MO170

"SWEET HYPOXIA" WITH ACUTE KIDNEY INJURY: THE UNPREDICTABILITY OF ACUTE HYPOXIC RESPIRATORY FAILURE IN COVID-19 INFECTION - A COMMUNITY HOSPITAL EXPERIENCE

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BACKGROUND AND AIMS: Severe COVID-19 infection may result in hypoxemic respiratory failure necessitating invasive mechanical ventilation. We revisit the phenomenon of asymptomatic patients despite very low pulse oximetry readings, the so-called "sweet hypoxia" or "happy hypoxia" or "silent hypoxemia". We describe for the first time, the sequential chest radiographic images of the progressive radiological trajectory of COVID-19 pneumonia.

METHOD: Case Report.

RESULTS: A 62-year old hypertensive obese Caucasian male, an ex-smoker, was diagnosed with mild community-acquired pneumonia in mid-March 2020, following evaluation for low grade fever. He had traveled to Florida and Texas in the previous month. He tested positive for COVID-19 by RT-PCR. A week later, he was admitted to a Community Hospital with one day history of new shortness of breath and loose stools. Vital signs were stable. Pulse oximeter was 96% on room air. He was fatigued with few bibasilar lung crackles. CBC was normal. Creatinine was 1.0 mg/dL. Abnormal laboratory: sodium 131 mmol/L, AST 50 iu/L, ALT 96 iu/L. Chest radiograph revealed new patchy left lower lobe airspace infiltrate (Figure 1B). EKG showed regular sinus rhythm of 96/min, QT interval 445 msec and PVCs. Treatment included nasal cannula oxygen, IV fluids, IV Azithromycin and IV Ceftriaxone. He improved the next day, requested discharge home, vital signs were stable, pulse oximetry was 91% on room air, sodium had normalized at 137 mmol/L and he was discharged home on Azithromycin 500 mg daily x 3 days and Cefdinir 300 mg BID x 5 days.

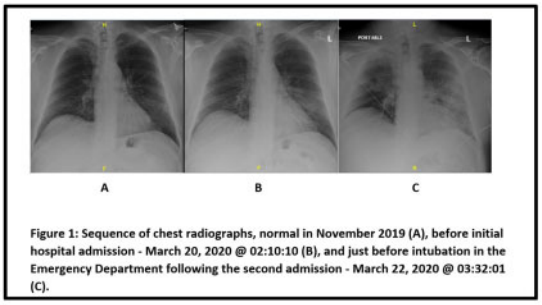

Figure 1: Sequence of chest radiographs, normal in November 2019 (A), before initial hospital admission - March 20, 2020 @ 02:10:10 (B), and just before intubation in the Emergency Department following the second admission - March 22, 2020 @ 03:32:01 (C).

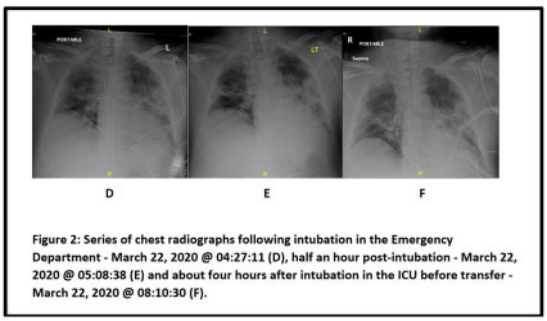

Figure 2: Series of chest radiographs following intubation in the Emergency Department - March 22, 2020 @ 04:27:11 (D), half an hour post-intubation - March 22, 2020 @ 05:08:38 (E) and about four hours after intubation in the ICU before transfer - March 22, 2020 @ 08:10:30 (F).

MO170 Figure 1: Sequence of chest radiographs, normal in November 2019 (A), before initial hospital admission - March 20, 2020 @ 02:10:10 (B), and just before intubation in the Emergency Department following the second .admission - March 22, 2020 @ 03:32:01 (C).

He cheerfully went home. Later that night he quickly developed worsening dyspnea. He was readmitted about 18 hours post-discharge. Temperature 99.40F, blood pressure 161/101, pulse 100/min. He was tachypneic and pulse oximetry was 82% on room air. This improved to 93% on 4.5 LPM nasal cannula oxygen. Initial EKG was normal. New pertinent laboratory data: Bicarbonate 17 mmol/L, phosphorus 5.5 mg/dL, calcium 7.2 mg/dL, creatinine 1.1 mg/dL, BNP 31 pg/mL and lactic acid 1.2 mmol/L. PTT was 28.3 sec. HIV-1 p24 AG, HIV-1 AB, HIV-2 AB, HbSAG and Hepatitis C AB were negative. Chest radiograph showed worsening bilateral infiltrates (Figure 1C). He very quickly desaturated in the ED down to 81% despite high flow oxygen therapy. He was promptly intubated (Figure 2A). Oxygenation immediately improved. He was transferred to the ICU on IV Vancomycin and IV Cefepime. He developed septic shock and required IV Norepinephrine. With worsening chest radiographs, (Figures 2B & 2C), he was transferred to a tertiary medical center. On transfer, pertinent new data: creatinine 1.38 mg/dL, albumin 2.8 g/dL, Ferritin 2,573 ng/mL, LDH 534 u/L, CRP 6.0 mg/L, INR 1.2, D-Dimer 1.04, procalcitonin 0.38 ng/mL, WBC 13.3 x 109/L. EKG showed sinus bradycardia. Urine Legionnaire AG and Strep. Pneumonia AG were negative. IV Azithromycin 500 mg daily and IV Ceftriaxone 2 gm daily were administered for 8 days. Chloroquine phosphate 500 mg 2x daily was added. IV Norepinephrine was continued. IV fluids were withheld. The head of the bed was elevated to $>30^0$. DVT prophylaxis with SQ Enoxaparin and Vitamin C were administered. New blood cultures remained negative. COVID-19 RT-PCR after 3 days remained positive. He was extubated after 4 days and discharged home after 9 days with normalized creatinine of 1.03 mg/dL.

CONCLUSION: We have for the first time demonstrated the sequential chest radiographic images of the progressive radiological trajectory of COVID-19 pneumonia. The place of non-invasive ventilation demands further study. The so-called "sweet hypoxia" or "happy hypoxia" or "silent hypoxemia" in COVID-19 is revisited – indeed, it is not exactly limited to COVID-19 patients. The need to mitigate lung barotrauma is mandatory. Finally, prognostication of pneumonia in COVID-19 is unpredictable. Too early premature discharge from the hospital is strongly discouraged.