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SUBCUTANEOUS PHAEOHYPHOMYCOSIS – A RARE CASE REPORT

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ABSTRACT

Phaeohyphomycosis is a heterogeneous group of fungal infections caused by a variety of naturally pigmented fungi. A 53 year old woman presented with painless swelling over the lower one third of the left leg medial aspect, of one year duration. Local examination revealed a firm, fluctuant, mobile swelling measuring about 6×4 cm situated over the medial aspect of the lower left leg. It was not painful or tender. Microscopic examination revealed fungal granuloma (the causative organism morphologically identical to pheohypomycosis)

Keywords: Fungal infections, Pigmented fungi, Granuloma

INTRODUCTION

The taxonomy and terminology of dematiaceous fungal infections are difficult. The term phaeohyphomycosis was first coined by Ajello in 1974.¹ Earlier, some of the authors had proposed terms such as chloroblastomycosis.² Later, this term was modified as chloromycosis.³ Phaeohyphomycosis is a heterogeneous group of fungal infections caused by a variety of naturally pigmented fungi. The aetiological agents of this mycosis, which include more than 80 genera and species, are common saprophytes found in soil, wood, and decaying vegetable matter.^{4,5} Phaeohyphomycosis is rare in humans, although it is more common in immunocompromised individuals.⁶ Phaeohyphomycosis affects either superficial tissues, such as the skin, cornea, and subcutaneous tissue, or deep tissues, such as the brain and cases of phaeohyphomycosis are classified accordingly.⁵

The infection typically follows traumatic implantation of the fungi by a wooden splinter or a thorn prick and manifests as a cystic lesion.

Herein, we report a typical case of a subcutaneous phaeohypomycosis occurring in an elderly woman.

CASE REPORT

A 53 year old woman presented with painless swelling over the lower one third of the left leg medial aspect, of one year duration. Initially the swelling was small but gradually increased in size. The patient, a labourer had a thorn prick injury while clearing wild bushes one year ago. The Swelling was noticed a few months after the incident. On examination, her general condition was good. She was afebrile. Other systemic examination results were within normal limits. Local examination revealed a firm, fluctuant, mobile swelling measuring about 6×4 cm situated over the medial aspect of the lower left leg. It was not painful or tender. It was not attached to the underlying bone. USG of swelling suggested a differential diagnosis of thrombosed varicose veins, multiple chronic abscesses, Neoplasm. Haemoglobin level was 12.6, TLC 6800 gm/dl, platelet 2.8. PBS was normocytic normochromic, random, blood sugar 176%. The urinalysis results

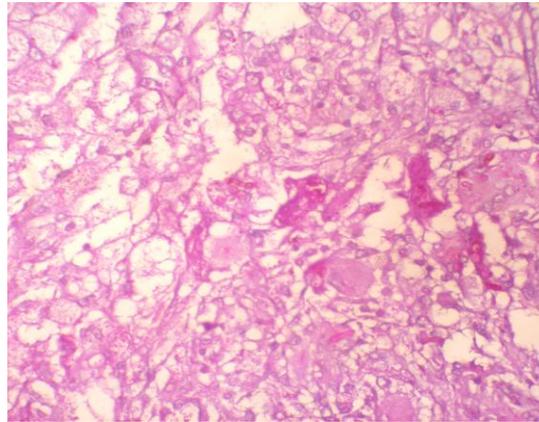
were normal. RFT, LFT was within normal limits. HIV and HBSag negative. Patient was a known case of hypertension and diabetes Mellitus. Pt was sent for FNAC – pus like material admixed with blood was aspirated. Stained smears showed mainly inflammatory cell chiefly polymorphs along with few giant cells in necrotic background. The features were suggestive of an inflammatory lesion or abscess and biopsy was advised.

OPERATIVE FINDINGS

During surgery the swelling was easily separated from the surrounding tissue and removed completely. When the excised cyst was cut open in the surgical theatre, it expelled purulent material. The cyst was immersed in 10% formalin and sent for histopathological examination.

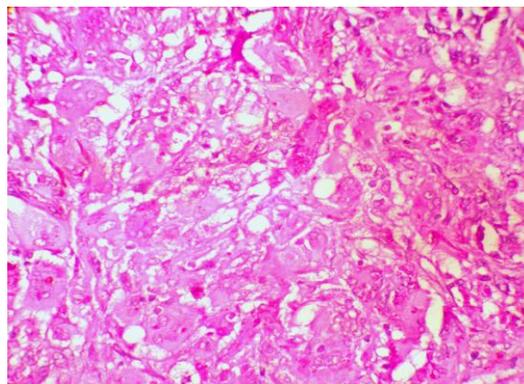
GROSS FINDINGS: The excised specimen was received as multiple tissue pieces, the largest measuring 5x1.2x1 cm. Other pieces altogether measured 3.5x3.2x1cm. The cut surface was soft to firm in consistency, homogenous, and greyish-white in colour.

MICROSCOPY: Multiple sections were taken, analysed and showed chronic granulomatous inflammation comprising of numerous epithelioid cell granulomas along with giant cells, macrophages and lymphocytes and areas of necrosis. In foci, pigmented, branching, septate fungal hyphae were visualised which were located within and in between the giant cells. These hyphae morphologically resembled phaeohyphomycosis species. Tissue sections were subjected to special stains.



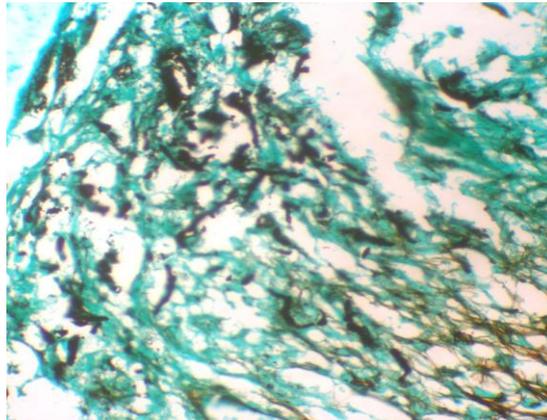
Micrograph showing fungal hyphae (H&E X 40)

PAS stain-the fungal hyphae appeared as bright magenta coloured, septate hyphae with branching. Yeast form was also observed.



Micrograph showing fungal hyphae (PAS X 40)

GROCOTT stain-revealed brownish black, branching, and septate hyphae similar to those observed using PAS stain



Micrograph showing numerous black colored fungal hyphae (Grocott stain X 40)

FINAL DIAGNOSIS – Fungal granuloma (the causative organism morphologically identical to phaeohyphomycosis)

DISCUSSION

Phaeohyphomycosis is an infection caused by a heterogeneous group of phaeoid fungi. The disease is more of a histopathological, rather than a clinical entity.⁷ More than 130 fungal species belonging to 70 diverse genera have been reported as causative agents in human and animal phaeohyphomycosis.⁸

Subcutaneous phaeohyphomycosis occurs throughout the world in all climatic conditions. In India, the climate ranges from tropical to temperate and the disease has been reported from the extreme north to south, except for the western and eastern regions.⁹ Males are commonly involved because of their outdoor occupation. In a review published in 2002, eighteen cases of subcutaneous phaeohyphomycosis were reported from India. The article documented involvement of the leg, foot, arm, toes, nails, waist, buttock, left thumb, hand, wrist while some patients had disseminated disease.⁹

Phaeohyphomycosis is more common in immunodeficient or debilitated hosts and rarely affect healthy individuals.⁶ Phaeohyphomycosis has been clinically divided into superficial

(cutaneous and corneal), subcutaneous, and systemic phaeohyphomycosis by McGinnis.⁵ Subcutaneous phaeohyphomycosis usually results in a painless subcutaneous abscess or in verrucous plaques on the hand, arm, face, or neck. Although phaeohyphomycosis has distinct clinical features, it is occasionally confused with chromoblastomycosis

There are significant clinical differences between chromoblastomycosis and phaeohyphomycosis. Typically, phaeohyphomycosis follows traumatic implantation of the fungus by a wooden splinter, or a thorn as in our case. Lymphangitis and regional lymphadenopathy are unusual. Hence, infective aetiology is often not considered. Our case was clinically suspected to be a multiple chronic abscess or a neoplasm.

The host reaction to phaeohyphomycosis is similar regardless of the aetiological agent and the anatomic site of involvement. The lesion is usually situated in the dermis and the subcutaneous plane and is characterised by cyst formation with dense collagenous connective tissue with central suppurative necrosis. The overlying epidermis is usually normal (In chromoblastomycosis epidermis

is hyperplastic). The wall contains compact aggregates of epithelioid cell histiocytes and numerous giant cells. Pigmented moniliform (spherical & uniform segmentation) fungal elements are usually present inside the giant cells or extracellularly in the necrotic debris. In case of chromoblastomycosis, muriform (brick like cell with both longitudinal and transverse septa) with sclerotic bodies fungi may vary in their degree of pigmentation and may also appear as infrequently branching hyphae measuring 2–6 µm wide. The fungi are closely septate and constricted at their prominent septations.⁶ Our case exhibited the typical features of phaeohyphomycosis.

Regarding the management of subcutaneous phaeohyphomycosis, excision of the localised lesion is usually curative.¹⁰

CONCLUSION

Subcutaneous phaeohyphomycosis is a rare fungal infection. It's caused by a broad variety of dematiaceous fungi. Simple excision is usually curative for localized lesions. When phaeohyphomycosis is suspected, the identification of the fungus by routine histopathological examination is often sufficient to arrive at a diagnosis of phaeohyphomycosis.

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