INTRODUCTION

- Methemoglobinemia is a disorder that causes oxidation of heme, impairing its ability to offload oxygen (see Figures 1 and 2).
- Often caused by exposure to drugs/toxins that oxidize hemoglobin.
- Few case reports of methemoglobinemia have been described in the setting of COVID-19 pneumonia, most with exposure to known inducers (i.e., hydroxychloroquine)\(^1\)\(^2\)-\(^4\).
- We present a patient with COVID-19 pneumonia who was diagnosed with methemoglobinemia and acute hemolysis from G6PD deficiency after receiving dexamethasone, remdesivir, and high dose vitamin C.

CASE DESCRIPTION

- 32-year-old African American male with no significant past medical history presented with six days of dyspnea and was found to be positive for COVID-19 on admission.
- On hospital day (HD) 1, vitals were notable for fever and oxygen saturation 91% on room air. Physical exam was normal including lung exam. Chest X-ray showed multifocal pneumonia consistent with COVID-19 pneumonia.
- The rest of his hospital course is diagrammatically represented below.

DISCUSSION

- Important to keep broad differential for hypoxia in setting of COVID-19 pneumonia and recognize discrepancy between \(\text{SpO}_2\), \(\text{PaO}_2\), and clinical exam.
- Imperative to recognize this abnormality and obtain an arterial co-oximetry panel once erroneous causes of discordance are ruled out such as: poor probe positioning, hypothermia, and acrylic/painted nails.
- Worsening hypoxia likely multifactorial: COVID-19 pneumonia, hemolytic anemia, and methemoglobinemia.
- The cause of our patient’s methemoglobinemia remains unclear.
- Although vitamin C is a treatment for mild methemoglobinemia due to its reduction potential, it has been reported to be an oxidizing agent at supraphysiologic doses (>30 grams)\(^5\).

REFERENCES