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Medical Image of the Month: COVID-19-Associated Pulmonary Aspergillosis in a Post-Liver Transplant Patient

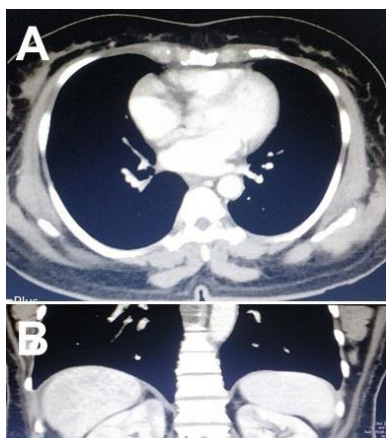


Figure 1. Axial (A) and coronal (B) CT views before transplantation. The lung parenchyma appears normal.

A previously healthy, 48-year-old woman, admitted with a working diagnosis of acute-on-chronic liver failure (Grade III) secondary to an autoimmune etiology, was found to be SARS COV-2 RTPCR positive on routine admission screening. She was initially managed with standard medical care for

COVID, including steroids. She required invasive ventilation for worsening encephalopathy and when her antigen test

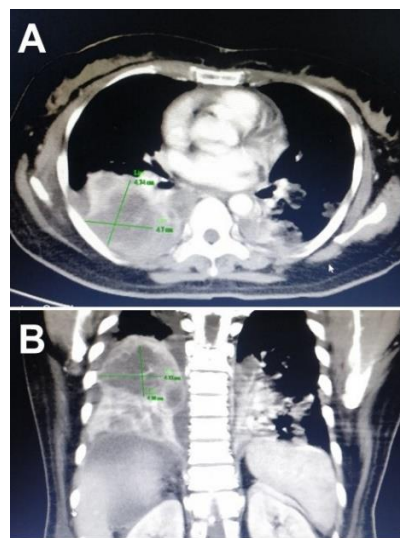


Figure 2. Postoperative axial (A) and coronal (B) CT views 14 days later. Multiple consolidatory nodules with central breakdown seen involving both lungs, the largest 43mm x 47 mm in the lower lobe of right lung.

was negative 10 days later, she underwent an urgent liver transplantation.

Her preoperative infection screen (culture of blood, bronchoalveolar lavage, urine) was negative and computerised tomography (CT) of the chest was normal (Figure 1). She was extubated on day 3 after liver transplantation. Her recovery was uneventful until the 10th postoperative day when she developed cough and desaturation. A repeat CT chest showed multiple multilobular consolidatory nodules with central breakdown involving both lung (Figure 2). Her bronchoalveolar lavage culture grew *Aspergillus fumigatus* (azole

sensitive) which fulfilled criteria for proven COVID-19 Associated pulmonary aspergillosis (pulmonary form) as the host criteria was already met (1). Although she was aggressively managed with intravenous voriconazole and liposomal amphotericin, she subsequently succumbed to her illness.

COVID-19 infection shows a propensity to dysregulate the immune system and decreases T-cell lymphocytes. The dysfunctional immune system with a direct damage of respiratory epithelium by the viral infection facilitates superadded bacterial and fungal infections (2). The use of corticosteroids and antiinterleukins in the therapy elevates the risk. Immunosuppression in an organ transplanted patient can complicate this further. Though patients with invasive fungal disease (IFD) are diagnosed and classified based on host factors, clinical factors and mycological evidences, CAPA essentially need not present with all the typical host and clinical elements (3). A high index of suspicion is essential for an early diagnosis of this condition.

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