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Rhino Orbito Cerebral Mucormycosis in a Diabetic Patient – A Rare Case Report

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Introduction:

Mucormycosis is caused by several fungal species in the order mucorales which are commonly found in soil and among decaying vegetation[1]. Rhinoorbito cerebral mucormycosis is usually seen in diabetics especially in ketoacidosis[2]. It is an invasive fungal infection initiated in the paranasal sinuses and frequently progress to involve the orbit and brain. If recognized early involvement can be limited to nasal cavity and paranasalsinuses[3]. In suspected cases of rhino orbito cerebral mucormycosis improvement of predisposing diseases, radical surgical debridement and effective systemic antifungal therapy must be instituted immediately. Absences of intracranial or orbital extension are indicators of good prognosis[4].

Case Study:

39 year old female with diabetes mellitus of 10 year duration presented with right facial edema, headache, nasal obstruction, nasal discharge, periorbital cellulitis and ophthalmoplegia. Patient had edema of gums and discharge from premolar socket. A complete blood count showed leukocytosis. Patients' blood sugar levels were FBS-250 mg/dl PPBS-380 mg/dl. The patient had neither ketosis/acidosis. Nasal fossae endoscopy-necrotic mass lesion found. Blood cultures were negative for aerobic and anaerobic bacteria. Biopsy samples obtained from nasal eschar showed the picture of mucormycosis-broad non septate hyphae branching at right angles as well as spore formation. CT scan revealed porotic and lytic changes in right maxilla with surrounding soft tissue component suggestive of osteomyelitis with impending oroantral fistula. Soft tissue in inferior aspect of right orbit with thickened inferior rectus muscle. Patient was administered IV liposomal amphotericin B [3 mg/kg per day]. Surgical debridement was advised for which the family was not willing. Patients clinical condition showed progressive deterioration. The patient developed recurrent episodes of seizures. CT of brain showed non haemorrhagic infarct involving right temporal lobe. Patient finally expired one week after admission.

Discussion:

Mucormycosis in humans is usually initiated by inhalation of spores or more rarely by digestion or percutaneous inoculation. Patients with uncontrolled hyperglycaemia particularly those with ketoacidosis are the most susceptible[5]. Based on anatomic localization, mucormycosis can be rhinocerebral, pulmonary, cutaneous or disseminated. The three most commonly encountered species are rhizopus, mucor and absidia[6]. Initially majority of patients complain about typical symptoms of acute rhinosinuisitis[7]. Facial and cerebral CT is the essential. Generally infection starts in nasal tissues and spreads by direct extension through the superior orbital vein, superior orbital fissure or the cribriform plate. Early CT imaging is usually unimpressive. This infection affects people with haematological malignancy, corticosteroid or immunosuppressive therapy, diabetes mellitus with or without ketoacidosis, organ transplantation, desferoxamine therapy, severe burns, trauma and malnutrition[8]. Mainstays of therapy are reversal of

immunosuppression, systemic amphotericin B and surgical debridement.

Conclusion:

Rhino orbito cerebral mucormycosis is an acute opportunistic infectious disease which predominantly occurs in diabetic patients. Clinical diagnosis is often difficult in its earliest stages masking the aggressive nature of the disease. Management of patients suffering from mucormycosis includes early diagnosis, good glycaemic control, aggressive surgical debridement and high doses of amphotericin B.

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