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Otorhinolaryngology

Diabetes Mellitus Causing Rare Disease – Mucormycosis of Neck

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Abstract **Case Report**

Mucormycosis is a serious and a rare clinical entity often seen in immunocompromised patients. It is caused by ubiquitous filamentous fungi of the mucorales, order of the class of zygomycetes. Being an angioinvasive fungal infection, mortality rates are high. The infection is spread by inhalation of spores or by direct inhalation of fungus into the damaged skin or mucosa. It can be classified as one of the 6 forms- 1) Rhinocerebral 2) Pulmonary 3) Gastrointestinal 4) Cutaneous 5) Disseminated 6) Unusual presentation. Culture and histopathological examination are imperative in providing the correct diagnosis thus reducing its mortality and morbidity. We report a case of mucormycosis of neck in a diabetic patient. A 51 year old man, with h/0 uncontrolled diabetes mellitus complaints of painless, non – mobile, progressive swelling in the right lateral aspect of neck with laryngeal crepitus. Biopsy revealed a granulomatous condition suggesting of slow growing fungi of the mucor family. He was treated with liposomal intravenous amphotericin B and surgical debridement of the neck mass was done. He was discharged on syrup posaconazole.

Keywords: Diabetes mellitus, mucormycosis.

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INTRODUCTION

Mucomycosis is an acute life threatening opportunistic fungal infection caused by saphrophytic fungi belonging to class zygomycetes, order mucorales, family mucoraceae [1]. The most common isolated genera are rhizopus, rhizomucor, absidia. [2,3,4] It was first described by Paultauf in 1885 [5] and it is the third common fungal infection after candidiasis and aspergillosis in immunocompromised patients. Six different clinical forms- rhinocerebral, pulmonary, cutaneous, gastrointestinal, disseminated miscellaneous are described on the basis of anatomical location[6]. The risk factors include diabetes mellitus, neutropenia, malignancy, malnutrition, renal failure, immunosuppressive disease [6]. Being an angioinvasive condition, it invades the arteries, forms thrombi within the blood vessels thus reducing blood supply and causing necrosis of hard and soft tissues. For a good prognostic outcome early diagnosis and initiation of therapy is required [7].

CASE REPORT

A 51 year old gentleman presented to the OPD complaining of painless, gradually progressive, swelling in the right lateral aspect of neck for the past 6 months. Surgery was done for the neck swelling 2 years back but it recurred again. He was a known diabetic with poor control of sugars for the past 10 years. There was no history of loss of weight, evening rise of temperature. On general examination, there was no pallor, icterus, cyanosis, clubbing or lymphadenopathy. A 15*18 cm, firm, non-mobile swelling was present on the right side of the neck extending medially 1 cm from the midline. The swelling was non-expansile, non – reducible, non- compressible. Laryngeal crepitus was present. Routine investigations were normal. Fasting blood sugar was 130 mg%, post-lunch sugar was 290 mg%. HIV-1, HIV-2, Hepatitis B surface antigen, Veneral disease research laboratory (VDRL) was negative. Histopathological examination of the biopsy revealed a granulomatous condition suggestive of slow growing fungi of the mucor family. Broad non- septate hyphae were seen (fig-1,2) in PAS stain and in GMS stain .He was started on liposomal amphotericin B along with insulin to control sugar levels. Surgical debridement of the neck mass was done. He was discharged on syrup posaconazole and is showing good response to therapy.

Fig-1: Broad non-septate hyphae seen on PAS stain

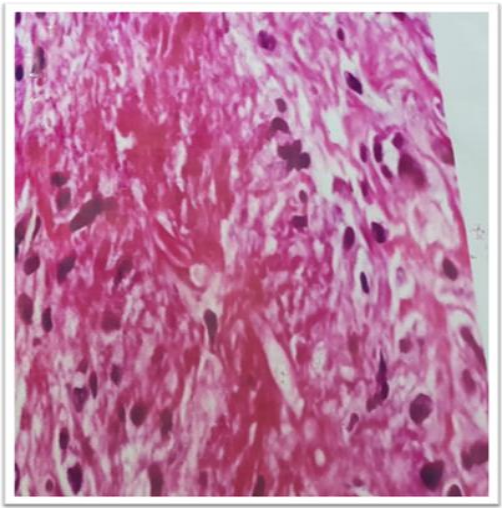

Fig-2: Broad non-septate hyphae seen on PAS stain

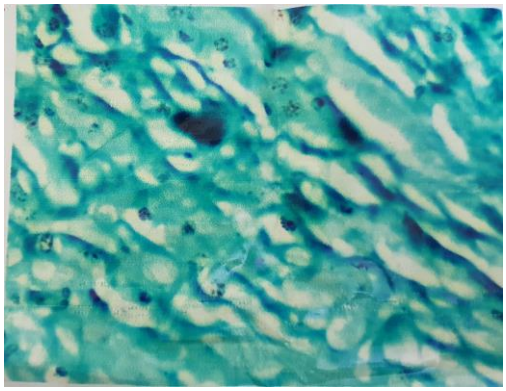

Fig-3: Broad non-septate hyphae on GMS stain

DISCUSSION

Mucormycosis is a rare, angioinvasive infection seen in developing countries following uncontrolled diabetes mellitus caused by molds including Rhizopus, Absidia, Mucor [2-4]. Mucormycosis can be caused by inhaling spores produced by the molds or entry through a break in the skin. Inhalation of the spores can invade the nose, sinuses, eyes, brain causing rhinocerebral

mucormycosiss, can enter the lungs, causing pulmonary mucormycosis and can get swallowed when inhaled causing infection in the digestive tract. When the infection results from the spores entering through a break in the skin causing cutaneous mucormycosis. Mucormycosis doesn't spread from person to person. Rhinocerebral mucormycosis may cause pain, fever, sinus infection,proptosis, decreased vision, destruction of the roof of the mouth, nasal septum, facial bones surrounding the eye socket, sinuses and it leads to dead tissue turning black [8]. Pulmonary mucormycosis causes fever, cough, breathing difficulty. Cutaneous mucormycosis causes skin to become warm red, swollen forming ulcers, blisters and tissue turning black. Clinical differentials of lesion should include squamous cell carcinoma, chronic granulomatous infection such as tuberculosis, tertiary syphilis, midline lethal granuloma, and other deep fungal infections [9]. Investigations include CT with contrast or Magnetic resonance imaging showing erosion or destruction of bone and help to know the extent of disease. Histopathologically, the lesion demonstrates broad aseptate fungal hyphae that show branching at right angle. Medical management includes administration of amphotericin B and and surgery is done in most of the patients to remove dead and infected tissue.

CONCLUSION

Mucormycosis is an aggressive fulminant invasive fungal infection occurring in patients with precipitating factors such as uncontrolled diabetes mellitus, renal failure, organ transplant, malignancies, AIDS, immunosuppressive therapy. Mucormycosis should be considered as a differential diagnosis for swellings in the neck in immunocompromised individuals. Attempts should be made for early diagnosis of the disease and the prompt management of the patient.

REFERENCES

1. Marx RE, Stern D. Oral and Maxillofacial Pathology. 1 st ed. Hanover Park, IL: Quintessence Publishing. 2003: 104-6.
2. Tierney MR, Baker AS. Infections of the head and neck in diabetes mellitus. Infect Dis Clin North Am. 1995;9:195-216
3. Tyson J, Gittelman PD, Jacobs JB, Holliday R, Press R. Recurrent mucormycosis of the paranasal sinuses in an immunologically competent host. Otolaryngol Head Neck Surg. 1992;107:115-9.
4. Peterson KL, Wang M, Canalis RF, Abemayor E. Rhinocerebralmucormycosis. Evolution of the disease and treatment options. Laryngoscope. 1997;107:855-62
5. Paltauf A. Mycosis mucorina. Virchows Archiv. 1885 Dec 1;102(3):543-64.
6. Sugar AM. Mucormycosis. Clinical infectious diseases. 1992 Mar 1;14(Supplement_1):S126-9.
7. Decker BC. Burket's: Text book of oral medicine, 11 th ed. Philadelphia: PMPH-USA. 2007: 253
8. Rebecca J. Frey. Mucormycosis. Health A to Z. Retrieved May 19, 2008.
9. Doni BR, Peerapur BV, Thotappa LH, Hippargi SB. Sequence of oral manifestations in rhino-maxillary mucormycosis. Indian Journal of Dental Research. 2011 Mar 1;22(2):331.