

COVID-19 and Aspergillosis

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HISTORY

Chief Complaint: fever and shortness of breath

HPI:

56-year-old man was admitted to an outside hospital with fever, short of breath and hypoxia. COVID-19 was diagnosed in the emergency room. He was treated with remdesivir and dexamethasone along with ceftriaxone and azithromycin.

Day 7: He developed acute respiratory distress syndrome requiring intubation. Dexamethasone was continued

Day 9: Due to refractory hypoxemia, he was transferred to our hospital for further management.

Medical Hx

Coronary artery disease with history of cardiac arrest 2016

History of ventricular fibrillation, status post AICD

Hypertension

COPD

Surgical/invasive procedure Hx:

CABG X4 over 10 years ago

Stent placement in 2019

Family Hx

Coronary artery disease and cerebrovascular accident

Social History

Lives in Huntingdon, PA

Tobacco: previous 3 pack per day for 18 years. Quit 2016

Alcohol: Denied

Drugs: Denied

REVIEW OF SYMPTOMS:

Unobtainable due to sedation and paralysis

MEDICATIONS – on transfer

Ceftriaxone

Lisinopril

Furosemide

Levothyroxine

Carvedilol
Amiodarone
Apixaban

PHYSICAL EXAMINATION:

Vital Signs: T 37.5 C, HR 98 bpm, RR 10 breaths/minute, BP 98/42 mmHg

General: Intubated, unresponsive

Cardio: Rate irregularly irregular, no murmur

Pulmonary: Coarse breath sounds throughout. Decreased breath sounds both bases

Abdomen: Bowel sounds present, non-distended, soft

Extremities: 1+ ankle edema

Skin: No rashes

ADMISSION LABS

CHEMISTRY/METABOLIC PANEL

Creatinine 1.2 mg/dL

AST 27 U/L

ALT 27 U/L

Alk Phos 60 U/L

Total bili 0.6 mg/dL

LDH 753 U/L

CBC

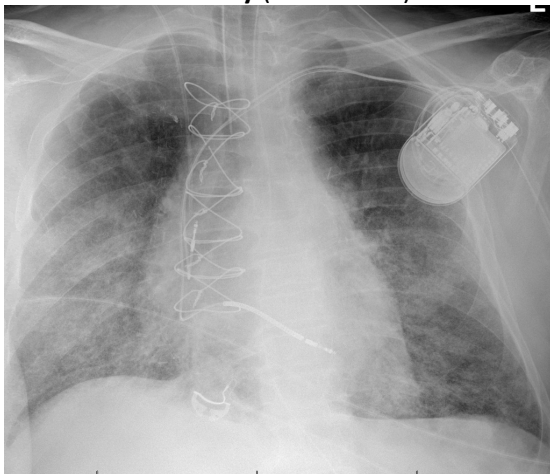
WBC $16.1 \times 10^9/L$ (97% PMN, 1% lymph, 2% mono)

Other labs

Ferritin 753 ng/mL

Lactate 2.6 mmol/L

Baseline Chest X Ray (on transfer)



TIMELINE OF HOSPITAL COURSE

Day 9 (day of transfer): Bronchoscopy showed friable airways and thick mucus in both lower lobes. He was started on piperacillin-tazobactam. Dexamethasone was stopped

-BAL culture grew 50,000 CFU/mL *Chryseobacterium indologenes*

Day 10: He was placed on veno-venous extracorporeal membrane oxygenation (ECMO)

Day 12: Leukocytosis resolved (WBC down to 8)

Day 14: Renal function progressively worsened.

Day 17: Creatinine peaked to 4.4 . Urine output was marginal, unresponsive to furosemide

Day 18: Patient was started on continuous renal replacement therapy, but became hypotensive requiring low dose norepinephrine (1 mcg/kg/min) for fluid removal.

Blood and BAL cultures were unrevealing. As per UPMC protocol, surveillance fungal biomarkers with BDG and GM were obtained. BAL culture grew <5,000 CFU/mL Gram negative rods; fungal culture was negative.

BDG = 40 pg/mL

Serum GM = 3.23

BAL GM= 9.04

Day 20: Results of GM prompted CT chest → cavitory lung lesion RUL. Patient was started on voriconazole and caspofungin. Bronchoscopy did not show a large amount of secretions. BAL fungal culture: no growth

Day 23: Patient suffered two episodes of cardiac arrest. Family decided to make him comfort measure only

IMAGES(CAT scan of chest Day 18) – diffuse areas of ground glass opacities and traction bronchiectasis involving all lobes, and air bronchograms. There was a 3.3 x 2.7 cm cavitory lesion within the right upper lobe



AUTOPSY: The lungs were severely congested with diffuse hemorrhage and parenchymal consolidations. There was a 2.5 x 2.0 x 2.0 cm tan-brown, cavitory lesion in the right upper lobe. Microscopic sections showed extensive invasive branching hyphal structures, acute inflammation, and necrosis.

