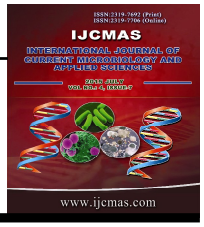
Int.J.Curr.Microbiol.App.Sci (2015) 4(8): 387-390

International Journal of Current Microbiology and Applied Sciences
ISSN: 2319-7706 **Volume 4 Number 8 (2015) pp. 387-390**
http://www.ijcmas.com



Case Study

An Uncommon Cause of Spreading Cellulitis in a Case of Acute Myeloblastic Leukemia

Soumya Mukherji[1], Prakas Kumar Mandal[1]*, Swagnik Roy[2] and Prantar Chakrabarti[1]

[1]Department of Hematology, N. R. S. Medical College & Hospital, Kolkata – 700014, West Bengal, India
[2]Department of Microbiology, K.P.C. Medical College & Hospital, Jadavpur, Kolkata, West Bengal, India
**Corresponding author*

K e y w o r d s

Acute myeloblastic leukemia, *Apophysomyces elegans*

A B S T R A C T

Mucor mycosis is a rapidly fatal fungal infection; mortality remains very high till today. Common genera associated are *Absidia*, *Mucor*, *Rhizomucor* and *Rhizopus*; *Apophysomyces elegans* is relatively new. First isolated from India; nearly 100 cases are reported till date and majority are from India. Here we report a case of acute myeloblastic leukemia with spreading cellulitis caused by *Apophysomyces elegans*.

Introduction

Mucormycosis, earlier known as zygomycosis, is a rapidly fatal fungal infection especially in immunocompromised hosts. In spite of active management the mortality due to mucormycosis remain very high till today. The common genera associated with such type of infections are Absidia, Mucor, Rhizomucor and Rhizopus. Apophysomyces elegans is relatively new in this context. It was first isolated from India in 1979 (Misra P.C. et al., 1979). Also documented in southern United States, Australia, Mexico, Carribean Islands, Columbia and Venezuela. Nearly 100 cases are reported till date and majority are from India. Most important risk factor for A. elegans infection is wound contamination with soil (Sedralis T. et al., 1997). A. elegans not only causes cutaneous or mucocutaneous infection but also associated with deep seated serious infections like rhino-orbito-cerebral and renal zygomycosis.

Case history

An 8 year old male who is a follow up case of Acute Myeloid Leukaemia presented with complaints of epistaxis, gum bleeding, swelling of the cheek and peri-orbital region with ulceration over the cheek and haemorrhagic crusted lesions over nasal ala for last five days (figure 1). He was diagnosed as AML one year back and

treated with standard chemotherapy which was completed 8 months back. He was evaluated properly and all relevant investigations were done. His complete blood count showed that he had an early relapse with presence of 45% blasts. He was febrile at presentation; broad spectrum antibiotic was started after sending the blood sample for BACTEC culture. On examination, haemorrhagic polypoid lesions were found in both nostrils, grayish white discharge mixed with blood coming out from nostrils (figure 1); swab for culture was taken from the lesion. Computed tomography scan of the paranasal sinuses revealed mucosal involvement of the paranasal sinuses along with soft tissue oedema (figure 2). His fever still persisted; antifungal (Amphotericin B) was added. Blood BACTEC yielded no growth. But, the wound swab from the nasal polyp demonstrated fungal hyphae on KOH preparation. The material was inoculated on to Sabouraud dextrose agar (SDA); there was profusely growing, creamy white, cotton woolly growth after 48 hours of incubation (figure 3a). The lacto-phenol cotton blue (LPCB) mount from plate shows sporangium of Apophysomyces elegans (figure 3b). He was continued with intravenous Amphotericine B but his condition deteriorated despite all supportive care and he succumbed to his condition.

Figure.1 Swelling of the cheek and peri-orbital region with ulceration over the cheek and haemorrhagic crusted lesions over nasal ala. Haemorrhagic polypoid lesions were found in both nostrils, grayish white discharge mixed with blood coming out from nostrils

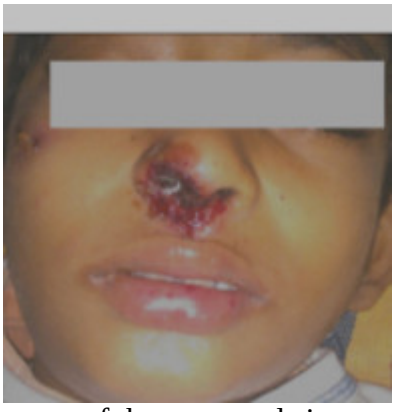


Figure.2 Computed tomography scan of the paranasal sinuses revealed mucosal thickening of the paranasal sinuses along with soft tissue oedema

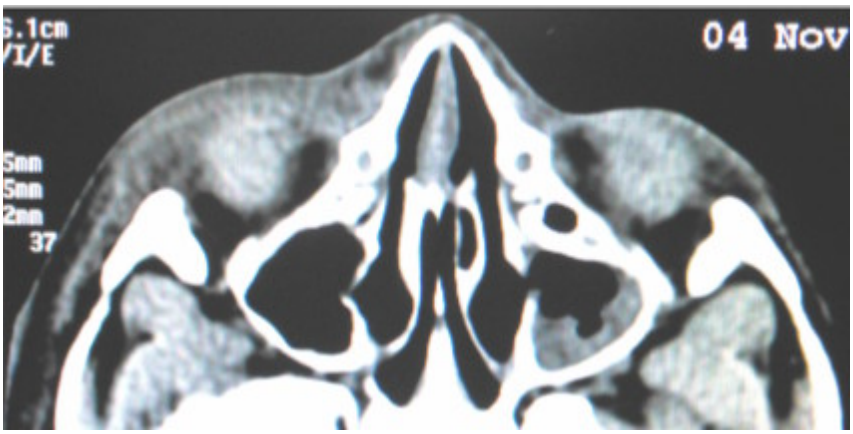


Figure.3a Material from wound swab from the nasal polyp inoculated on Sabouraud dextrose agar (SDA) showed fastly-growing, creamy white, cottony growth

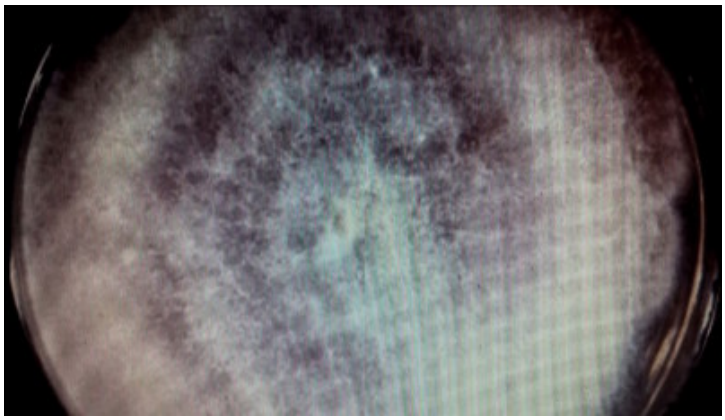
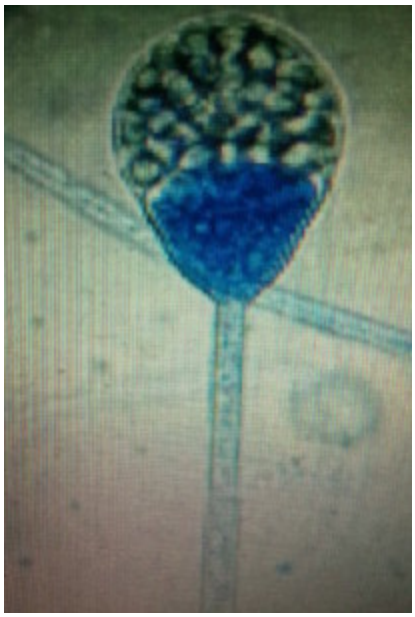


Figure.3b Lacto-phenol cotton blue (LPCB) mount from plate (fig 3a) showed sporangium of Apophysomyces elegans



Discussion

Apophysomyces elegans, a member of the order Mucorales of the class Zygomycetes, is an infrequent causative agent of zygomycosis. A. elegans was first isolated by Misra et al. in 1979 from soil samples from a mango orchard in Northern India (Misra P.C. et al., 1979). It is a rare cause of human Zygomycosis and is usually acquired via traumatic implantations, insect bites, surgery and contamination of burn wounds. Invasive soft tissue infections develop on burns or wounds contaminated by soil. *A. elegans* infections present most commonly as necrotizing fasciitis, osteomyelitis and angioinvasion (Chakrabarti A. et al, 2003). Infections caused by zygomycetes in the order Mucorales occur in immunocompromised patients who have

leukemia, lymphoma, or diabetes mellitus or in those who have undergone organ transplantation. In contrast, *A. elegans* causes cutaneous and soft tissue infection following trauma, such as burns or invasive procedures, in previously healthy patients (Radner A.B., 1995). In the present case A. elegans caused fatal soft tissue infection in an immunocompromised host. Chakrabarti A et al, 2003 pointed it to be an emerging Zygomycete in India and it slill remains true. According to Kimura M et al, successful treatment requires tissue debridement and amphotericin B (Kimura M., 1999). In the present case, Amphotericin B was started empirically and continued after sporangium of Apophysomyces elegans was isolated. Despite this, his condition deteriorated and he succumbed to his condition.

In conclusion, the possibility of *A. elegans* infection should be considered in the differential diagnosis when an immunocompromized patient is seen with spreading cellulitis, especially when there is ineffective response to standard antibacterial chemotherapy. Despite its sensitivity to amphotericin B, many do not respond well.

References

Misra, P.C., Srivastava K.J., Lata K. 1979. *Apophysomyces*, a new genus of the Mucorales. Mycotaxon., 8: 377–382.

Sedralis T., Krishnan S., and Holland J. 1997. Martini glass mucormycosis: *Apophysomyces elegans* infection in an immunocompetent host. Aust. J. Otolaryngol., 2: 600.

Chakrabarti A., Ghosh A., Prasad G.S., David J.K., Gupta S., Das A., Sakhuja V., Panda N.K., Singh S.K., Das S., Chakrabarti T. 2003. *Apophysomyces elegans*: an Emerging Zygomycete in India. J. Clin. Microbiol., 41: 783–788.

Radner A.B., Witt M.D., Edwards J.E. 1995. Acute invasive rhinocerebral zygomycosis in an otherwise healthy patient: case report and review. Clin Infect Dis 20: 163–166.

Kimura M., Smith M.B., McGinnis M.R. 1999. Zygomycosis Due to Apophysomyces elegans: Report of 2 Cases and Review of the Literature. Arch. Pathol. Lab. Med., 123: 386–390.