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RHINO-OCCULO-CEREBRAL MUCORMYCOSIS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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ABSTRACT:

An interesting case of rhino-occulo-cerebral mucormycosis [ROCM] in patients suffering from type 2 diabetes mellitus is described in this article.

The clinical presentation is given in details. The need for high degree of suspicion, prompt diagnosis and complete surgical evacuation of inflammatory mass; and prompt initiation of antifungal therapy is discussed. The side effects associated with amphoterecin and issue regarding its total dosage is discussed.

Key words: Rhino-occulo-cerebral mucormycosis, Type 2 Diabetes Mellitus

INTRODUCTION:

Mucormycosis is an aggressive, opportunistic fungal infection caused by organisms belonging to the class of Phycomycetes. Mucormycosis occurs almost exclusively in immunocompromised patients e.g. uncontrolled diabetics, those on chemotherapy and steroids. Rhino-occulo-cerebral mucormycosis (ROCM) is the commonest anatomical presentation of mucormycosis and is a potentially fatal disease. Despite advances in diagnosis and management, mortality rates are high. In a large series of 35 patients reported from Chandigarh, India, and in metaanalysis by Yohai et al, it was shown that survival rate declines as the interval from the onset of symptoms to the time of diagnosis increases.1,2 High degree of suspicion, early diagnosis and prompt aggressive surgical evacuation of the inflammatory material along with amphoterecin therapy can save lives as indicated by 75% cure rate in our current series.

CASE PRESENTATION:

A sixty five years male, diabetic for 13 years and poorly controlled in spite of insulin therapy, was admitted with history of throbbing headache and pain in right eye of 4 weeks duration. At admission, he had watery discharge from right eye and purulent discharge from right nostril. Examination showed complete ophthalmoplegia and inflamed and edematous anterior chamber of right eye, tenderness over right maxillary sinus. Sino-scopy confirmed severely inflamed right maxillary sinus. Total WBC count was 12800 cells/cumm, random plasma glucose was 348 mg% and serum creatitine was 1.2 mg%. Urgent CT scan of paranasal sinuses showed pansinusitis with erosion of floor and medial wall of the orbit. Urgent sinoscopy was performed and inflammatory material was evacuated and sent for smear, culture and biopsy. Smear showed aseptate hyphae with sporangiophores. Histopathological examination subsequently confirmed the diagnosis. IV infusion of

amphoterecin was started after a test dose and based on weight and tolerance, daily dose was gradually increased. He tolerated amphoterecin very poorly and developed several side effects such as severe rigors, vomiting, sinus bradycardia followed by atrial fibrillation, in spite of very gradual increase in daily dose. Patient received a total dose of 589 mg of amphoterecin and at this stage repeat CT scan of sinuses showed considerable regression of soft tissue in paranasal sinuses. He took discharge on request at this stage. He has been very closely followed up for five years and is totally cured of ROCM.

DISCUSSION:

Mucorales grow on decaying organic debris and occur worldwide in soil. Mucormycosis is an opportunistic infection which spreads by direct as well as haematogenous dissemination. It is a suppurative infection with vascular invasion resulting in to thrombosis, embolism and infarction.

ROCM in poorly controlled diabetics carries high mortality. Seemingly trivial symptoms such as unilateral nasal blockage, discharge, and headache should not be ignored.3 Early clinical findings include nasal congestion and discharge, painful swelling of the orbit and face and proptosis, usually unilateral. Involvement of III, IV, VI and ophthalmic division of V cranial nerve is not uncommon. Clinical features often resemble those of cavernous sinus thrombosis. The cases described above had typical presentation. Their age ranged from 58 to 70 years. All had longstanding type 2 diabetes with poor metabolic control at the time of admission. The duration of symptoms ranged from four days to four weeks. High degree of suspicion, prompt diagnosis, availability of senior ENT and ophthalmic surgeons on emergency basis and good coordination between diabetologist and above mentioned surgical specialists, and aggressive medical (amphoterecin, glycemic control) and surgical treatment (extensive debridement of the affected tissues] can give gratifying results4 as obtained in our series, where mortality was limited to twenty-five percent.

The exact dose of amphoterecin for effective eradication of ROCM is not known. Western literature mentions 1 to 1.5 m/kg body weight daily till a maximum of 3 gm is reached.5 We observed that our patients require much smaller dose and their tolerance of conventional amphoterecin is extremely poor. Two out of three patients who survived, had complete clinical as well as radiological resolution as assessed by CT scan by the time they received around 600 mg of amphoterecin. At this stage both took discharge on request and were followed up on outpatient basis over a long term. Liposomal amphoterecin, which is less toxic, is beyond the reach of most of them.

CONCLUSION:

ROCM is not uncommon in poorly controlled diabetics. One should keep it in mind and investigate patients with suggestive nasal and ocular clinical manifestations, particularly in those with poor control of plasma glucose. Early diagnosis and prompt medical and surgical management can save lives.

Total dose of amphoterecin for complete eradication of ROCM is probably much lower than that mentioned in the Western literature.

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