Isolation and identification of phaeoid / dematiaceous fungi from patients of phaeohyphomycosis in a tertiary care hospital in Chandigarh (India)

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Introduction

Phaeohyphomycosis refers to infections caused by phaeoid /dematiaceous or darkly pigmented fungi with brownish - black colonies. In this study we isolated phaeoid fungi from five cases of phaeohyphomycosis from August 2017 to January 2018. The case studies are being discussed.

Material and Methods

This study was conducted on samples received from patients with infections ranging from superficial infections, subcutaneous cysts, pneumonia, brain abscess and disseminated infection in two sterile containers containing normal saline and 10% formalin and were processed in the Department of Microbiology and Pathology, respectively. Patients in whom direct microbiological examination or cytology / histopathology was positive showing dark grey, brown or black colored fungi were included in the study. Fungal cultures on Sabouraud's dextrose agar (SDA) were put up thereby lactophenol cotton blue (LCB) mounts were examined from the growth. Slide culture was put up wherever needed for further identification.

Results and Discussion

We isolated phaeoid fungi from five cases of phaeohyphomycosis from August 2017 to January 2018. In all cases direct KOH mount was positive and cytology was positive in 2 cases (3 and 5).

Case 1: A 66 year old female presented swelling over the left lateral malleolus x 3 weeks following trauma from the edge of a door. On examination, there was swelling and mild tenderness over the lateral malleolus. Material was aspirated and sent for cytology and fungal culture which showed growth of *Nigrospora* species (confirmed by slide culture).

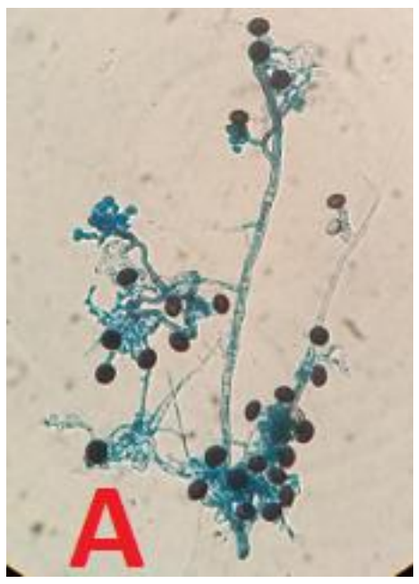
Case 2: A 55 year old male presented with pain abdomen and fever x 2 weeks. On examination there was tenderness in right subcoastal region. CECT abdomen showed ruptured splenic abscess with gross fluid in peritoneal cavity confirmed by USG guided aspiration. Fungal culture showed growth of *Curvularia* species.

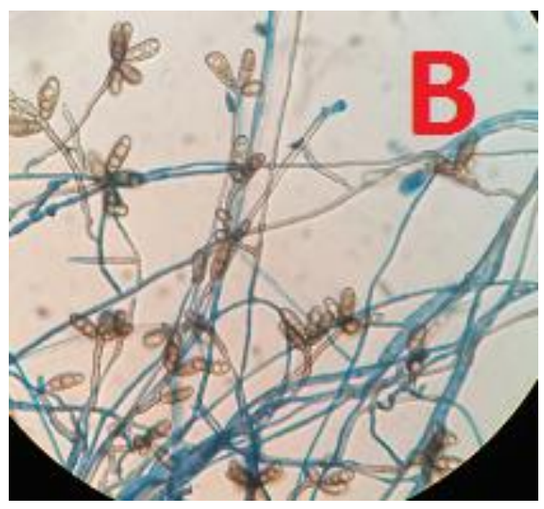
Case 3: A 41 year old male presented with swelling and tenderness on the right foot for the past one month following trauma during a motor vehicle accident. On examination there was swelling, redness and tenderness on the dorsal aspect of the right foot. The aspirated material was sent for cytology and fungal culture which showed growth of *Exophiala* species.

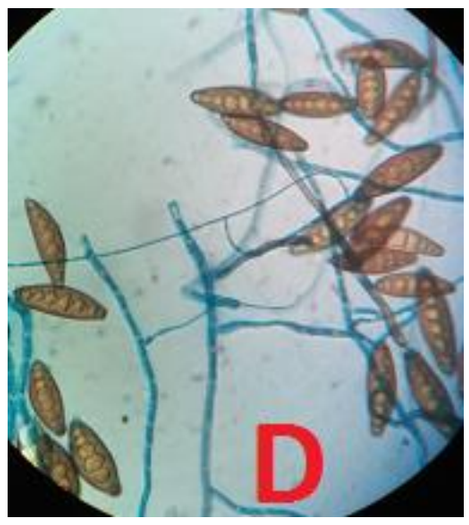
Case 4: A 5 year old female child presented with pain and inability to move right hip joint x 3 days. On examination, there was swelling and tenderness over right hip joint. MRI showed osteomyelitis of right intratrochanteric region. There was a small collection around the right iliacus. Incision and drainage was done and sample was sent for fungal culture which showed the growth of *Exserohilum* species.

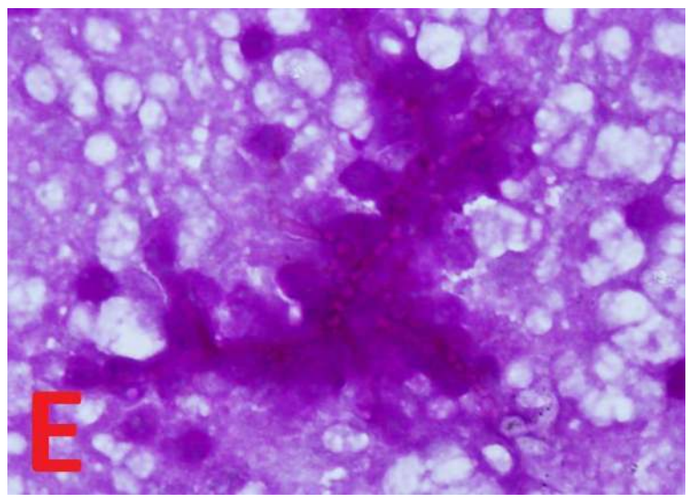
Case 5: A 61 year old male farmer presented with swelling over the left medial malleolus for the past 3 months following trauma while working in the field. An FNAC was done and sample was sent for cytology and fungal culture. Cytological smears and KOH wet mount showed presence of septate hyphae suggestive of phaeoid fungi. Fungal culture showed growth of phaeoid fungi. Identification by slide culture is yet to be done.

Results and Discussion









A: LCB mount showing *Nigrospora* species isolated from a patient with left lateral malleolus swelling.
B: LCB mount showing *Curvularia* species isolated from a patient with splenic abscess.
C: Masson Fontana staining showing phaeoid fungi isolated from a patient with Right foot abscess.
D: LCB mount showing *Exserohilum* species isolated from a patient with right hip septic arthritis.
E: PAS staining showing phaeoid fungi (yet to be Identified) isolated from a patient with left medial malleolus swelling.
F: shows the lesion of a patient from which phaeoid fungi was isolated.
G: PAS staining showing phaeoid fungi isolated from a patient with right foot abscess.
H: KOH mount of sample taken from a patient with left medial malleolus swelling showing tortuous hyphae suggestive of phaeoid fungi.

Molecular identification of these fungi will be done whenever feasible. Surgical removal of the lesions was done in all cases. There was significant improvement after surgical removal in four cases, hence the clinician decided not to start antifungals. However, in the fifth case, the lesion recurred after one week hence the patient was started on oral fluconazole 150 mg OD for seven days after which no recurrence has been seen till now.

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