

The hidden culprit in skin: Basidiobolomycosis presenting as pyogranulomatous reaction

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ABSTRACT:

Basidiobolus species is an unusual cause of infection with characteristic mycological and histopathological findings¹. Infection can present from skin lesions to slow growing subcutaneous or invasive tissue mass. Histopathological features include the peculiar Splendore Hoeppli phenomenon, identification of unique beak like zygosporangium and culture on Sabouraud dextrose agar shows creamy white colonies². Less than 80 case reports are published in total. Most cases are reported from Middle East countries (Iran, Saudi Arabia, and Kuwait)⁴

Key words: *Splendore Hoeppli phenomenon, Zygosporangium, Saboured dextrose agar*

CASE REPORT:

Introduction:

Basidiobolomycosis is an uncommon but clinically significant chronic subcutaneous mycosis caused by basidiobolus ranarum, a filamentous fungus belonging to the order entomophthorales of the class zygomycetes. It affects immunocompetent individuals, unlike mucormycosis, which commonly occurs in immunocompromised hosts. The infection is typically acquired through traumatic inoculation of fungal elements into the skin from contaminated soil or decaying vegetation, and it mainly occurs in tropical and subtropical climates. Clinically, basidiobolomycosis manifests as firm, painless, or mildly tender subcutaneous swellings that may become indurated or ulcerated with time. Although primarily confined to subcutaneous

tissues of the limbs, rare visceral and gastrointestinal forms have also been reported, presenting as mass-like lesions that may mimic malignancy or chronic granulomatous diseases.

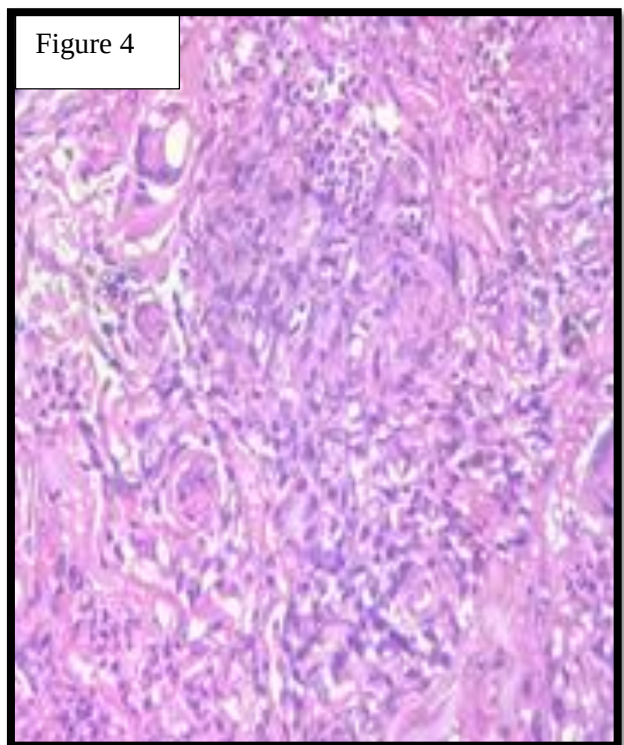
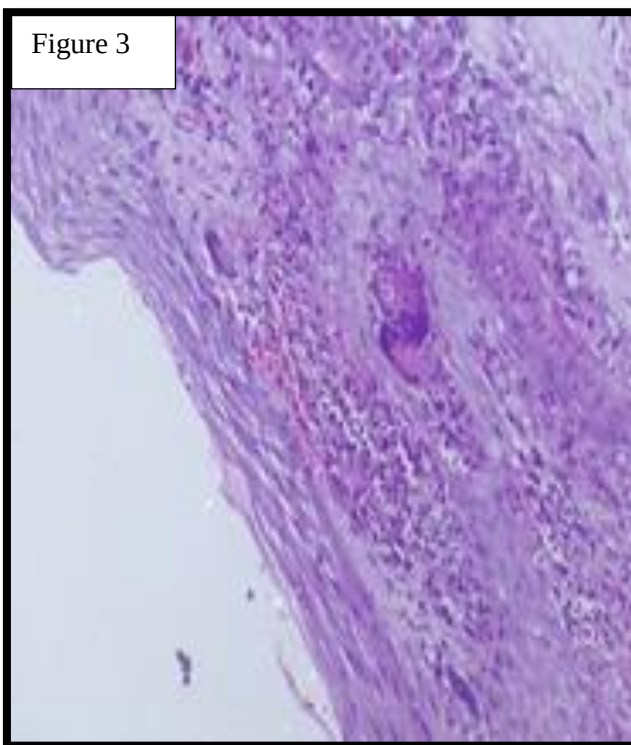
Case report:

A 72-year-old male with a medical history notable for hypertension, a recent cerebrovascular accident (CVA), and type 2 diabetes mellitus presented with a six-month history of a red, raised, and oozing lesion located on the right elbow. The lesion extends proximally to involve the upper one-third of the forearm and two-thirds of the arm, including the medial aspect. The patient has a past history of similar lesions on the left knee diagnosed by biopsy as chromoblastomycosis.

Clinical Photographs:



Fig. No. 1 and 2: Multiple well defined erythematous plaque of size 12x5cm to 3x3 cm on Right elbow medial and extensor aspect, with surface showing nodularity and crusting.



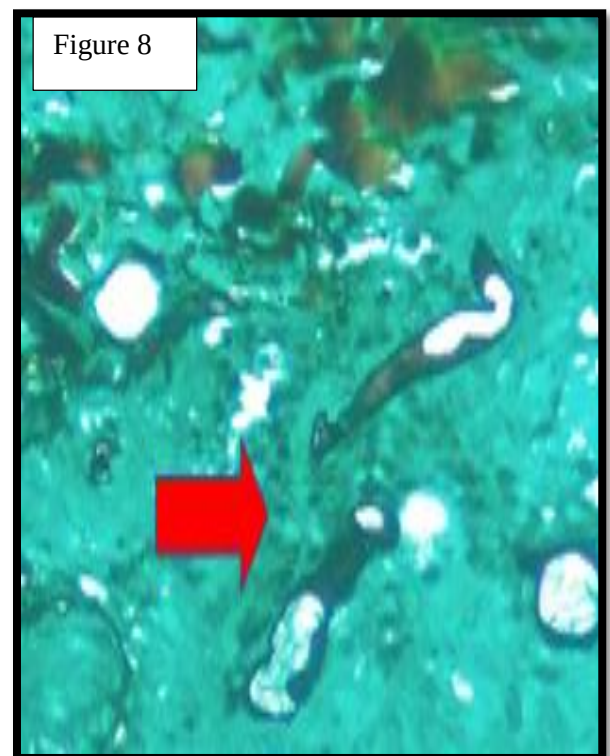
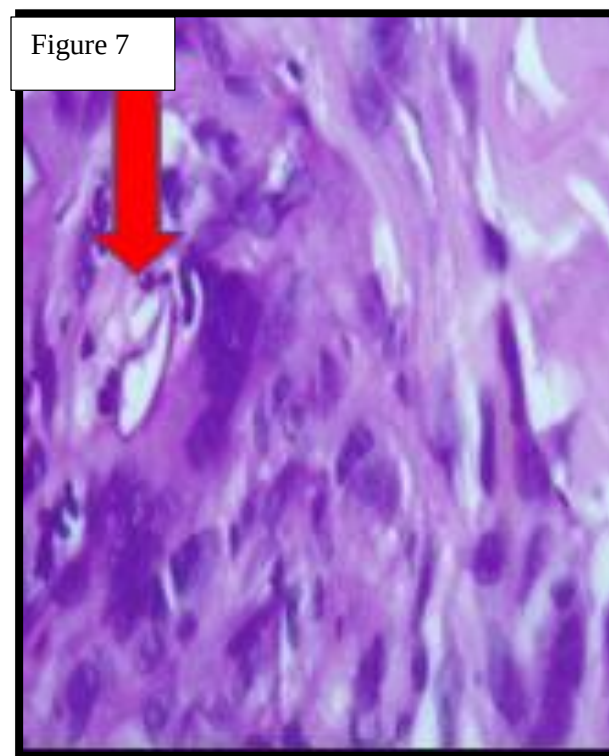
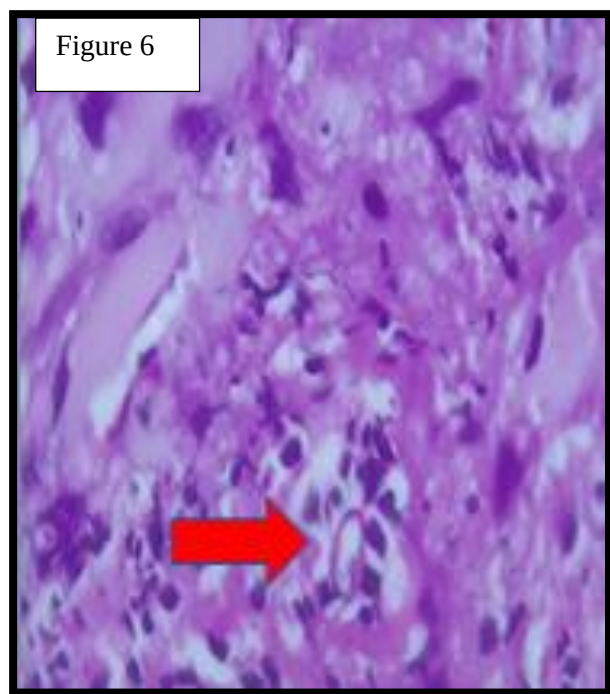
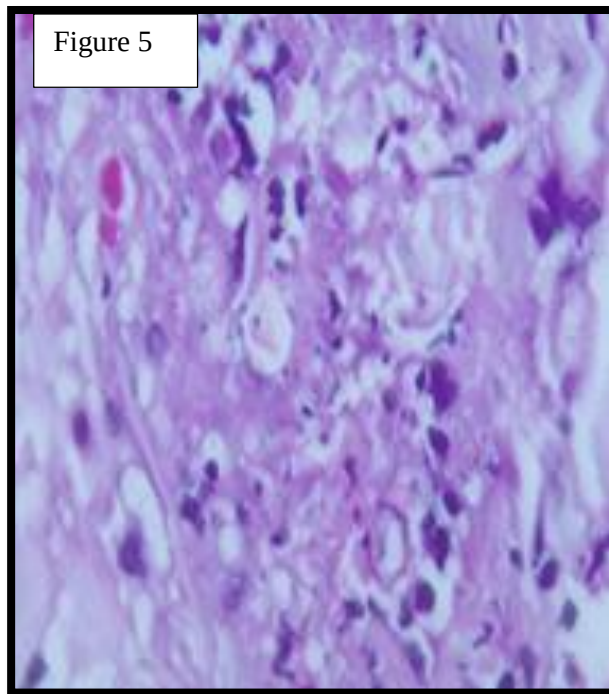


Fig. No. 3 (10x), Fig. No. 4, 5, and 6 (40x) and Fig No. 7,8 (100x): Epidermis is thinned out. Dermis shows scattered collection of histiocytes forming granuloma along with scattered multinucleated giant cells. Scattered short and broad aseptate hyphal forms seen. Stroma shows moderate to dense neutrophilic infiltrate and necrotic material.
Fig No. 8 (40x): Scattered fungal hyphal and yeast forms seen in GMS.

Culture Photographs:



Fig. No 9 and Fig. No. 10: Culture from Patients tissue and subculture with Sabouraud dextrose agar showing White creamy colonies.

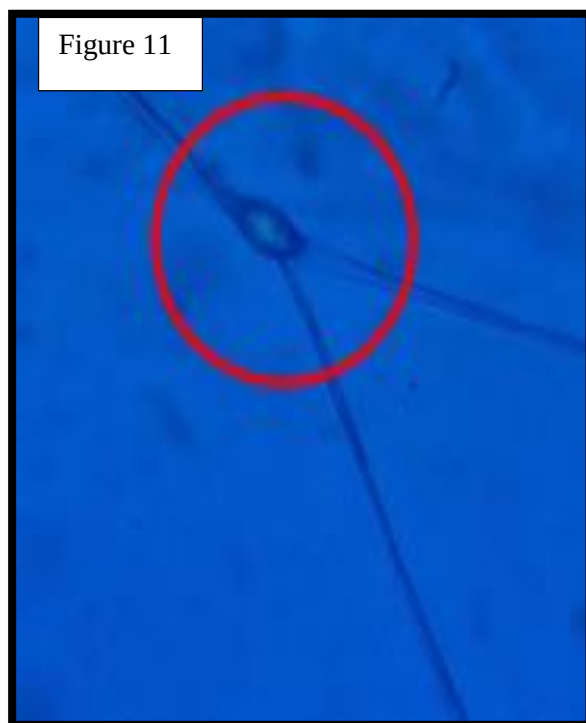


Fig. No. 11 (100x) and Fig. No. 12 (100x): Lactophenol cotton blue staining shows Beak like intercalary zygospore and Ballistospores.

DISCUSSION:

Basidiobolomycosis is a chronic fungal infection of subcutaneous tissue found in immunocompetent patients caused by basidiobolus ranarum. The disease is mostly limited to tropical and subtropical regions³. Gastrointestinal infections have also been described, leading to subacute or chronic obstruction, as well as urinary tract obstruction¹. Diagnosis of Basidiobolus infection is typically by microbiological culture with associated typical histopathological features¹. Wet mount preparation with lactophenol cotton-blue stain found the characteristic beaked- spores on fungal microscopy. On histopathological examination, the Splendor-Hoepli phenomenon on H&E stain with ribbon like hyphae and multinucleate giant cells¹. Potassium iodide (KI) and itraconazole are commonly used for treatment². Surgical intervention in combination with systemic therapy is preferred in extensive disease³. This case highlights necessary care, early diagnosis and prompt treatment to prevent complications and improves lifestyle of patients. Mucor mycosis is a close differential of basidiobolous with distinct histopathological and culture findings. Mucor species are having broad (5–20 µm), aseptate or pauci-septate, ribbon-like hyphae with right angled, irregular, branching⁵. Basidiobolus will have broad but thinner, sparsely septate coenocytic hyphae surrounded by Splendore–Hoepli material⁶. It is not necessary that every case of basidiobolomycosis shows the Splendore–Hoepli phenomenon, but its presence is considered a classic and highly characteristic histopathological feature of the disease. In our case the splendor –Hoepli phenomenon was absent. Basidiobolous appears within 2–3 days in culture shows moderate growth, whereas mucor shows rapid growth within 24 hours in culture. Creamy white to pale gray waxy, heaped up, and furrowed colonies are found in basidiobolous. Mucor shows cottony, grayish-white fluffy colonies, later turning the colour to brown or black with sporangia. Broad, pauci-septate hyphae with zygosporangia and forcibly discharged conidia (ballistospores); absence of sporangia are seen in basidiobolous. Broad, non-septate hyphae with sporangia, sporangiospores, are seen in mucor.

CONCLUSION:

In this case, a rare impression of cutaneous basidiobolomycosis was confirmed by biopsy in an elderly, immunocompromised patient with a past history of chromoblastomycosis. While chronic deep fungal and bacterial infections, and inflammatory dermatoses form the broad differential for slowly progressive, oozing cutaneous masses, this case illustrates the need to

consider entomophthoromycosis (basidiobolomycosis) even in atypical age and demographic settings, especially when classical histopathologic features (pauciseptate hyphae, eosinophilic infiltrates, and Splendore–Hoepli bodies) are present. Accurate diagnosis enables effective antifungal therapy and avoids unnecessary surgical intervention or misdiagnosis.

Follow up: Patient is treated with itraconazole and responding well to the treatment

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