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An unusual cause of renal failure: Disseminated mucormycosis

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Renal mucormycosis is a rare but important cause of acute renal failure in critically ill patient. However, control of underlying condition, intravenous Amphotericin B and debridement of infected tissues may be life saver.

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Brief Report

1. Case

A 68 year old man on chronic steroids for chronic obstructive pulmonary disease (COPD) was admitted intensive care unit (ICU) for a drop in hemoglobin and hypotension. An upper gastrointestinal (GI) endoscopy revealed active bleeding from severe erosive esophagitis and multiple gastric and duodenal ulcerations. Cultures from the esophagus were positive for Herpes simplex virus and Candida albicans triggering initiation of IV Acyclovir and Fluconazole. Patient developed new onset of atrial fibrillation with rapid ventricular rate and hypotension. Esmolol and Amiodarone infusion failed to control ventricular rate. Echocardiogram showed normal ejection fraction and thyroid panel was suggestive of thyroid storm (TSH 0.008 munits/mL, Free T4 3.31 ng/dL). He developed acute oligoanuric renal failure required initiation of continuous renal replacement therapy. Patient subsequently expired following a request by family to change his status to comfort measures only owing to poor prognosis. An autopsy was performed that showed disseminated mucormycosis involving brain, lungs, heart, thyroid gland, kidneys (figure 1), and stomach.

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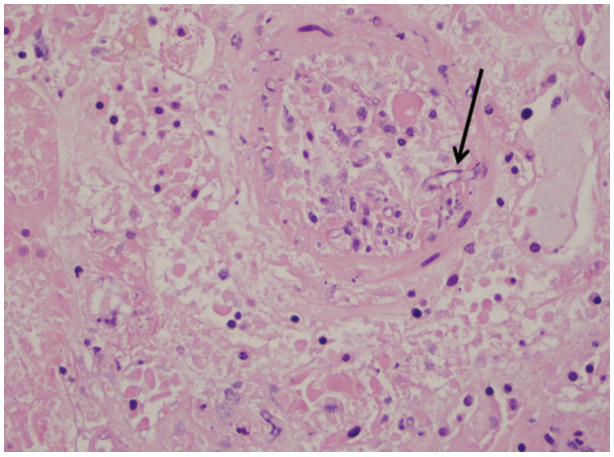

Figure1: Kidney, H & E stain. Arrow showing mucor in a glomerulus (x400).

2. Discussion

The term "Mucormycosis" is commonly used to include the infections caused by genera Mucorales (1). Most frequently reported etiologic species are rhizopus, rhizomucor, mucor and absidia (2). These organisms are ubiquitous in nature and found in decaying matters. Immunocompromised status, diabetes mellitus, malignancy, chronic renal failure and trauma are the risk factors for disseminated mucormycosis and it carries a bad prognosis (2,3). Several case reports have been published describing renal involvement in the disseminated form of mucormycosis (4). Our patient had several reasons to develop acute renal failure including acute tubular necrosis from hemorrhagic shock and/or septic shock, acute interstitial nephritis due to medications and crystal deposits from acyclovir therapy. Absence of obvious clinical clues, no growth in blood and tissue cultures and presence of other obvious etiologies for acute renal failure made it difficult to diagnosis disseminated zygomycosis in this patient.

3. Conclusions

Renal mucormycosis is a rare but important cause of acute renal failure in critically ill patient. However, control of underlying condition, intravenous Amphotericin B and debridement of infected tissues may be life saver (5).

Author's contributions

MM wrote some parts of paper. PD provided extensive intellectual contribution and prepared the final draft. All authors approved the final manuscript.

Conflict of interest

The author declared no competing interests.

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