

Pancytopenia: Rare Presentation of COVID 19 Pneumonia

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Abstract

Background

COVID-19 pandemic is the biggest public health challenge that world is facing now a days. It has affected different people in different ways. COVID-19 is a systemic infection with a significant impact on the hematopoietic system and hemostasis. Lymphopenia is considered as cardinal laboratory finding with prognostic potential. However, patients can also present with pancytopenia, affecting all cell lineage.

Case Presentation

We present a case of middle-aged male with no prior co-morbid, presented with complaints of fever, cough, and shortness of breath. COVID PCR was positive. Initial lab workup showed pancytopenia with low retic count that improved gradually over a period of four weeks.

Conclusion

COVID-19 is a serious infection that has led to thousands of cases of severe pneumonia, ARDS, and even deaths across the globe. Like other viral diseases, it can also cause bone marrow suppression leading to pancytopenia. This condition improves gradually over a period of weeks to months with supportive management of iron and vit B12 replacement

Case Presentation

42 years old Asian male with no prior co-morbid admitted with complaints of high-grade fever for one week documented up to 102°F associated with generalized body aches, dry cough for last 4 to 5 days and shortness of breath on exertion. He was not able to complete sentence without getting short of breath. On arrival in Emergency room, he was conscious, awake, anemic and in respiratory distress with the vitals of Pulse: 120bpm Blood pressure: 100/70 mmhg R/R

: 30 breaths per min Temperature : 102°F. SO₂ 82 % on room air. Bilateral crepitation on chest auscultation. A systolic murmur heard all over the chest, loudest in mitral area (**Table 1**).

He was managed conservatively with supportive therapy, steroids, and transfusion. He improved clinically and his oxygen requirement gradually decreased. Follow up labs as shown in **table 2**. He was discharged home with regular OPD follow-ups.

PERIPHERAL SMEAR:

DIMORPHIC PICTURE OF RBCs SEEN+, MICROCYTES+ HYPOCHROMIC+ ANISOCYTOSIS+ POLYCHROMASIA+ TARGET CELLS+ CRENATED RBCs+ TEAR DROP CELLS + POIKILOCYTOSIS+ ROULEAUX+, as shown in **figure 1**.

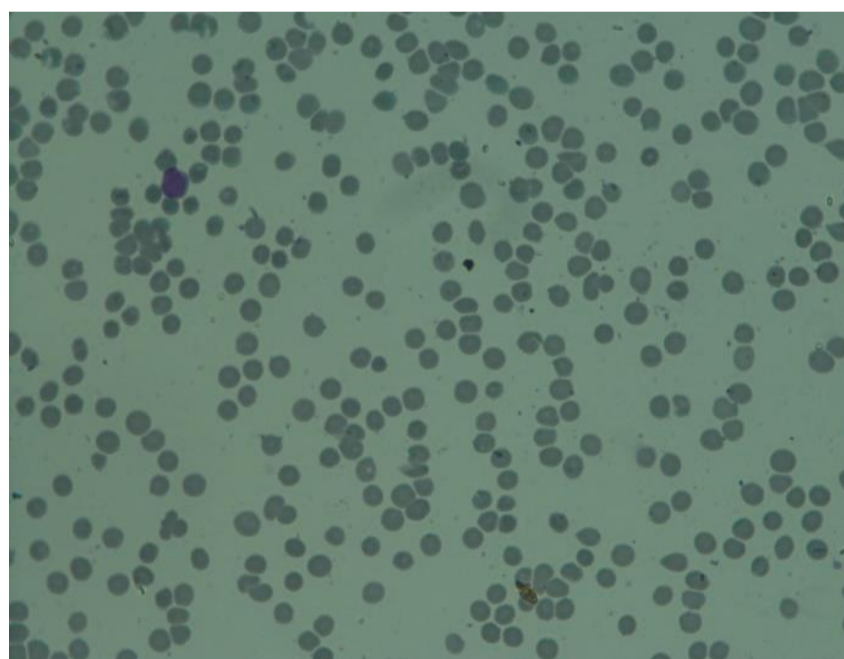


Figure 1: Pathological findings from peripheral smear dimorphic picture of RBCs seen, microcytes, hypochromic, anisocytosis, polychromasia, target cells, crenated rbc, tear drop cells, poikilocytosis and rouleaux.

Table 1: Test results

Hb	6.15 g/dl □
TLC	1.72 N 66 % Lymphos 28 % □
Platelets	8 Thousand □
MCV	53.72 □
Bilirubin Total	3.55 Adults: < 1.0 mg/dL □
Bilirubin Direct	1.08 < 0.3 mg/dL □
Bilirubin Indirect	2.47 □
ALT	409 □
AST	428 □
D-Dimer	3.14 □
LDH	421 □
High Sensitivity CRP	17.99 mg/dl □
SARS-CoV RNA	DETECTED
TIBC	261 [Adults]: 250 - 425 micro gm/dl
Transferrin saturation	8.00 (30 – 40 %)
Retic count	0.5 % Normal range: 0.5-2 %
Direct Coombs test	Negative
Ferritin	72 Adult F:15-150 ng/ml M:30-400 ng/ml

Table 2: Follow up test results.

Hb	11.02 11.5 - 15.50 g/dL (F) 13.50 - 17.50 g/dL (M)
MCV	79.89 (76.0 - 96.0 fL)
TLC	6.55 (4.0 - 11.0 x 10 ⁹ /L)
Platelets	166 (150 - 400 x 10 ⁹ /L)
Retic count	1.8 %

Discussion

Coronavirus disease 2019 (COVID-19) is caused by severe acute respiratory syndrome coronavirus -2 (SARS-CoV-2). The incubation period of COVID 19 is up to 14 days with an average of 4 to 5 days from exposure to symptoms onset [1]. The signs and symptoms of COVID 19 include fever, dry cough, sore throat, shortness of breath on exertion, myalgias, headache, nasal congestion, diarrhea, loss of taste, and loss of smell [2,3]. The severity of illness ranges from mild to critical, mild to moderate disease including mild pneumonia with oxygen saturation ranging from 90-94 % found in 81 %, severe disease includes hypoxia or more than 50 % lung involvement on

imaging in 14 % and critical disease includes respiratory failure, shock, or multi-organ system dysfunction in 5 % of the patients [4]. The common hematological complications of COVID 19 include lymphopenia, thrombocytopenia, and increased neutrophil to lymphocyte ratio (N/L ratio) [5]. In literature, no case has been published so far to show the association of COVID 19 with pancytopenia. SARS-CoV-2 virus like other viruses can also cause transient bone marrow suppression that settles gradually over a period of days or weeks.

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