



Otorhinolaryngology

MUCORMYCOSIS : DIAGNOSTIC DILEMMA

**Dr. V. Saravanan** Associate Professor, ENT

**Dr. J. Ezhilarasan** Assistant Professor ENT

**Dr. Ajith M** Junior Resident ENT

**Dr. M. Sivakumar\*** Assistant Professor ENT \*Corresponding Author

**ABSTRACT** **Objective:** To emphasize the importance of clinical findings and radiological findings in the context of negative histopathology. **Methodology:** Among 400 cases admitted in our hospital for invasive fungal sinusitis, 40 patients had normal DNE but symptoms and radiological findings suggestive of invasive fungal sinusitis and were taken up for biopsy and surgery. Biopsies came as negative but not improved symptomatically. Empirical antifungal therapy was started based on clinical findings and radiology and patients improved symptomatically. **Results:** Patients with clinical and radiological features of invasive fungal sinusitis with normal DNE and negative histopathology responded well with IV antifungals after surgery. **Conclusion:** Diagnosis of Invasive fungal sinusitis is challenging and is based on clinical ,radiological and positive histopathology. Histopathology is not the single best criteria to diagnose mucormycosis. Even if histopathology is negative,patient can be treated as mucormycosis if there is strong clinical and radiological evidence

**KEYWORDS :** fungal sinusitis, negative histopathology.

**INTRODUCTION**

Mucormycosis is a rare but life threatening fungal infection caused by fungal species of class zygomycetes, most commonly caused by rhizopus. Mucormycosis is common among immunocompromised, diabetic patients . Categorized into rhinocerebral, pulmonary, cutaneous, gastrointestinal or disseminated depending on the organ involved.

**AIM AND OBJECTIVES**

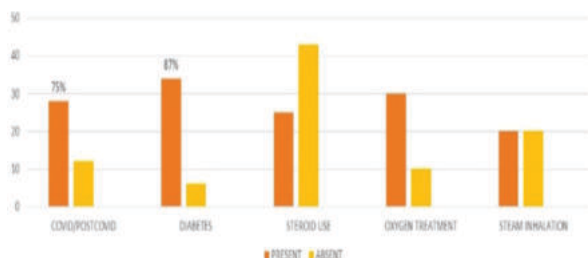
To study the response to anti-fungal therapy in patients with clinical and radiological features of invasive fungal sinusitis but negative histopathology.

**MATERIAL AND METHODS**

This study was conducted at Coimbatore Medical College in the Department of ENT. Around 400 cases were admitted in our tertiary care hospital for invasive fungal sinusitis during covid pandemic. Among them 40 patients had normal DNE but symptoms and radiological findings were suggestive of invasive fungal sinusitis . These patients were taken up for biopsy and endoscopic sinus surgery. Biopsy came as negative for fungal sinusitis but there was no symptomatic improvement in these patients following surgery. Extensive debridement with repeat biopsies also came as negative. Empirical antifungal therapy was started .Patients improved symptomatically following antifungal therapy.

**Table 1: Predisposing Factors**

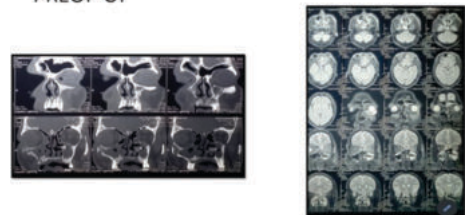
PREDISPOSING FACTORS	PRESENT	ABSENT
COVID/POSTCOVID	28	12
DIABETES	34	6
STEROID USE	30	10
OXYGEN TREATMENT	25	15
STEAM INHALATION	20	20



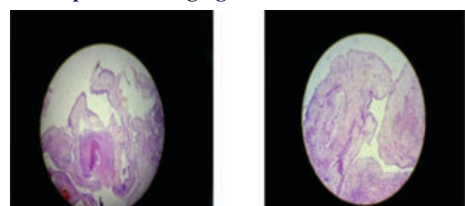
**Table 2: Symptomatology**



**Figure 1: Preoperative Clinical Imaging**



**Figure 2: Preoperative Imaging**



**Figure 3 : Histopathology Image**

**RESULTS**

Patients with clinical and radiological features of invasive fungal sinusitis with normal nasal endoscopy findings and negative histopathology responded well with IV antifungals after surgery.

**AFTER AMPHOTERICIN IMAGES**

**Figure 4 : Post Amphotericin Images**

**DISCUSSION**

Chronic invasive fungal sinusitis (CIFS) is a rare but potentially life-threatening disease. It is generally found in immunosuppressed patients most often secondary to diabetes but has been reported in the context of AIDS, corticosteroid use, solid organ transplants, and renal failure. Diagnosis of CIFS is challenging. Symptoms are nonspecific and range from facial pain to vision loss. Computed tomography (CT) may show soft tissue opacification, air-fluid levels, mass lesions, or bony erosions and is often mistaken for a malignant disease. Often pathology samples and biopsies may be negative for fungal organisms due to the nature of the disease. Treatment for CIFS consists of reversal of any underlying immunosuppression, surgical debridement, and systemic antifungal therapy. In cases with negative histopathology, further options are needed to help diagnose such difficult cases.

**SUMMARY AND CONCLUSION**

Diagnosis of Invasive fungal sinusitis is challenging and is based on clinical, radiological and positive histopathology. Although Histopathology is the single best criteria to diagnose mucormycosis. Even if histopathology is negative, patient can be treated like mucormycosis if there is strong clinical and radiological evidence.

**REFERENCES**

1. Deshazo RD. Syndromes of invasive fungal sinusitis. *Med Mycol.* 2009;47(suppl 1):S309–314.
2. Morgand M, Rammaert B, Poirée S, et al. Chronic invasive aspergillus sinusitis and otitis with meningeal extension successfully treated with voriconazole. *Antimicrob Agents Chemother.* 2015;59(12):7857–7861.
3. Pekala KR, Clavenna MJ, Shockley R, Weiss VL, Turner JH. Chronic invasive fungal sinusitis associated with intranasal drug use. *Laryngoscope.* 2015;125(12):2656–2659.