

## Mucormycosis with Cholesteatoma case Report



### Medical Science

**KEYWORDS :** Mucor, Cholesteatoma, Diabetes

<b>DR.HARSHPREET KAUR</b>	PATHOLOGY RESIDENT DEPARTMENT OF PATHOLOGY ,MGM MEDICAL COLLEGE,KAMOTHE –NAVI MUMBAI 410209
<b>DR.SHILPI SAHU</b>	ASSOCIATE PROFESSOR PATHOLOGY DEPARTMENT OF PATHOLOGY ,MGM MEDICAL COLLEGE,KAMOTHE –NAVI MUMBAI 410209
<b>DR.REETA DHAR</b>	HEAD OF DEPARTMENT,PATHOLOGY DEPARTMENT OF PATHOLOGY ,MGM MEDICAL COLLEGE,KAMOTHE –NAVI MUMBAI 410209
<b>DR.PRIYANKA</b>	ASSISTANT PROFESSOR PATHOLOGY DEPARTMENT OF PATHOLOGY ,MGM MEDICAL COLLEGE,KAMOTHE –NAVI MUMBAI 410209

### ABSTRACT

*Mucor is a saprophytic organism which invades the nose and paranasal sinuses of immuno compromised and diabetic patient. Mucormycosis is rare fungal infection caused by mucor species, rhizopus and anr idia species. Among the conditions predisposing to Mucormycosis are diabetes mellitus, malnutrition, hematological malignancies, neutropenia, burns, surgical procedures, long term steroid therapy and immunosuppressive therapy. A 50 years old male came with a history of discharge and pain in right ear since 15 days. Microscopically diagnosis of mucormycosis with cholesteatoma was given.*

#### Introduction:

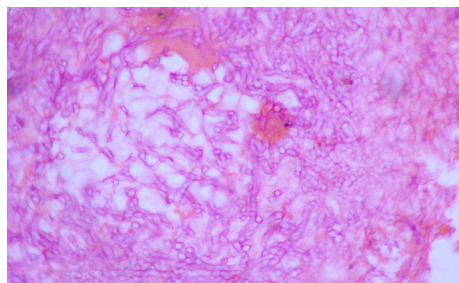
Mucormycosis is an emerging angioinvasive infection caused by ubiquitous filamentous fungi of Mucorales order of class of Zygomycetes. Mucormycosis has emerged as the third most common invasive mycosis in order of importance after candidiasis and aspergillosis in patient with hematological and allogeneic stem cell transplantation<sup>[1]</sup>. Mucormycosis remains difficult to treat and requires a multifaceted approach involving elimination of predisposing factors, surgical debridement and antifungal therapy. Lipid formulation of amphotericin B are the treatment of choice.<sup>[2]</sup>

#### Case Report:

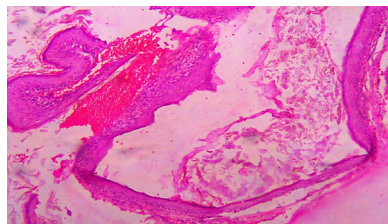
50 year old male came to MGM Medical college, kamothe with history of pain in right ear and discharge since 15 days. Patient also had a complaint of fever with chills and rigors since 3 days. He was diagnosed a case of poorly controlled diabetes mellitus since 2 years and was on oral hypoglycemic drugs and insulin therapy.

#### Biopsy sample

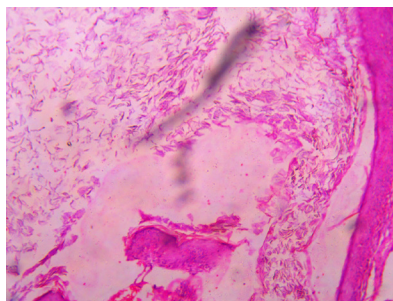
taken from the Right ear shows following microscopical features of mucormycosis –broad branched thin wall non septate hyphae at right angle seen in tangled walls. The following microscopical features of cholesteatoma were seen-Stratified squamous epithelium lining along with laminated flakes of keratin.(Figure 1 and Figure 2) . Biochemical Investigation revealed elevated blood sugar with random blood sugar 300 mg/dl, WBC Count -3500/ cubic mm with 90% neutrophils and 10% lymphocytes. Patient was on antibiotic therapy with combination of Amoxicillin and Clavunic acid. Blood sugar was maintained with oral hypoglycemic and insulin therapy.



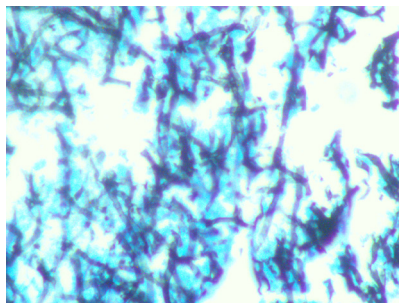
**Figure 1:** H&E Stained section shows broad branched thin walled non septate hyphae at right angle seen in tangled walls.(Higher Magnification -40x)



**Figure 2:** H&E Stained section show features of cholesteatoma -stratified squamous epithelium with laminated flakes of keratin.(Higher Magnification-40x)



**FIGURE 3:** H&E Stained section shows Stratified squamous epithelium with laminated flakes of keratin(Higher Magnification-40x)



**Figure 3:**GMS Stain Positive: H&E Stained section shows Broad branched thin walled non septate hyphae at right angle(Higher Magnification-40x)

**Discussion:**

Mucormycosis is manifested by variety of different syndromes in humans predominantly in immunocompromised patients and those with diabetes mellitus. Devastating Rhinoorbital and pulmonary infection are most common caused by fungi .

Genera most common found in humans are *Rhizopus* , *Mucor* and *Rhizomucor*.

Mucormycosis - Infarction and necrosis of host tissue result from invasion of vasculature by hyphae.

The diagnosis of mucormycosis relies upon identification of organism in tissue by histopathology with culture confirmation.

However culture often yields no growth and histopathological identification of agent of mucormycosis may provide the only evidence of infection.

**Conclusion:**

We are presenting this case of rarity of infection of mucormycosis with cholesteatoma. Due to potential fatality by mucormycosis in uncontrolled diabetes an early diagnosis is essential . Hence in immunocompromised /diabetic patients with complaints of ear discharge a thorough screening for fungal infections making use of special stains in addition to routine hematoxylin and eosin stain in histopathological studies should be done.

**REFERENCE**

1. Spellberg B, Edwards J Jr, Ibrahim A. Novel perspectives on mucormycosis: pathophysiology, presentation, and management. *Clin Microbiol Rev* 2005; 18:556–69. |
2. Prabhu RM, Patel R. Mucormycosis and entomophthoromycosis: a review of the clinical manifestations, diagnosis and treatment. *Clin Microbiol Infect* 2004; 10(Suppl 1):31–47. |
3. Ribes JA, Vanover-Sams CL, Baker DJ. Zygomycetes in human disease. *Clin Microbiol Rev* 2000; 13:236–301. |
4. Lass-Flo`rl C. Zygomycosis: conventional laboratory diagnosis. *Clin Microbiol Infect* 2009; 15(Suppl 5):60–5. |
5. Kontoyiannis DP, Vartivarian S, Anaissie EJ, Samonis G, Bodey GP, Rinaldi M. Infections due to *Cunninghamella bertholletiae* in patients with cancer: report of three cases and review. *Clin Infect Dis* 1994; 18:925–8. |
4. Olalla I, Ortin M, Hermida G, Cortes MA, Richard C, Iriando A, |
- Mozota ML, Zubizarreta A (1996) Autologous peripheral blood | stem cell transplantation in a patient with previous invasive middle | ear mucormycosis. *Bone Marrow Transpl* 18(6):1183–1184 |
5. Yun MW, Lui CC, Wj Chen (1994) Facial paralysis secondary to | tympanic mucormycosis: case report. *Am J Otolaryngol* 15(3): | 413–414 |
6. Bergstrom L, Hemenway WG, Barnhant RA et al (1970) Rhinocerebral | and otologic mucormycosis. *Ann Otol Rhinol Laryngol* | 79:70–81 |
7. Gass JDM (1961) Ocular manifestation of acute mucormycosis. | *Arch Ophthalmol* 65:226–237 |
8. Joe LK, Eng NI, Tyokronegord J et al (1959) Phycomycosis of | central nervous system associated with diabetes mellitus in | Indonesia. *Am J Clin Pathol* 32:62–70 |
- central nervous system. *J Neurosurg* 23:82–84 |
10. Sekhar LN, Duzvuy M, Rao GR (1980) Carot | idcavernous sinus thrombosis caused by *Aspergillus fumigatus*. *J Neurosurg* 52: | 120–125 |