



TRIPLE WHAMMY

Internal Medicine

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ABSTRACT

ARDS is a life threatening pulmonary affliction. Being infected with one or even two agents is known and prevalent. But to have THREE microorganisms concurrently damaging the lungs and that too in an immunocompetent person is a rarity.

KEYWORDS

ARDS, Atypical infections, Septic shock, prone ventilation, Successful recovery.

INTRODUCTION:

A 39 years old male presented with H/O fever and abdominal pain-2 days and breathlessness -1 day. He was admitted to a local hospital where initial workup was negative. In view of progressive breathlessness needing escalating oxygen, he was shifted to us in Apollo hospital.

O/E:

Patient was on NIV- FiO₂ 50%, SpO₂ 70%. Tachypnoeic, semi-conscious. BP-80/50. P-110/m. Icterus+. Had bilateral crackles Right > left hemi thorax.

Clinical Impression And Logical Explanation:

Acute onset dyspnoea with severe desaturation needing escalating oxygen support with auscultatory findings and without raised JVP/pedal oedema/cardiac gallop pointed towards ARDS. The exact aetiology needed to be ascertained.

Table Of Investigations Sent:

| | INITIAL PHASE | RECOVERY | PRIOR TO DISCHARGE |
|--------------------|---------------------|----------------|--------------------|
| HEMOGLOBIN | 13.2 gm% | 11.1 gm% | 12.0gm% |
| WBC | 13.43K | 24.78K | 18.59k |
| DIFFERENTIAL COUNT | 93/05/00/02 | 78/11/02/04/01 | 79/11/03/06/01 |
| PLATELETS | 33K* | 311K | 413k |
| SODIUM | 149 | 142 | 138 |
| POTASSIUM | 5.0 | 4.1 | 5.1 |
| CREATININE | 1.72 | 0.83 | 0.8 |
| TOTAL BILIRUBIN | 4.45 | 1.65 | 1.75 |
| C REACTIVE PROTEIN | 198.8 | | |
| PROCALCITONIN | 3.04 | | |
| CALCIUM | | | |
| ALBUMIN | 2.4 | | |
| VIT D | 7.0 | | |
| LEPTOSPIRA IgM | POSITIVE | | |
| RICKETTSIA PCR | POSITIVE | | |
| ET CULTURE | CANDIDA TROPICALIS | | |
| SERUM B D GLUCAN | BORDERLINE POSITIVE | | |

USG ABDOMEN-Mild fatty infiltration of liver.

2D ECHO -LVEF 60%, no RWMA

Respiratory multiplex -ve.

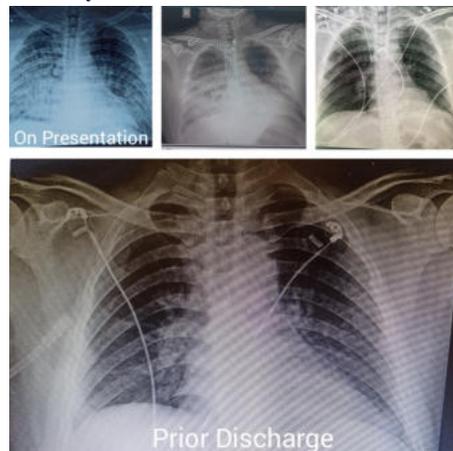
Final Diagnosis: acute respiratory distress syndrome secondary to leptospirosis + Rickettsia + Fungal infection with multi system organ dysfunction.

Course:

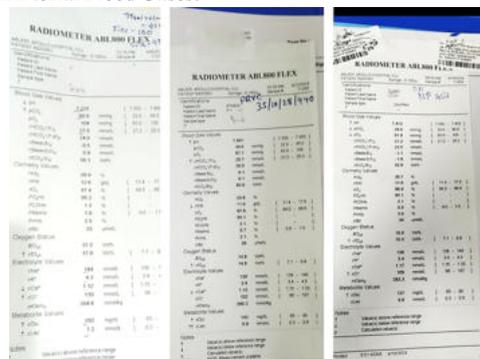
Patient was immediately intubated, shifted to ICU and ventilated. Despite PRVC mode FiO₂ 100%, he couldn't maintain his saturation. Hence prone ventilation was initiated. There was frank haemoptysis. Serial ABG's were done and relevant investigations sent. Higher antibiotics with atypical cover were initiated. He needed inotropic support. FiO₂ was titrated as per needs. He responded well to above measures. Chest X-ray showed improvement. Hypoxemia, acidosis and hypercarbia all reduced. On day 3, we started reducing his FiO₂ and sedation. He had intermittent fever spikers with leucocytosis. ET

secretions grew Candida tropicalis. Antifungals were initiated. He was gradually weaned off the ventilator and shifted to high flow nasal canula and then to nasal prongs. Over next few days supplemental O₂ was tapered off. There was significant clearing of X-ray chest and he was shifted to wards. Incentive spirometry and chest PT was continued. After ensuring afebrile period of >36 hours without paracetamol, he was discharged

Serial Chest Xrays:



Serial Arterial Blood Gases:



Follow Up:

Pt reported for follow up on 5th day post discharge. His vitals were maintained and was totally asymptomatic.

DISCUSSION:

ARDS is a life threatening condition characterised by poor oxygenation and non-compliant or stiff lungs, capillary endothelial injury and diffuse alveolar damage. Pulmonary HT soon develops following PA vasoconstriction. ARDS has a high mortality and unless tackled aggressively and effectively, outlook is usually grim.

Severe Leptospirosis causes pulmonary capillaritis leading to diffuse alveolar haemorrhage, impaired gas exchange and acute respiratory distress syndrome.

Rickettsial diseases are relatively common in tropical and subtropical locations. ARDS is an infrequent complication. Since clinical manifestations and initial serology is non-specific, there can be a delay in accurate diagnosis.

In this case scenario, the fungal growth from ET was unlikely to be iatrogenic given the care taken and the short duration of growth (diagnosed on day 3).

An immunocompetent person being afflicted with not 1, 2 but THREE pathogens causing life threatening ARDS is indeed rare.

And hence this case is being reported.

CONCLUSION:

Timely clinical diagnosis with well thought of investigation panel and initiation of correct treatment can lead to early recovery and avoidance of complications even in the most dire of all scenarios.

It also makes sense to “keep digging” rather than be satisfied with 1-2 diagnosed yields.

REFERENCES:

1. Gajic O, Dabbagh O, Park PK, Adesanya A, Chang SY, Hou P, Anderson H, Hoth JJ, Mikkelsen ME, Gentile NT, Gong MN, Talmor D, Bajwa E, Watkins TR, Festic E, Yilmaz M, Iscimen R, Kaufman DA, Esper AM, Sadikot R, Douglas I, Sevransky J, Malinchoc M., U.S. Critical Illness and Injury Trials Group: Lung Injury Prevention Study Investigators (USCIITG-LIPS). Early identification of patients at risk of acute lung injury: evaluation of lung injury prediction score in a multicenter cohort study. *Am J Respir Crit Care Med.* 2011 Feb 15; 183(4):462-70.
2. Haake DA, Levett PN. Leptospirosis in humans. *Curr Top Microbiol Immunol* 2015; 387:65-97.
3. Gulati S, Gulati A. Pulmonary manifestations of leptospirosis. *Lung India* 2012;29:347-53
4. Parola P, Paddock C.D., Socolovschi C., Labruna M.B., Mediannikov O., Kernif T. Update on tick-borne rickettsioses around the world: a geographic approach. *Clin Microbiol Rev.* 2013; 26:657–702.
5. Karla R Dzul-Rosado ¹, Maria Fidelia Cardenas-Marrufo ², Cesar Lugo-Caballero ¹, Alberto Alvarez-Baeza ³, Nina Mendez-Dominguez ^{3,4*}
6. “Clinical manifestations in a fatal case of probable Rickettsia and Leptospira coinfection in Yucatan, Mexico. *Pathogens*-2021 Jul 21; 10(8):914. doi: 10.3390/pathogens10080914