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Original Research Paper

General Medicine

CASE REPORT: ISOLATED SEVERE THROMBOCYTOPENIA IN A PATIENT WITH SUSPECTED SARS COV 2 INFECTION

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ABSTRACT COVID 19 is an ongoing pandemic which can cause severe respiratory symptoms, with the involvement of renal, liver, haematopoietic, neurological and immune system. This case report describes a case of COVID 19 patient who presented with anosmia, loss of taste, without any other respiratory symptoms. Radiological examination of chest through High Resolution Computed Tomography (HRCT) revealed CORADS 5 with a CT severity score of 4/25, but blood investigations revealed thrombocytopenia with leukopenia. RT PCR nasopharyngeal swab was negative. Complete blood count revealed severe thrombocytopenia after other causes of fever with thrombocytopenia were ruled out. It is important to monitor and evaluate all atypical and rare presentations of COVID 19, such as isolated thrombocytopenia.

KEYWORDS :

INTRODUCTION

COVID 19, caused by a novel coronavirus by name of SARS COV 2 which was detected in December 2019, in Wuhan, China. The disease primarily affects the respiratory system[1] . The disease at present has affected 81.5 million people all over the world and has caused more a than a million deaths[2](Till 29 December 2020).

COVID 19 is mainly known to cause respiratory symptoms and complications, the disease also involves haematopoietic, neurological and the immune system of the body.

The common presentation of the disease is fever, cough, loss of taste,anosmia, loose stools , and respiratory symptoms of cough , dyspnoea, fall in saturation[3] . Here a case is described who presented with isolated severe leucopenia and thrombocytopenia, which is a rare and atypical presentation[4].

CASE REPORT

A 30 year oldmale, a power plant operator by profession, presented to the hospital of MGMCRI in Puducherry with complaints of loss of smell and taste for 1 week.

Patient gave history of intermittent cough for 1 week.

There was no history of fever, myalgia, headache, or breathlessness.

There were no complaints of chest pain, giddiness,fatigue, loss of appetite.

Patient had no history of contact with confirmed COVID 19 (was it in family?).

Laboratory work up was done outside before arrival revealing thrombocytopenia with a platelet count of 22000 (per /mm ^{3}) , normal total count of 4900 (per/ mm^3) with neutrophils of 80 % and lymphocytes reduced to 12.3 %. , CRP was positive and was 70 mg/L , with normal LDH , ferritin and D Dimer levels .

Patient had no known comorbidities with history of surgery for gallstones 3 years back.

Habits:

Patient was an occasional alcoholic .

Upon admission body temperature of 36.7*C , pulse rate of 92 bpm , a respiratory rate of 18 cpm , blood pressure of 120/70 mm Hg , and a peripheral capillary oxygen saturation (SPO2) of 96% at room air .

On systemic examination cardiovascular,respiratory, nervous systems were normal, abdominal examination revealed mild splenomegaly on palpation.

Upon admission laboratory investigations were sent and revealed severe thrombocytopenia with platelet count of 22000 per mm^3 with leucopenia with total count of 3400 with neutrophil predominant of 77 % and lymphocytes of 15.9 %. A peripheral blood smear was taken and revealed decreased total counts, normal distribution, reduced platelets, normocytic normochromic red blood cells, retic count of 0.2, with an impression of leucopenia with thrombocytopenia.

A high-resolution computed tomography of thorax was done revealing a picture of CORADS 5 with CT severity score of 4/25 – (MILD). An abdominal pelvic sonography was done revealing splenomegaly with a spleen size of 13.5 cm with a normal echo pattern. Other investigations of liver, renal parameters,serum electrolytes were within the normal limits, Vitamin B 12 levels was 688 pg/mL, folic acid was 2.85 ng/mL. Other fever evaluation in the form of malaria rapidcard, scrub typhus and dengue were negative, Coagulation parameters were within the normal limits. A RT PCR test in the form of a nasopharyngeal swab for COVID 19 was found to be negative. Arterial blood gas analysis was done and revealed PaO2 of 69. The patient`s vitals were monitored hourly and complete blood count of the patient was monitored twice a day. Patient only had complaints of loss of smell and taste during the duration of the hospital stay which resolved two days before discharge and was maintaining saturation at room air.Patient was managed supportively with fluids for 2 days. Patient was not given any steroids or anticoagulants, patient had no bleeding manifestations during hospital stay. Patient was discharged with platelet count of 55000 per/mm^3.

LABORATORY FINDINGS OF PATIENT ON EACH DAY OF HOSPITAL ADMISSION

Date	Time	Total Count (per/ mm^3)	Haemo globin (gm/dL)	Platelets (per/mm^3)	Lymphoc ytes (%)	Neutrop hils (%)
DAY 1 (19/9)		3400↓	12.1	22000↓	15.9	77
DAY 2 (20/09)	5 PM	3400↓	14.3	22000↓	15.3	76

DAY 3 (21/09)	8 AM	4200↑	13.1	30000↑	13.3	79.3
	5 PM	3500↑	13.1	25000↓	21.5	68.8
DAY 4 (22/09)	8 AM	2500↓	13.1	25000↓	22.8	67.7
	4 PM	2200↓	12.5	25000↓	25.5	62
DAY 5 (23/09)	8 AM	2500↑	12.3	27000↑	18.4	74
	5 PM	2100↓	13.3	40000↑	17.2	72.7
DAY 6 (24/09)	8 AM	2800↑	12.7	55000↑	15.4	76.1

DISCUSSION

The above case is an atypical presentation of a probable COVID 19 (RT-PCR – Negative) disease causing leucopenia and thrombocytopenia without any bleeding manifestations.

COVID 19 is an emerging disease with a high transmission rate, which predominantly affects the respiratory system and is causing an ongoing global pandemic. The infection is seen not only to affect the respiratory system but also neurological,liver, renal and hematopoietic systems.

It is to be noted that the limitation of the article was that the RT PCR nasopharyngeal swab for SARS COV 2 was negative but the high-resolution computed tomography of thorax revealed picture of CORADS 5 with a CT severity score of 4/25 which was highly suggestive of COVID 19 changes in the lungs.The high sensitivity and specificity of the chest CT in diagnosing COVID 19in view of modest sensitivity of the RT-PCR test has added value in diagnosing COVID 19 especially in patients who exhibit typical clinical symptoms and have negative RT-PCR results in highly infected regions[5].

It is also important to monitor completes blood count in such patients, do an abdominal sonography and rule out other causes of thrombocytopenia.

Many studies have been done and many theories have been put forward regarding the cause of thrombocytopenia, a few of the theories which could be considered are as follows[6].

SARS COV 2 could result in reduced platelet production as coronaviruses are able to infect the bone marrow cells, resulting in abnormal hematopoiesis. The coronavirus antigen of HCoV-229E–7 enters bone marrow cells and platelets through CD 13 receptors and induces the growth inhibition and apoptosis in the bone marrow, leading to aberrant hematopoiesis and thrombocytopenia[8].

SARS COV 2 virus may increase the levels of autoantibodies and immune complexes, resulting in specific destruction of platelets by the immune system.

SARS COV 2 virus may increase platelets consumption as viral infection and inflammation result in lung damage. Damaged lung tissues and pulmonary endothelial cells may activate platelets in the lungs, resulting in aggregation and formation of microthrombi. Increased platelet consumption causes elevation of D-dimer levels and impaired coagulation time, which were ruled out in our case as both the above parameters were within the normal limits for the patient in the report.

CONCLUSION

COVID 19 is an ongoing pandemic which mainly affects respiratory system, but all atypical manifestations should be considered and evaluated forin spite of an negative RT PCR nasopharyngeal swab for COVID 19.

ETHICAL CONSIDERATIONS

Informed consent was obtained from the patient for publication of this report.

DECLARATIONS OF INTEREST

None

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