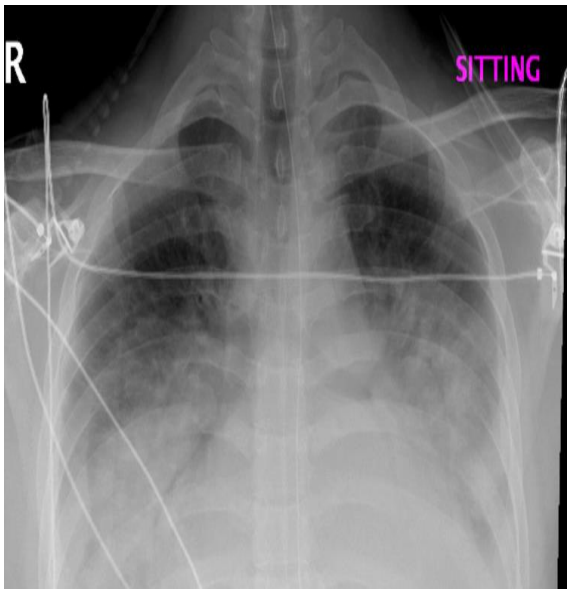
CASE-IDCPC, 27th April 2021.

25 year old gentleman presented with left sided neck pain and swelling for a week followed by high grade fever, abdominal pain and diarrhea. Fever was high grade with chills relieved with acetaminophen. He had travelled from Dubai to Karachi two weeks ago with his COVID PCR negative 72 hrs before boarding. He was initially prescribed azithromycin as an outpatient but soon developed difficulty in breathing had to visit ER. He was hypotensive and tachypneac but maintaining O2 sat on room air.

His CBC had a leucocytosis 14,000mg/dl with predominant neutrophil, ALC 1500, and platelets 90,000. Serum creatinine was 5mg/dl and troponin of 11 and raised proBNP. His liver functions were impaired with ALT of 531 and ASOT of 884. His PT/INR was 1.7, D-dimer 4 and ferritin 3081, CRP 336, and LDH 1830. ABG 7.32/21/75/10/92. Cardiac MRI and Echo findings were consistent with myocarditis.



He needed resuscitation and NIV support. Started on intravenous steroids and diuretics along with carbepenem. Within 72 hours was off ionotropes and NIV. His viral markers, EBV serology, blood and urine CS, Covid PCR were negative. His inflammatory markers started to decline and he was discharged home with normal renal functions and no supplemental oxygen.

WHAT IS THE DIAGNOSIS?

Answer

His COVID Ab was positive and had COVID INDUCED MULTI-SYSTEM INFLAMMATORY RESPONSE in ADULTS (MIS-A)

The working **MIS-A CASE DEFINITION** used in the reports included the following five criteria:

1) a severe illness requiring hospitalization in a person aged ≥21 years;
2) a positive test result for current or previous SARS-CoV-2 infection (nucleic acid, antigen, or antibody) during admission or in the previous 12 weeks;
3) severe dysfunction of one or more extrapulmonary organ systems (e.g., hypotension or shock, cardiac dysfunction, arterial or venous thrombosis or thromboembolism, or acute liver injury);
4) laboratory evidence of severe inflammation (e.g., elevated CRP, ferritin, D-dimer, or interleukin-6);
5) Absence of severe respiratory illness (to exclude patients in which inflammation and organ dysfunction might be attributable simply to tissue hypoxia).

   Patients with mild respiratory symptoms who met these criteria were included. Patients were excluded if alternative diagnoses such as bacterial sepsis were identified.

   The interval between infection and development of MIS-A is unclear, adding to uncertainty regarding whether MIS-A represents a manifestation of acute infection or an entirely post acute phenomenon.

Reference:

Chau VQ, Giustino G, Mahmood K, et al. Cardiogenic shock and hyperinflammatory syndrome in young males with COVID-19. Circ Heart Fail 2020.

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