中文題目：在一位第二型糖尿病併末期腎病患者之侵入性白黴菌鼻竇炎病例報告及文獻回顧

英文題目：Invasive mucormycosis sinusitis in a diabetic end-stage renal disease patient, case report and article review

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Back ground: Mucormycosis is a rare angioinvasive infection caused by the ubiquitous filamentous fungi of the Mucorales order of the class of Zygomycetes, found in soil, decaying vegetation and other organic matter. Devastating rhino-orbital-cerebral and pulmonary infections are the most common syndromes caused by these fungi, particularly in immuno-compromised patients and those with diabetes mellitus. Owing to delayed diagnosis and inadequate treatment, the overall mortality of mucormycosis was as high as 40-50% in the long-term following up.

The most common pathogens of mucormycosis include Rhizopus, Rhizomucor, and Lichtheimia. The clinical hallmark of invasive mucormycosis is tissue necrosis resulting from angioinvasion and subsequent thrombosis. In microscopy, GMS (Gomori's methenamine silver) and PAS (periodic acid-Schiff) staining reveal broad-based, irregular, ribbon-like, nonseptate hyphae with irregular branching that may occur at right angles. The best management is frequently debridement with adequate anti-fungal therapy.

Case presentation: A 67-year-old man who was diagnosed with hypertension, coronary artery disease and type 2 diabetic mellitus that was poorly controlled visited our hospital due to generally weakness, nausea, and vomiting for weeks. In addition, he had fever and toothache for 1 week. He was a taxi driver and began farming after retirement. On admission, laboratory examination showed that his creatinine was 13.0 mg/dl, BUN was 140.0 mg/dl and his HbA1C was 10.6 % , renal sonography showed right renal 11cm and left renal 9cm in size, thus hemodialysis was initiated. However, fever and leukocytosis persisted and the infection source was unable to identify, inflammatory scan was then arranged and revealed inflammatory process over right maxillary, ethmoid and sphenoid sinuses, right infratemporal fossa and obstruction of ostiomeatal complexes. Followed endoscopic biopsy showed mucormycosis in tissue staining, and simultaneous tissue culture showed Klebsiella pneumonia and candida tropicalis. Therefore, liposomal amphotericin-B antifungal combined with Clavulanic acid was started. Besides, the patient received three times of endoscopic bilateral multiple sinusectomy and debridement. During the treatment

course, the mucormycosis complicated with cerebral-synovial fluid leakage, right temporal bone osteomyelitis with severe headache, and nasopharyneal vessel invasion with active bleeding. The patient is now still under posaconazole antifungal therapy10 months after diagnosis.

Conclusion: Mucormycosis sinusitis is a lethal fungal infection. Given the rapidly progressive nature and the high mortality rate when the fungus penetrates the cranium, any diabetic patient with a headache/toothache and fever is a candidate for evaluation using imaging studies and nasal endoscopy to rule out mucormycosis.

Key words: Mucormycosis