Phaeohyphomycosis, Emerging as a common cause of Diagnostic Dilemmas

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ABSTRACT
The incidence of fungal infections, currently is on the rise and fungi are known to cause infection in immunocompromised hosts. However they can cause limited infection in immunocompetent hosts too. Infections can range in severity from superficial to life-threatening. Fungal infections affecting only the superficial layers of the skin are readily treatable and have a relatively limited impact on quality of life. However, systemic fungal infection can be life threatening. In most of the patients, they tend to present with signs of acute / chronic infection like any other infectious etiology. Phaeohyphomycosis (PHM), a family of pigmented fungi tend to cause limited infection in the form of subcutaneous and deep seated lesions forming mass lesions, which can be easily confused with common clinical tumors. We report a case of Phaeohyphomycosis, clinically presenting as a thigh lump and was diagnosed as a benign tumor.

KEYWORDS: Phaeohyphomycosis, Phaeohyphomycetes, Pigmented fungi, Dematiaceous fungi

INTRODUCTION
Phaeohyphomycosis (PHM) is an infection of humans and other animals caused by a number of phaeoid (melanized) fungi, characterized by the development of dark-colored hyphae, pseudohyphae, and yeasts depending on species, in invaded tissues. The term PHM encompasses distinct mycotic infections regardless of the site of the lesion, the pattern of tissue response, granuloma or abscess, or the taxonomic classification of the etiologic agents. Phaeohyphomycosis has been attributed to more than 100 species and 60 genera of fungi over the past several decades and the common etiologic agents include Exophiala, Phoma, Bipolaris, Philalophora, Colletotrichum, Curvularia, Alternaria, Exserohilum, and Phialemonium with the most common species being Exophiala jeanselmei and Wangiella dermatitidis [1].

Increased use of antibiotics and immunosuppressive drugs such as corticosteroids, uncontrolled blood sugar levels are major factors contributing to higher frequency of fungal infections. Antibiotics and immunosuppressive drugs, by disrupting normal bacterial colonization and suppressing the immune system, create an environment within the body in which fungi can thrive [2]. Our case had clinical picture similar to benign tumours and underwent excision and the diagnosis of phaeohyphomycosis was made after histopathological examination which was confirmed with special stain.

CASE REPORT

54 year old Female, presented with swelling of the right thigh of 5 months duration which gradually increased in size. She also complained of mild tenderness over the lump. There was no history of diabetes or trauma. On examination, a circumscribed lump measuring 4X2X1 in aggregate was on the right thigh. The overlying skin was unremarkable. Pre operative evaluation also confirmed the euglycemic state of the patient. Clinical diagnosis of neurofibroma was made and the same excised.

The gross examination of the received material revealed partially cystic nature with pieces of cyst wall measuring 4X2X1 in aggregate. The cyst wall showed necrotic debris (Fig.1). The microscopic examination showed a fibrocollagenous cyst wall with necrotic debris, chronic inflammatory infiltrate, foreign body giant cells, pigmented and non pigmented fungal hyphae (Fig.2). A diagnosis of Phaeohyphomycosis was made which was confirmed using PAS stain which highlighted the fungal hyphae (Fig.3).
Figure 1: Gross picture of the lump

Figure 2: Photomicrograph showing the presence of pigmented fungal hyphae amidst giant cell reaction, H & E, Low power, 100 X

Figure 3: Photomicrograph showing PAS stain highlighting the presence of fungal hyphae, Low power, 100 X
DISCUSSION

Phaeohyphomycetes: Broad definition, fungi that produce brown-black structures at least at some period in life cycle, particularly spores. Restricted definition, fungi that are vegetatively melanized throughout their life cycle. The clinical presentation of Phaeohyphomycosis include Superficial, cutaneous and coreneal, Subcutaneous , Para nasal , Cerebral and disseminated Phaeohyphomycosis. As phaeohyphomycetes are a group of opportunistic fungi like most other fungi, the clinical picture is determined by the immune status of the patient. Infections tend to be chronic, superficial and localized with subcutaneous cyst formation in immunocompetent hosts in contrast with the extensive , deep and life threatening infections in immunocompromised hosts.

In the immunocompetent persons, the most common and typical lesions are cutaneous or subcutaneous cysts or abscesses, frequently caused by E. jeanselmei, at the site of traumatic implantation of the fungus [3].Subcutaneous phaeohyphomycosis typically begins as a single red nodule, usually on the extremities. The primary lesion occurs as a single, discrete, asymptomatic small nodule. This is palpable under the smooth and slightly elevated skin. The nodule gradually evolves to become an encapsulated, fluctuant abscess with a liquefied center. The cystic lesion will usually be of the size < 2.5 cms. The overlying epidermis is hardly affected, and formation of a sinus tract or ulceration is rarely observed. Occasionally, a granulomatous, slightly elevated plaque may appear when the main site of the lesion is in the epidermis and dermis. Less frequently, it is manifested as a small verrucous nodule or plaque consisting of coalesced nodules. Lesions may occur all over the body. As, patients present often with solitary, discrete, well encapsulated nodule or cyst in dermis or muscle, the clinical picture will mimic tumours or common surgical lesions like lipoma, soft tissue tumours ,dermoid cyst , ganglion etc; Our case also presented with thigh lesion and was clinically diagnosed to be having a benign tumour.

In immunosuppressed patients, local progression and extension can occur rapidly producing scaly, crusty skin lesions or ulcers which tend to coalesce and become invasive life threatening lesions. Diagnosis of subcutaneous phaeohyphomycosis is usually made after surgical excision or biopsy by the demonstration of pigmented hyphae histologically and by the isolation and identification of compatible etiologic fungi. Identification requires careful histopathological examination ,special stains and species identification requires culture. Management of subcutaneous phaeohyphomycosis usually involves excision with the use of antifungal agents in recurrent cases and in immunocompromised persons [4].

CONCLUSION

Unlike other fungal infections, Phaeohyphomycosis tend to present as subcutaneous or deeper masses which tend to mimic other common tumors / lesions. Phaeohyphomycosis may not present with the classical features as in our case and should be considered in the differential diagnosis of such lesions.

REFERENCES


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