

Concurrent hematological malignancies in COVID 19 patients: A Case series**Pooja Prapanna¹, Radhika Rai², Ashok Panchonia³, Priyanka Kiyawat^{4*}**^{1,2,4} *Assistant Professor, Department of Pathology, MGM Medical College & M.Y. Hospital, Indore, Madhya Pradesh, India*³ *Department of Pathology, MGM Medical College & M.Y. Hospital, Indore Madhya Pradesh, India***Received: 15-10-2020 / Revised: 20-12-2020 / Accepted: 24-12-2020****Abstract**

Corona virus disease is an infectious disease caused by a newly emerged virus strain SARS Cov-2. Most people infected with the corona virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and malignancies are more likely to develop serious illness¹. Social distancing to prevent the transmission of this fatal disease and prolonged lockdown for around 6 months has led to patient reaching hospitals at advanced stage of disease. Furthermore patients having fever, fatigue and other non specific symptoms were hesitant to visit the hospitals owing to the current scenario¹. We present a case series of four patients presented to our COVID dedicated tertiary care setting wherein the patients had prolonged fever and were clinically suspected to be having SARS-CoV-2 infection. On hematological investigation they were found out to be cases of acute leukemia.

Keywords: SARS-CoV-2, laparotomy.

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Introduction

Corona virus disease is an infectious disease caused by a newly emerged virus strain SARS Cov-2. Most people infected with the corona virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and malignancies are more likely to develop serious illness¹. Social distancing to prevent the transmission of this fatal disease and prolonged lockdown for around 6 months has led to patient reaching hospitals at advanced stage of disease. Furthermore patients having fever, fatigue and other non specific symptoms were hesitant to visit the hospitals owing to the current scenario¹. We present a case series of four patients presented to our COVID dedicated tertiary care setting wherein the patients had prolonged fever and were clinically suspected to be having SARS-CoV-2 infection.

On hematological investigation they were found out to be cases of acute leukemia.

CASE SERIES

We present a case series of four patients who were clinically diagnosed as having SARS-CoV2 infection and on further work up were diagnosed as leukemia. Two of these patients were later diagnosed to have concomitant COVID 19 infection.

CASE1

A 40 year old female presented to COVID dedicated centre with a history of persistent fever, myalgia and mouth ulcers. She was given symptomatic treatment and referred for RTPCR SARS-CoV2 virus detection. Meanwhile we received her hematological investigations. CBC revealed Hb: 10.6gm/dl, TLC: 58,000/cu.mm, Platelets: 50,000/ cu.mm. Peripheral smear examination was done which revealed leucocytosis with presence of

Myeloid blasts (89%) and thrombocytopenia. Coagulation parameter were within normal limits. Patient was provided with provisional diagnosis of Acute leukemia to be further classified on immunophenotyping. (Fig1)

CASE2

Patient 2, was a 60 year old male presented to Flu OPD with high grade intermittent fever, abdominal pain and weakness from last one month. He was offered RTPCR for SARS-CoV2 virus and was given preliminary treatment for the same. Blood investigation were received, CBC showed Hb: 11 gm/dl, WBC: 80,000/cu.mm, Platelets: 1 lakh/cumm. Peripheral smear showed leucocytosis with predominance of mature looking lymphocytes (75%) and few neutrophils. He was rendered the diagnosis of Chronic lymphoproliferative disorder to be further investigated by ancillary methods. Later he was reported to be positive for COVID 19, and got treated accordingly. (Fig 2)

CASE 3

Patient 3, a 5 year old female presented with respiratory illness, cough and fever on and off from last one month. She was referred to COVID 19 dedicated centre where she got investigated. Blood smears revealed very high lymphocyte counts (TLC: 1.3 lakhs/cumm), anaemia and thrombocytopenia. Smear findings suggested acute lymphoblastic leukemia, patient was referred to cancer hospital for further management. (Fig

CASE 4

Patient 4, a 45 year old female already got referred to our hospital after being diagnosed as COVID 19 positive. On admission along with routine investigations hematological investigations were sent. Complete blood count revealed a raised TLC and thrombocytopenia. Smear findings suggested presence of around 90% blasts of myeloid origin. Morphologically these blasts had morphology of AML-M3 type. Clinicians were informed for urgent interventions as the case fatality is high in such cases. Unfortunately she could not survive.

Discussion

Cancer care and diagnosis have been a challenge for two reasons: existing cancer patients are extremely vulnerable to severe effects of

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COVID 19, and patients who are vulnerable to the disease have delayed consulting the medical practitioner leading to delayed detection and diagnosis. Evidence suggests that patients with cancer are more likely to be infected by SARS-CoV-2[2,3], more likely to develop a severe COVID-19[3,4], and more likely to die as a result of COVID-19[2,3,4]. There is evidence to suggest that the immune response to SARS-CoV-2 can play differing role. Patients who have certain forms of pre-existing primary or secondary immune suppression appear to be at increased risk of severe outcomes when they develop COVID-19[5,6].

On one hand, owing to the present pandemic crisis that our nation is facing, patients with concomitant Leukemias poses challenges at the level of clinical management and on the other hand few patients get their diagnosis delayed as the clinical features are misguiding[2,3].

This case series is first of its kind wherein the leukemia patients were either misdiagnosed as COVID 19 infected or concomitant hematological neoplasms were missed. Few case reports have been described stating patients with concomitant Leukemia and SARS-COV2 infection[1-3]. The purpose of this series is to throw light on the fact that, although patients in the current scenario have poor access to healthcare facilities but when they visit hospitals a wider clinical perspective should be kept in mind so that timely management can be done. Peripheral health centers should also keep in mind to offer atleast a simple investigation like peripheral smear examination in all suspected COVID19 cases before referring them to COVID facility, so that hematological malignancies can be dealt with[7].

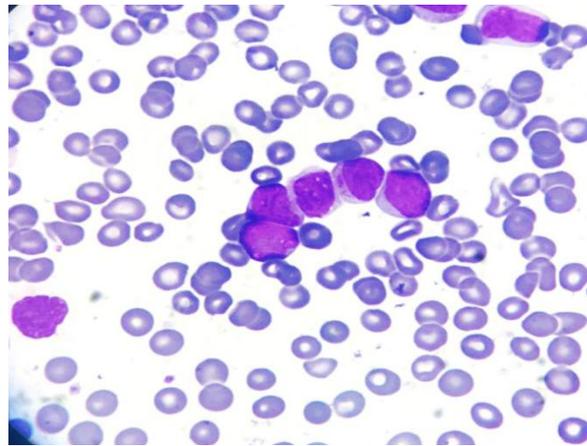


Fig. 1: (Case 1) Photomicrograph showing blasts with myeloid differentiation and thrombocytopenia. Auer rod can be seen in one of the blast. (100x)

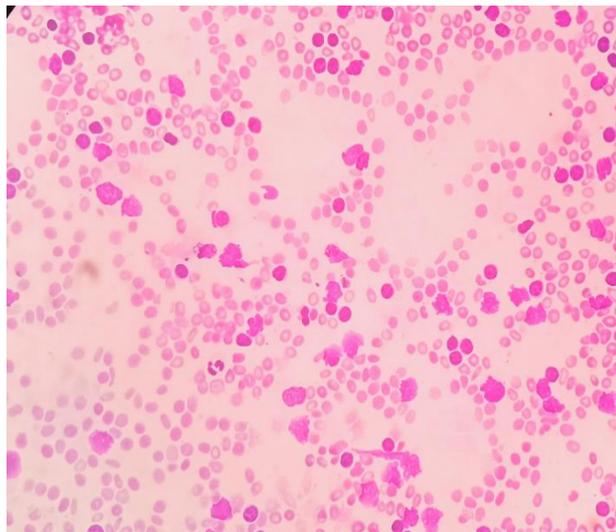


Fig 2: (Case 2) Photomicrograph showing lymphocytic leucocytosis and presence of mature looking lymphocytes with smudge cells (40x)

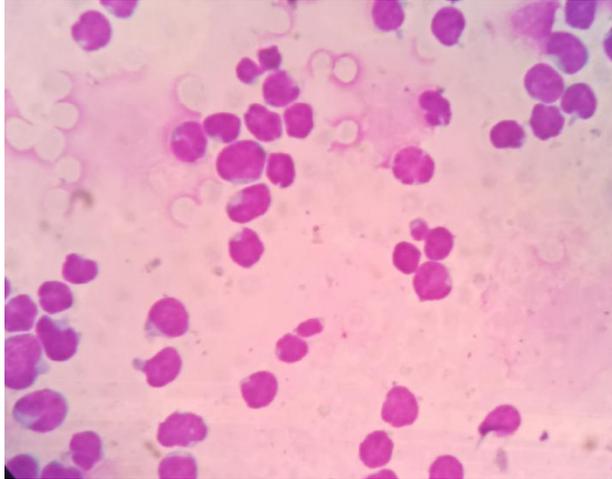


Fig 3: (Case 3) Photomicrograph depicting leucocytosis with blasts of lymphoid lineage and thrombocytopenia. Hand mirror cells seen (40x)



Fig 4: (Case 4) Photomicrograph showing blasts with myeloid differentiation and thrombocytopenia (100x)

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