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Letter to Editor

Paediatrics Section

A Multimodal Approach is Necessary to Manage Mucormycosis in Patients with Diabetes

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Dear Editor,

The recent article by Biradar S et al., made for an interesting read [1]. The authors have described a patient who developed rhino-sinus and pulmonary mucormycosis and was successfully treated without surgical intervention. This patient had predisposing factors critical to develop the Invasive Filamentous Fungal Infection (IFI); a poorly controlled diabetic state and the presence of ketoacidosis [2]. The diagnosis was rightly suspected and the antifungal treatment was initiated appropriately. However, there are two curious aspects in diagnosis and treatment that need further discussion and understanding.

The case description suggests that the diagnosis of pulmonary mucormycosis was easily made on sputum examination that showed fungal elements on KOH mount. However, the morphological description of broad aseptate hyphae with right-angled branching characteristic of mucormycosis was not mentioned. As the name indicates, IFIs particularly mucormycosis are angioinvasive and tissue invasive and are rarely found in superficial secretions. For this reason only, tissue specimens from lung biopsy or Fine Needle Aspiration Cytology (FNAC) are recommended when the clinical suspicion is high [3]. The need for invasive procedures for confirmation of diagnosis often result in delays in establishing a diagnosis of IFIs [3].

The second aspect is regarding the treatment of mucormycosis. It is now believed that a multimodal approach that involves establishing an early diagnosis, aggressive surgery, appropriate antifungal therapy and control of the underlying diabetic state is crucial to survival outcome in mucormycosis [4]. The authors themselves discussed that amphotericin B and surgical debridement are the mainstay of treatment. However, the patient description does not mention if surgical debridement was considered or offered to the patient. The outcome of rhinosinus mucormycosis is particularly good after surgical debridement (endoscopic or open method) which is relatively easy to undertake [5]. Without surgery, patients often succumb to the fatal haemorrhages resulting from the angioinvasion of the major vessel walls by mucormycosis in the involved areas. Use of antifungals alone is usually ineffective due to poor concentrations in affected tissues resulting from vascular invasion, thrombosis, occlusion and infarction [3]. Although there are isolated reports of patient survival with high dose liposomal amphotericin B or posaconazole, expecting a cure using antifungals alone is like sitting on a ticking time bomb and wishing that it does not explode. Our experience of treating mucormycosis in children with type 1 diabetes suggests that a good outcome is possible only with a multimodal approach [4,5]. Of the 10 patients managed over a period of 10 years, surgery could not be performed in 2 patients; one of these died of a massive haemoptysis while the other one who refused surgery survived after high dose amphotericin B [4]. The reason why surgery was not considered in the index patient should have been discussed. Also, the addition of information on glycosylated haemoglobin (HbA1c), days to confirm IFI and start antifungal therapy, sinus imaging if available will be useful to the readers and will make the report complete.

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