COVID-19—ASSOCIATED FUNGAL INFECTIONS
EDUCATIONAL INITIATIVE

CALL FOR CASES:
COVID-ASSOCIATED FUNGAL INFECTION

COVID-19 and Aspergillosis

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HISTORY

Chief Complaint: 78 yo male, COVID+, worsening SOB.

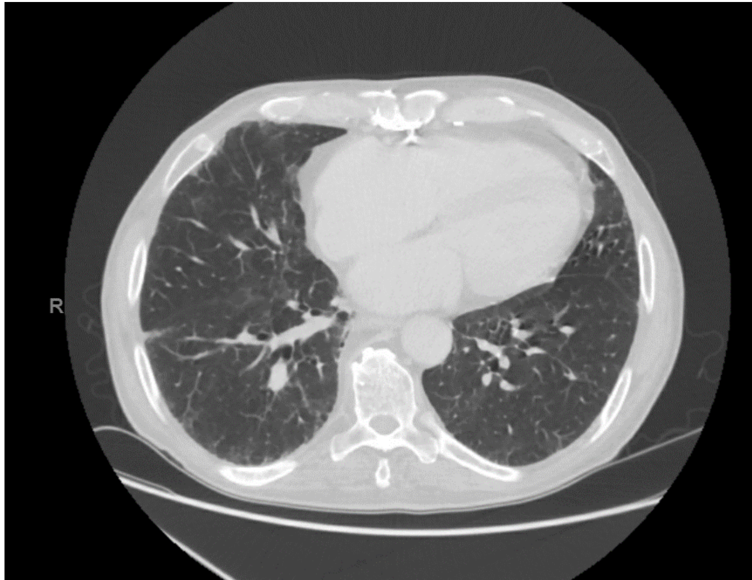
Recent hx: Transferred from OSH for worsening SOB, +CoVID 8 days prior to transfer.

Medical Hx
Coronary artery disease
Scalp Melanoma
Depression
Hiatal Hernia
BPH s/p TURP
Pleural Plaques: Occult aspiration vs asbestosis
Diverticulosis
Parkinson's disease
No known allergies

Social Hx
Smoked 50 yrs prior; 1.5-2 ppd x 15 yrs
No illicit drug use, drinks wine socially
Prior engineer, living in central AL

Surgical Hx
CABG 10 yrs prior to admission
Wide local excision (WLE) 4 yrs prior (for scalp melanoma)
Re-excision and split thickness skin graft 2 yrs prior
Deep brain stimulator in left subthalamic nucleus (STN) 6 months prior

CT Chest 17 months prior to admission (because of history of melanoma)



-Bilateral calcified pleural plaques are noted without associated effusion
-Subpleural reticulations and patchy ground glass parenchymal opacities especially in the lower lobes and to a lesser degree, right middle lobe and lingual persistent.

REVIEW OF SYMPTOMS:

Present
Tachypnea, Shortness of Breath

MEDICATIONS – at admission

Ropinirole 12mg oral daily
Citalopram 20mg daily
Simvastatin 40mg daily
Amantadine 100mg BID
Carbidopa Levodopa 25-100mg 0.5 tabs 4 times daily, 50-200mg nightly
Ubiquinone 600mg AM, 300mg PM

PHYSICAL EXAMINATION:

Vital signs:
Temp: 96.9 F, HR: 84 bpm, RR: 28 breaths/min, BP: 113/70 mmHg, Weight: 250lb (BMI)
General : Alert and in moderate respiratory distress. Skin dry
HEENT: Dry mucous membranes, no pharyngeal erythema
Respiratory: Tachypneic, increased WOB, no wheezing, moving air well
CVS: Difficult to auscultate; NR, RR, no murmurs
GI: Soft, non tender
Neurology: Oriented, responsive to questions appropriately

ADMISSION LABS

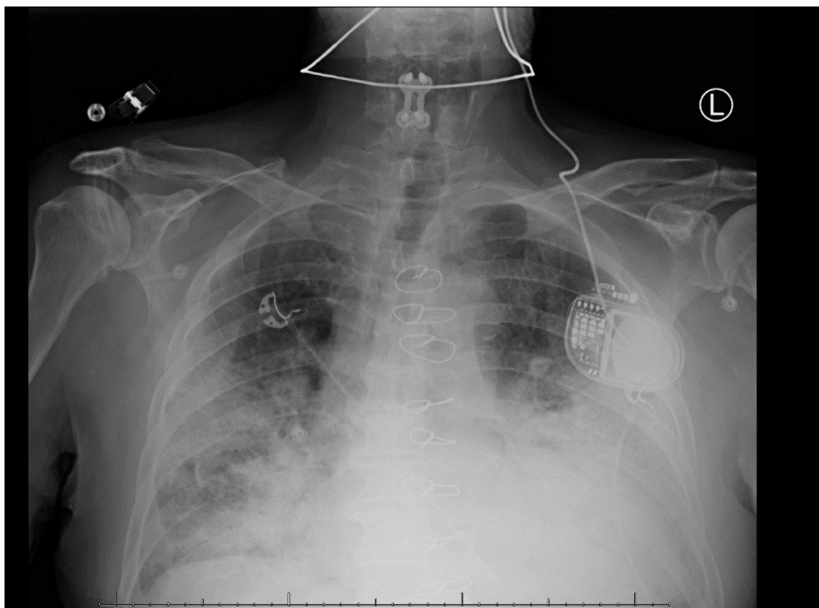
CHEMISTRY/METABOLIC PANEL
Na – 134 mmol/L
K – 3.9 mmol/L
Cl – 100 mmol/L
HCO_3 – 26 mmol/L
BUN – 21 mg/dl
Creatinine – 0.5 mg/dl
Glucose – 116 mg/dl
Ca – 7.6 mg/dl
Total Protein –4.9 gm/dl
Albumin - 2.7 gm/dl
Total Bilirubin – 0.8 mg/dl
AST – 49 units/L
ALT – 14 units/L
ALP – 69 units/L

CBC
WBC – 9.77 x 10^3/cmm
Hb – 11.4 gm/dl
Platelets – 145 x 10^3/cmm
%PMNLs – 93
%Lymphocytes – 3
%Eosinophils - 0

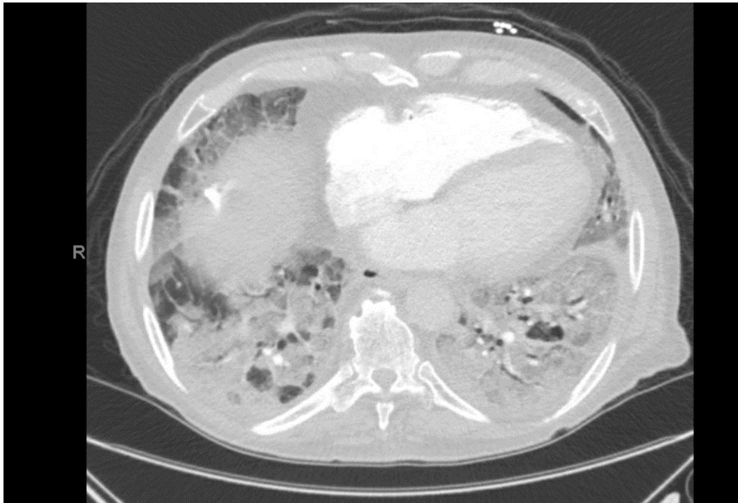
Other labs
ABG: pH: 7.39; pCO2: 38.5; pO2: 121; FiO2: 80%

High-sensitive troponin – 2651
Viral Respiratory Panel – Negative
MRSA Nasopharyngeal Screen - Negative

Admission Chest X-Ray



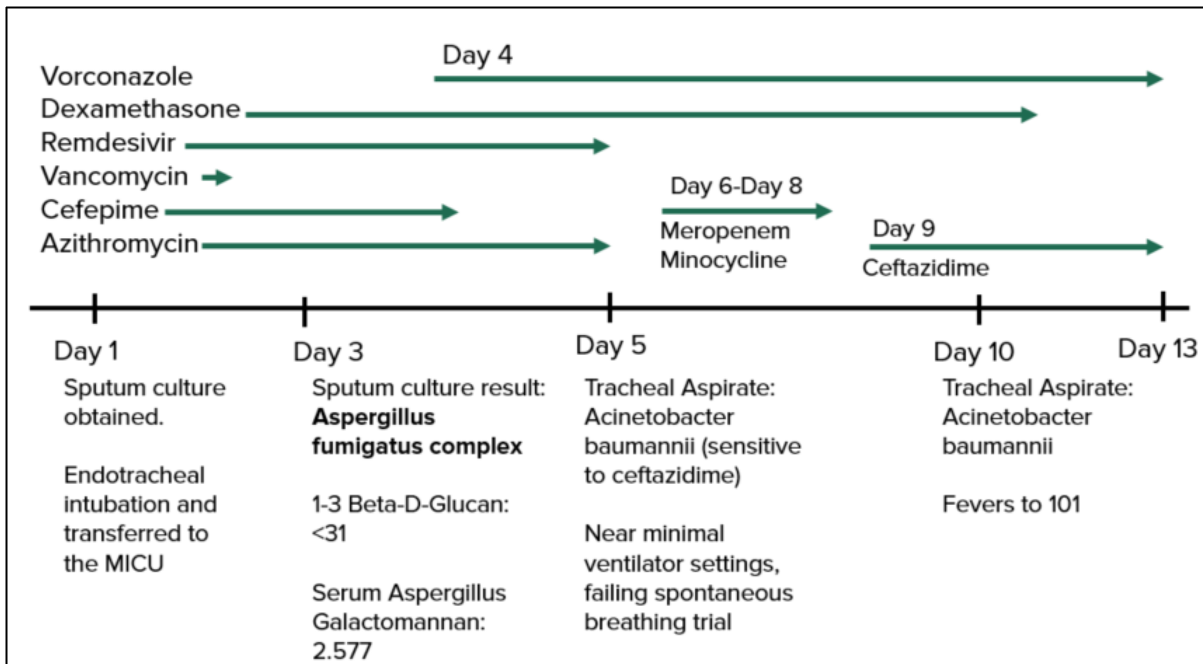
Admission CTA Chest



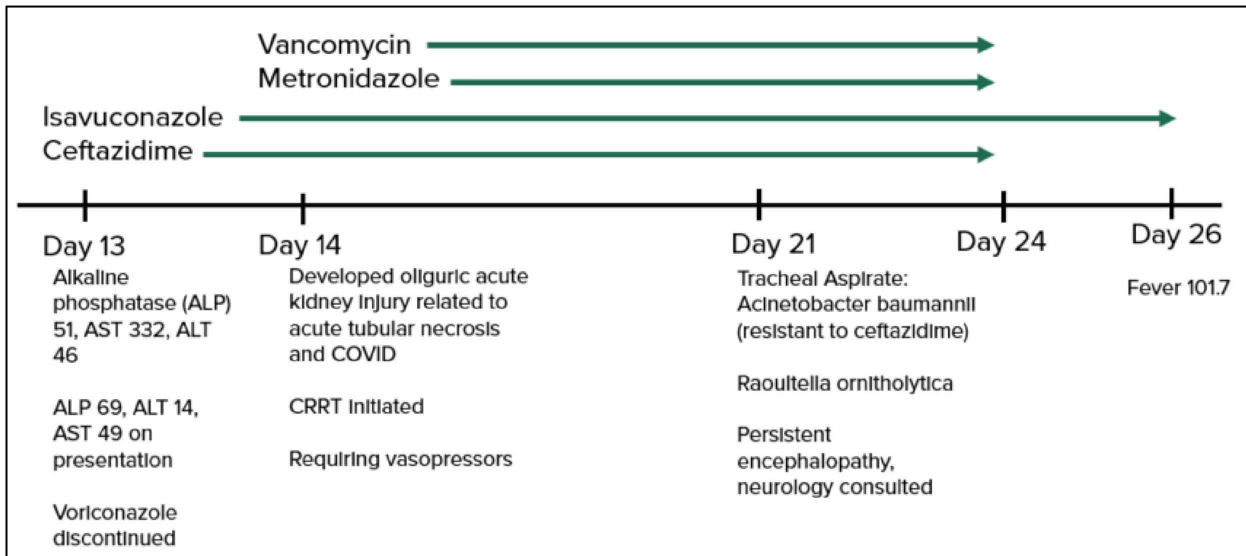
-Borderline enlarged main pulmonary artery measuring 3.1 cm in diameter.
-Diffuse bilateral ground glass opacities throughout both lungs, most pronounced in the lower lungs. Scattered calcified pleural plaques, unchanged.
-Multiple prominent mediastinal nodes, nonspecific but likely reactive. Stimulator device noted in the anterior upper left chest wall.
-Prominent multilevel bridging, anterior osteophytes of the thoracic spine.

TIMELINE OF HOSPITAL COURSE/IMAGES

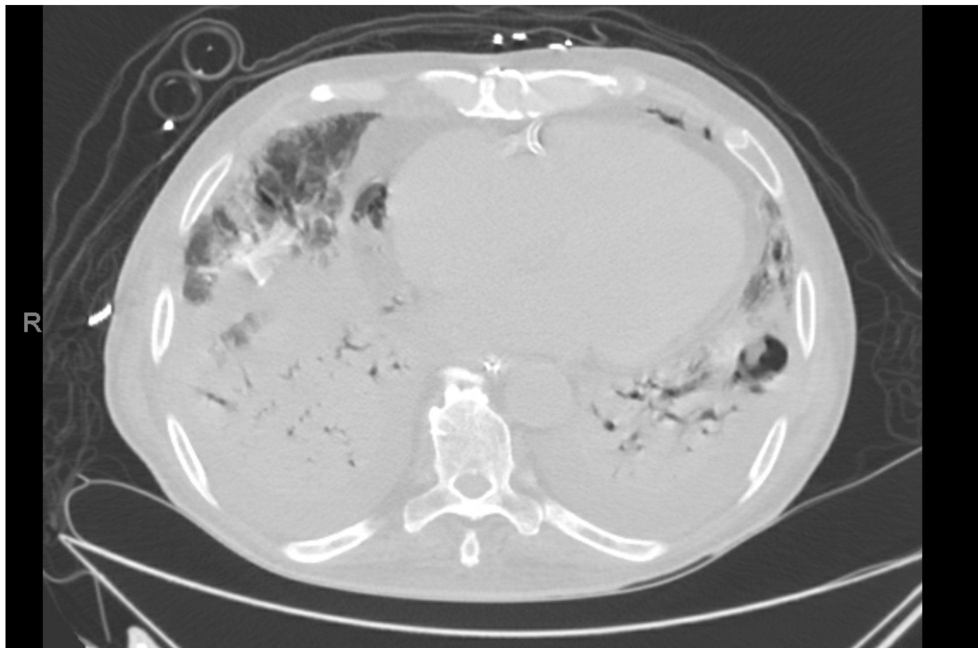
Day 1:	Sputum Cultures, imaging Endotracheal intubation, transferred to MICU
Day 3:	Sputum Culture result: *Aspergillus fumigatus* complex 1-2 BetaD Glucan: < 31 Serum Aspergillus Galactomannan: 2.577 Dexamethasone, Remdesivir, Vancomycin, Cefepime and Azithromycin started
Day 4:	Voriconazole started
Day 5:	Tracheal Aspriate: *Acinetobacter baumannii* (ceftazidime sensitive) Near minimal ventilator settings, failing spontaneous breathing trial Starts meropenem and minocycline (Day 6-8) Starts Ceftiazidime (Day 9)
Day 10:	Tracheal Aspriate: *Acinetobacter baumannii*; fever 101



Day 13:	Alkaline phosphatase 51, AST 332, ALT 46. Due to elevated AST, Voriconazole discontinued and Isavuconazole initiated
Day 14:	Kidney injury (acute tubular necrosis and COVID) Requires Vasopressors
Day 21:	Tracheal aspirate: *Abaumannii* (resistant to ceftazidime) Raoultella ornitholytica Persistent encephalopathy, Neurology consult
Day 16:	Fever 101.7



Day 21 - CT Chest

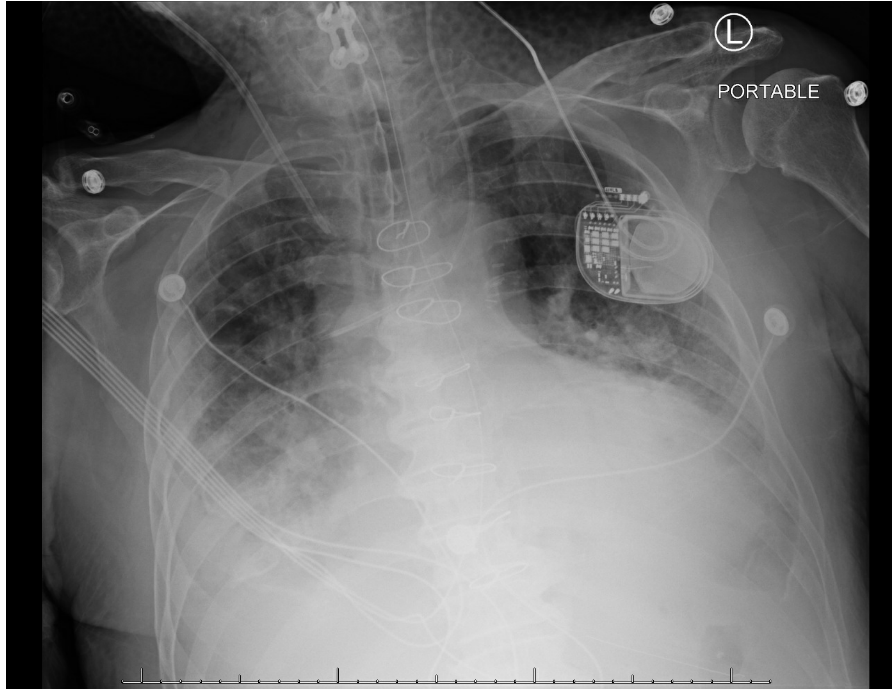


- *Small bilateral pleural effusions, right greater than left. Significant improvement and crazy paving pattern of opacities scattered throughout the lungs with interval development of multifocal areas of cavitation in*

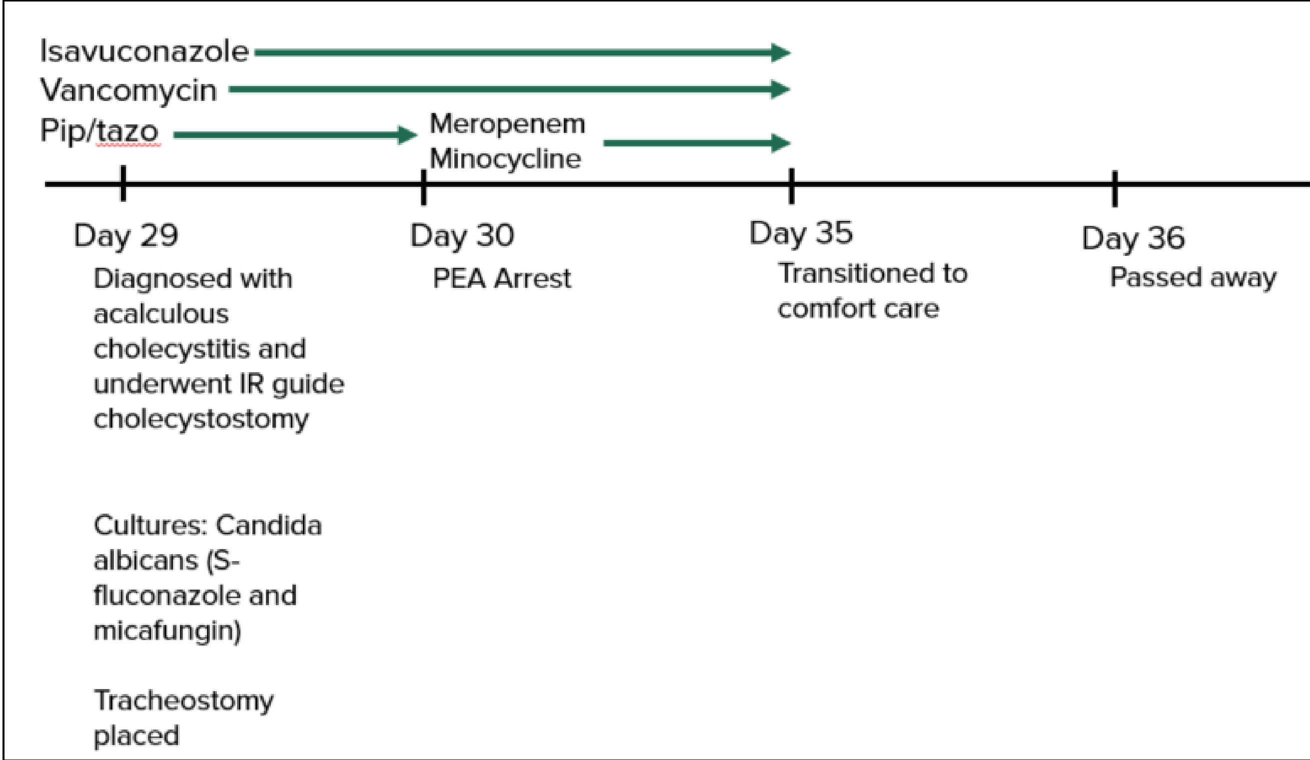
the posterior right upper lobe and left lower lobe. Dense, consolidation in both lower lobes. Small amount of endotracheal and endobronchial secretions present.

- *Pneumomediastinum which is new from prior and of uncertain etiology.*
- *Constellation of findings suggestive of volume overload including small volume ascites and anasarca.*

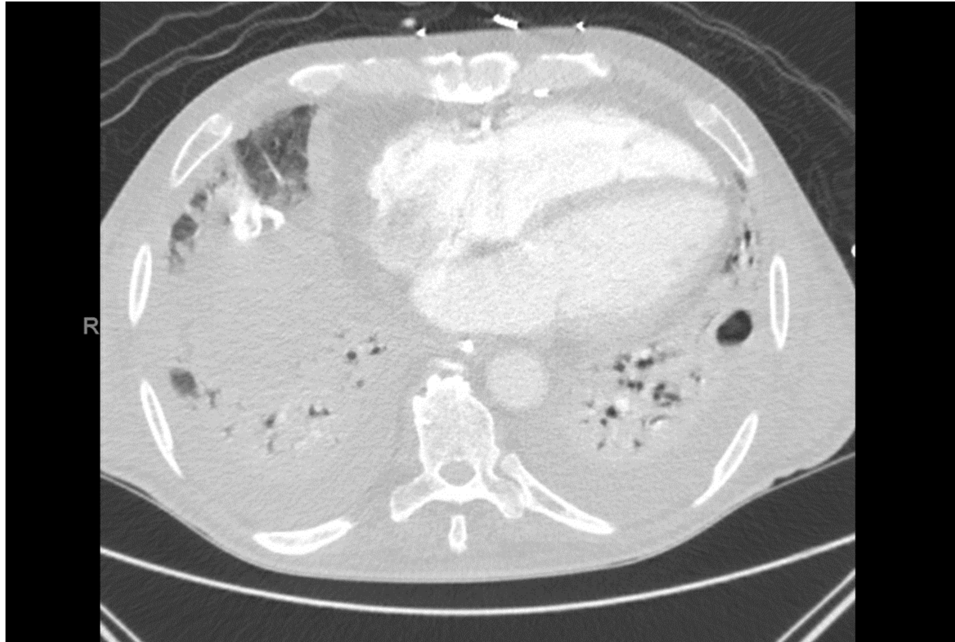
Day 11- Chest Xray



Day 29:	Acalculosis cholecystitis; IR guide cholecystostomy
	Cultures: *C. albicans* (fluconazole and micafungin sensitive)
	Tracheostomy placed
Day 30:	Caridac Arrest (Pulseless electrical activity (PEA)
Day 35:	Transitioned to comfort care
Day 35:	Died


Isavuconazole
Vancomycin
Pip/tazo
Meropenem
Minocycline
Day 29
Diagnosed with acalculous cholecystitis and underwent IR guide cholecystostomy
Cultures: Candida albicans (S-fluconazole and micafungin)
Tracheostomy placed
Day 30
PEA Arrest
Day 35
Transitioned to comfort care
Day 36
Passed away

Day 29- Chest CT



- Consolidation in both lower lobes is similar. Patchy peripheral regions of consolidation in the upper lobes represents a worsening. Peripheral cavities near the right lung apex and in the right upper lobe posterior segment appear to be parenchymal and have a similar distribution compared to the previous.
- A few shotty and mildly enlarged mediastinal lymph nodes are slightly larger compared to the previous, possibly reactive.
- Pneumomediastinum is decreased.
- Small bilateral pleural effusions are slightly increase

Day 29- Chest X-Ray