

## Mycetoma of the Breast: A Case Report

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**Abstract:** Mycetoma is a chronic suppurative infection affecting skin, subcutaneous tissue, and bones which is common in tropical and subtropical regions. The manifestations of mycetoma are painless subcutaneous mass, multiple sinuses and purulent or seropurulent discharge that may contain grains. We reported a case of a 39-year-old female with a complaint of skin mass with discharge in her left breast for about a year. The clinical diagnosis was a breast tumour with suspicion of malignancy. A histopathological examination of the breast biopsy was performed which showed foci of granulomas consisting of chronic inflammatory cells, foamy macrophages, and many multinucleated cells. In several granulomas, there were eosinophilic masses with hypha in the peripheral and arranged radially. In conclusion, based on clinical and histopathological examinations the diagnosis of this case was a mycetoma of the breast.

**Keywords:** mycetoma; breast; deep mycosis; mammary infection; diagnostic pathology

## INTRODUCTION

Mycetoma is a chronic localized subcutaneous infection characterized by three main clinical appearances of subcutaneous mass, serous or purulent sinuses, and the presence of grain structures caused by bacteria (actinomycetoma) or fungi (eumycetoma).<sup>1</sup> It occurs worldwide and endemic in tropical and subtropical regions and more frequently reported in males than females (3:1) possibly due to males being more frequently involved in soil-exposure work. This condition is commonly found in young adults (16-40 years) and is rare in children.<sup>2</sup>

Mycetoma usually spreads to skin and the deep structures resulting in destruction, deformity, and loss of function.<sup>3</sup> We reported a case of a female with a subcutaneous breast mass and was diagnosed as mycetoma of the breast.

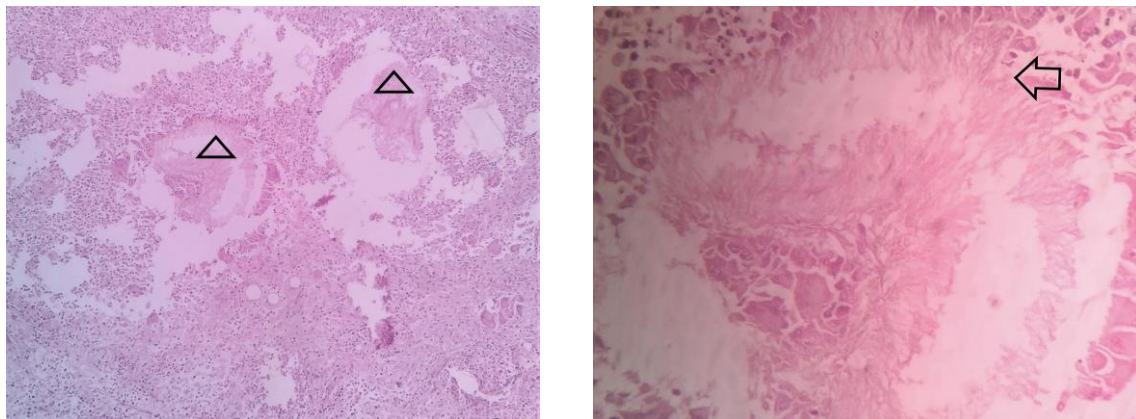
## CASE REPORT

A 39-year-old female complained of a painless mass in her subcutaneous left breast. The lesion was solitaire and tender, and there was seropurulent discharge through the skin sinuses. The clinical diagnosis was breast tumor with suspicious of malignancy. Histopathological examination of breast biopsy sample was performed. Macroscopically, the breast biopsy sample was a 2.5 x 2.5 x 1.5 cm yellowish tissue with a focus of whitish soft mass. Microscopic examination with Hematoxylin and Eosin (HE) stained revealed foci of granulomas consisting of mixture chronic inflammatory cells, neutrophils, foamy macrophages, and many multinucleated cells. In several granulomas there are sulphur granules with hypha in the peripheral sites and radially arranged. The surrounding connective tissue stroma has many capillaries, lymphocyte cells and plasma cells. No signs of malignancy were found (Figure 1). Histopathological examination concluded as a mycetoma infection of the breast.

## DISCUSSION

Mycetoma is a chronic granulomatous inflammatory disease that affects the cutaneous and subcutaneous tissues. The microorganisms that cause mycetoma are various species of fungi (eumycotic) and bacteria (actinomycotic), which live as saprophytes in the soil or on the plants. All the causative microorganisms produce granules which form and color may be helpful in identifying the microorganism.<sup>3</sup> In subtropical and tropical regions, mycetoma is a real public health issue, and easily misdiagnosed in clinical practice due to its nonspecific clinical features and lack of awareness of the disease.<sup>4,6</sup>

Mycetoma most often occurs in the feet or lower legs, and the hands or areas that are in frequent contact with the soil. Incidence in other body parts is low, including the breasts.<sup>1</sup>



**Figure 1.** A, Foci of chronic granulomatous reactions surrounded the sulphur granules and neutrophil infiltrates (100X); B, Sulphur granules with hyphae at the periphery, radially arranged, and many giant cells (4000X)

Commonly, mycetoma infection is the result of external trauma and local ischemia of the infected area. Several cases reported the infection at the site of injection.<sup>7</sup> The clinical presentation of mycetoma consists of a triad of symptoms namely swelling or subcutaneous mass, multiple draining sinuses, and the presence of granules.<sup>8,9</sup> The patient in this case presented a subcutaneous mass in her breast with discharged sinuses on the skin surface. Histopathological examination with HE stained demonstrated the presence of sulphur granules and dense neutrophilic infiltrates, surrounded by nodules of chronic granulomatous inflammatory response with or without foreign body giant cells.<sup>10</sup> In this case we found the infiltrates of neutrophils, chronic granulomatous inflammatory reaction surrounded the sulphur granules, hyphae and many giant cells (Figure 1).

The diagnosis in this case is based on the grains with fungal colonies that observed in the HE staining slide. In eumycetoma other than HE stained, periodic acid-schiff and Grocott-Gomori staining can also be performed for better results. If an actinomycetoma is suspected, Gram's stain should be added. Culture examination of the biopsy tissue can be performed to determine the exact causative organism. However, this examination takes quite a long time and a complicated process.<sup>2</sup> Polymerase chain reaction (PCR) based diagnosis using biopsy specimen is a recent diagnostic technique that can be used for accurate identification of the organism.<sup>2,11</sup> Mycetoma treatment depends mainly on its etiological agent. Actinomycetoma is usually treated with antibiotics while eumycetoma is treated with antifungal and combination of surgery with antifungal is most preferred.<sup>2,12,13</sup> A prospective studies by Khatri et al showed that most cases of actinomycetoma can be controlled using cotrimoxazole whereas eumycetoma cases treated with ketoconazole and excision are well-controlled.<sup>14</sup>

## CONCLUSION

Mycetoma of the breast is a rare condition with clinical appearance of mammary subcutaneous mass, seropurulent sinuses, and grains. The diagnosis of this patient was concluded through the histopathological examination which reveals foci of infiltrates of neutrophil, chronic granulomatous inflammatory reaction surrounded the sulphur granules, hyphae, and many giant cells.

## Conflict of Interest

The authors affirm no conflict of interest in this study.

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