

Cutaneous botryomycosis: A case report

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Abstract

Background: Botryomycosis is a chronic bacterial infection that manifests as a swelling or plaques which often ulcerate with multiple discharging sinuses containing white colour granules.

Although most common cause of botryomycosis is *Staphylococcus aureus* but other bacteria like *Coagulase negative Staphylococci (CONS)*, *Streptococci*, *Pseudomonas aeruginosa*, *E. coli*, *Proteus* species and *Serratia* species can also cause botryomycosis. The gold standard for diagnosis of botryomycosis is culture and histopathology.

We present a case report of 60 years old diabetic patient, with history of trauma in left foot 15 days back, which later resulted in swelling with multiple discharging sinuses.

Keywords: botryomycosis, plaques, *Staphylococcus aureus*, histopathology, sinuses

1. Introduction: Case presentation

A 60year old patient with history of diabetes and hypertension from past 15 years was admitted in the Surgery department with swelling in his left foot which was painful with multiple discharging sinuses. Patient had a history of trauma 15 days back due to a road traffic accident. On X-ray there was no evidence of fracture, however the size of swelling was progressively increasing with increase in discharge from sinuses. Due to pain and swelling patient had restricted movement and was taking pain killers on and off for pain relief. On examination patient's blood pressure was 160/90 mm of Hg, respiratory rate was 20 breaths /minute, his random blood sugar level was 350mg/dl. On taking patient's detailed history it was seen that patient was not compliant to his medications. MRI of foot showed destruction of deep tissue. A skin biopsy sample and collection of the discharge containing granules was done using a gauze piece.

Samples were subjected to culture for bacteria (aerobic & anaerobic) and fungus and Histopathological evaluation. Granules were suspended in saline, smear was prepared by crushing the granules between the slides and gram stain was done which revealed gram positive cocci about 1µm in size appear in small clusters. Sample was inoculated on blood agar, Mac Conkey agar, Sabouraud's dextrose agar. Media were inoculated at 37⁰ C for 18 to 24 hours for bacterial culture and for 4 weeks in case of fungal culture. No growth was seen on anaerobic bacterial and fungal culture.

Growth was seen on aerobic culture where on blood agar beta hemolytic colonies 0.5-1mm convex whitish yellow colonies with regular margins was seen, Lactose fermenting growth was seen on Mac Conkey agar. Culture smear showed gram positive cocci in clusters. Identification of the organism as *Staphylococcus aureus* was done using standard protocols. Histopathology of biopsy sample revealed basophilic bacterial granules surrounded by eosinophilic amorphous material constituting Splendored Hoeppli phenomenon. Diagnosis of cutaneous botryomycosis was confirmed. Antibiotic susceptibility testing showed that the

strain was sensitive to Erythromycin, Amoxicillin-Clavulanic acid combination, Vancomycin and Linezolid. However resistance was seen for Cotrimoxazole, Ciprofloxacin and Clindamycin.

Patient was treated with Amoxicillin-Clavulanic acid combination for 10 days. Patient was switched to combination of insulin and oral anti-diabetic drugs for better control of blood sugar levels. Patient was advised to remain compliant to his drugs as. Patient was fully cured and discharged on 14th day of admission and on repeat follow up after 6 weeks no new lesion of botryomycosis appeared. His blood sugar levels and blood pressure was well under control.



Fig 1: Left foot showing lesions with multiple discharging sinuses

2. Discussion

Botryomycosis is a rare bacterial infection that can involve skin and viscera. It is a granulomatous bacterial infection where organisms form granules which are composed of bacterial micro-colonies adherent to each other^[4].

The pathogenesis of botryomycosis is poorly understood. It

is associated with defects in cell mediated immunity. Mainly low lymphocyte count ^[5]. Botryomycosis should be differentiated from other similar clinical presentation like mycetoma, Actinomycosis and tuberculosis ^[6]. Major predisposing factors include skin trauma, diabetes mellitus, post-operative complication or any other co-morbidity which may result in immune-suppression ^[7]. The gold standard for diagnosis of botryomycosis is Culture and histopathology. Treatment includes debridement along with prolonged antibiotic therapy.

3. Conclusion

Botryomycosis is a rare condition, but recent trends show increase in such cases. These cases may be confused with other clinical picture, therefore it is essential that clinician must advice all investigations and co-relate clinically to reach diagnosis.

4. References

1. John K, Gunasekaran K, Kodiatte TA, Iyyadurai R. Cutaneous botryomycosis of foot : A case report and review of literature. *Ind J Med Microbiol.* 2018; 36:447-49.
2. Bonifaz A, Carrasco E. Botryomycosis. *Int J dermatol* 1996; 35:381-8.
3. Chintaginjala A, Harshvardhan K, Kumar AS. Cutaneous botryomycosis: A rare Case Report. *Ind J Dermatol.* 2016; 61:126.
4. Meheregana DA, Su WP, Anhatt JP. Cutaneous botryomycosis. *J Am Acad. Dermatol.* 1991; 24:393-96.
5. Bruken RC, Lichon Chao N, Van der Broek H. Immunological abnormalities in botryomycosis. A case report with review of literature. *J Am Acad. Dermatol.* 1983; 9:428-34.
6. Findlay GH, Vismer HF. Botryomycosis- Some African Cases. *Int J Acad Dermatol.* 1990; 29:340-44.
7. Coelho WS, Diniz LM, Souza Filho JB. Cutaneous botryomycosis: case report. *an Bras dermatol.* 2009; 84:396-99.