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Commentary

Commentary on “Mucormycosis co-infection in the context of global COVID-19 outbreak: A fatal addition to the pandemic spectrum” (Int J Surg 2021, 92:106031) – A pulmonary perspective


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Dear Editor,

Indeed COVID-19 associated Mucormycosis (CAM) is an unfortunate sequel to the pandemic; akin the aftershocks to an earthquake. The article published in the Journal previously addresses how co-infection can contribute to cumulative increase in the mortality of patients even after the viral disease [1]. India has borne the brunt of the disease and though rhinocerebral mucormycosis is the more popularly known entity, the challenge of treating pulmonary mucormycosis is becoming an equally difficult task.

Pulmonary mucormycosis generally presents with cavitating lung lesions with classically described radiological signs by some clinicians as the ‘bird’s nest’ sign and the ‘reverse halo’ sign [2]. Patients with these cavitating lesions often present with cough and muddy sputum which is almost pathognomonic of this condition. (Fig. 1). As an aggressive cavitating lesion, patients may present with hemoptysis, which at times is life-threatening. Patients may further progress to develop hydro-pneumothoraces when these lesions open into the pleura and the parenchymal lesion is in communication with bronchi, leading to a broncho-pleural fistula.

Principles of management of mucormycosis, as outlined in the published quoted article above, remain the same: control the glycemic status of patients, early microbiological diagnosis, early initiation of anti-fungal agents, appropriate surgical intervention and management of complications. Anti-fungal treatment includes an early sterilizing course of Amphotericin B followed by oral drugs, as per patient stability. The better tolerated liposomal Amphotericin B at doses of 5 mg/kg as an “induction” agent should be followed where available. After a few weeks of treatment and when patients become stabilized clinico-radiologically, a switch to oral drugs like Posaconazole or Isavuconazole can be done. Both these oral drugs, however, are ideally not to be considered as the first-line therapy and they should be considered for salvage therapy in refractory patients [3]. In the absence of a response to the initial intravenous therapy, clinicians must carefully weigh the options of continuing chemotherapy alone versus considering an operative

treatment for the patient.

Head and neck lesions, when operated upon, can lead to poor cosmetic outcomes. Lung lesions, au contraire, should not have disfiguring outcomes, but in balance have much more treacherous peri-operative periods.

Surgery for pulmonary mucormycosis mostly entails lobectomies and pneumonectomies. In the post-COVID patient, tolerance of anaesthesia and persistent diffusion defects make prediction of appropriate post-operative pulmonary function even more tricky [4]. Pre-operative pulmonary function analysis may in itself be fraught with difficulties where patients with post-COVID cough are unable to perform pulmonary function tests appropriately. Clinicians face the risk of a progressive disease versus the risk of post-operative mortality or prolonged ventilatory support. The other surgical procedures include bronchopulmonary fistula closure, decortication for fungal empyemas and abdominal surgeries when there is contiguous spread; each has their appropriate settings.

In the absence of guidelines, it remains to be identified as to when it is most appropriate to operate a patient with a fistula given the prolonged nature of antifungal treatment and the questionable success rates. It also remains to be identified as to what actually lead to this avalanche of mucormycosis cases. Thereby, if a patient has undergone surgical eradication of the disease, clinicians still face the perplexing question of duration of post-operative antifungal treatment.

Lung resectional surgeries, even in the absence of post-COVID lungs, are not a straight-forward task. However the outcomes with surgery in localized disease has been shown to be superior to anti-fungal therapy only [5]. Hence, appropriate selection of patients is important for operative success.

Post-procedure rehabilitation is crucial and its role in COVID survivors assumes even greater significance. Post-COVID interstitial involvement and some persistent myocardial dysfunction can further complicate an already challenging post-operative period.

Thus, it is suitable to discuss cases of pulmonary mucormycosis at an inter-disciplinary meeting, involving pulmonologists, thoracic surgeons,

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Fig. 1. A patient holding a sputum mug showing the characteristic muddied sputum of pulmonary mucormycosis.

physiotherapists and anaesthesiologists. The team should chart an appropriate timeline for treatment and the decision for surgery should not be delayed unreasonably. A ‘nick’ in time, may save nine.

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