mycetoma is a chronic, granulomatous, inflammatory, disfiguring disease, usually involving subcutaneous tissue, most probably after traumatic inoculation of the causative organism¹. Painless subcutaneous mass, multiple sinuses & purulent or seropurulent discharge that may contain grains is characteristic of mycetoma.

CASE REPORT- A 60 year old female patient presented with swelling & non healing wound over the right foot for the last 4 months(Figure 1) .History of discharge of pus and whitish- yellow granules from the wound (Figure 2) for the last one month. There is a history of trauma 4 months back to the right foot. followed by swelling at the same site.Initially the lesion appeared as a single papule which was present on the dorsum of the foot , for which patient applied native medicine. After 2 to 3 days ,it burst open to form a discharging sinus She is a known hypertensive for the last 4 years and is on treatment.On examination, the right foot showed swelling and induration of the skin with four discharging sinuses. The regional lymph nodes were not enlarged. Routine lab investigations were done-CBC-Hb-12.3 mg/dl,TC-8,710 cells/μl, DC-N-66.5, L-23, E-2.2, M-3.6, B-0.3. RBC-4.34 million/μl of blood,Platelet count-2.36 lakhs. ESR-40mm/hr. Blood urea-18, Serum Creatinine-0.5, SGOT-19, SGPT-18, FBS-95mg/dl, PPBS-120mg/dl, RA factor- negative. Urine routine-Albumin-nil,Sugar-nil,Micro- pus cells -1 to 2per low power field, Epithelial cells 3 to 5,RBC-0 to 2. Modified Acid fast stain (Kinyoun's method) with 1% sulfuric acid - negative. GRAMS STAIN- (Figure 3) - Specimen – wet swab (+ granules)No pus cells. Gram positive cocci in pairs & small cluster, thick gram negative bacilli & gram positive branching filamentous bacilli seen. On Aerobic Culture on blood agar - Staphylococcus aureus & Citrobacter species were isolated. Anaerobic culture on brain heart infusion agar isolated actinomyces species within 72 hours (Figure- 4)Chest X ray- Normal ,X ray Right foot-Osteomyelitis of 4th ,5th metatarsal bone (Figure 5), KOH Preparation- Negative for fungal elements, Biopsy-Excision biopsy was done(four whitish yellow granules were obtained while doing deep exsion biopsy), Histopathology-Epidermis shows pseudo epitheliomatous hyperplasia. Dermis shows pockets of acute inflammatory cell infiltrate with granulation tissue. Multinucleated giant cells are also seen (Figure 6, 7, 8).

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MRI with contrast- shows DOT IN CIRCLE SIGN (Figure 9, 10) –it showed well defined heterogenous signal intensity lesion with central hypointense signal intensities- calcification measuring 4.1x 2 cm on the lateral aspect of the dorsum of foot with surrounding edematous inflammatory fascia thickening lesion shows intense heterogenous enhancement on contrast administration. Adjacent tarsal bone shows marrow edema and subtle enhancement on contrast study.

FIG. (1, 2) - swelling with four discharging sinus.

FIG. 3: Gram stain from specimen shows Gram positive branched, filamentous bacilli about 1μ in diameter. (→ Shows branching)

FIG. 4: Gram positive bacilli from culture

FIG. 5: X ray Right foot-Osteomyelitis of 4th, 5th metatarsal bone

FIG. 6: Histopathology - Epidermis shows pseudo epitheliomatous hyperplasia and

FIG. 7: Dermis showing pockets of acute inflammatory cell infiltrate

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FIG. 8: Multinucleated giant cells

FIG. 9: MRI with contrast (lateral view) showing DOT IN CIRCLE SIGN

FIG. 10: MRI with contrast Showing DOT IN CIRCLE SIGN

FIG. 11: After one cycle of Welsh regimen.

TREATMENT GIVEN- Started on **Welsh regimen**. (Pt. weight -53 kg) **Inj. Amikacin** 15mg/kg body wt (500mg-0-250mg) for 3 weeks. **Tab.Bactrim DS** one tablet twice daily {Cotrimoxazole (trimethoprim and Sulfamethoxazole)} for 5 weeks. Alternate day dressing with sliverex Cream .

DISCUSSION: Mycetoma is a chronic subcutaneous infection caused by actinomycetes or fungi. This infection results in a granulomatous inflammatory response in the deep dermis and subcutaneous tissue, which can extend to the underlying bone. It is characterized by the formation of grains, containing aggregates of the causative organisms that may be discharged onto the skin surface through multiple sinuses. Mycetoma caused by microaerophilic actinomycetes is termed actinomycetoma, and mycetoma caused by true fungi is called eumycetoma. The disease was described in 1842 and initially named Madura foot, after the region of Madurai in India where it was first identified³.

DOT IN CIRCLE SIGN -very rarely described in the literature,is a unique appearance that is highly suggestive of mycetoma ⁴

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Treatment of Mycetoma depends on the etiological agent and extent of disease. Combined medical (antifungal agents) and surgical treatment is standard for eumycetoma. Actinomycetoma is a bacterial infection, respond to antibiotics. Combination of 2 drugs in 5 week cycle is used. Trimethoprim and Sulfamethoxazole (TMP-SMZ), dapsone and streptomycin sulphate, amikacin can be substituted for streptomycin. If needed cycles can be repeated.

CONCLUSION-The Patient showed good prognosis with a fair diminution of swelling and size after one cycle of welsch regimen (FIGURE 11), and treatment was further continued. Hence the identification of the causative agent and differentiation of eumycotic mycetoma from actinomycotic mycetoma constitute the major points in application of appropriate antimicrobial therapy.

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