

Image Case: Coincident *Malaria falciparum* and Covid19 Infection in a 27 Years Old Male Student Coming from Central African Republic.

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A 27 years old male student was admitted to fevers hospital by high grade fever, chills and cough. He just arrived to Egypt 5 days before appearance of symptoms coming from Central African Republic to study at Al- Azhar University. In addition to the previously mentioned symptoms, he also complained of headache, anorexia, vomiting and dark colored urine. Upon admission he was feverish (39.5) and laboratory finding revealed slight elevation of total bilirubin (1.3mg/dl) and

creatinine level (1,6mg/dl). Covid 19 PCR test by (nasopharyngeal swab) was done and found to be positive.

High resolution CT chest was done showing bilateral small peripheral patches of ground glass opacity(GGO). Thin and thick blood films and giemsa stained were done revealing *Plasmodium falciparum* ring stages, rapid diagnostic test (RDT) for malaria was done and found to be positive for *Plasmodium falciparum*.

Malaria is a parasitic infection caused by different plasmodia species, the most dangerous is *Plasmodium falciparum*, it is transmitted by Anopheles mosquito female that leads to acute life-threatening disease with significant global health threat. Two billion people are at risk of contracting malaria annually, including those in 90 endemic countries and 125 million travelers to these countries. This parasite has a multistage life cycle with characteristic cyclical fevers. With mass treatment programs in endemic areas most people experience rapid resolution of symptoms; however, significant complications may occur. [1]

Coronaviruses are important human and animal pathogens. At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei province of China, it rapidly spread resulting in an epidemic throughout

China, followed by an increasing number of cases in other countries till pandemic throughout the world. In February 2020, the world Health organization designated the disease Covid-19, which stands for coronavirus disease 2019[2].

A 27 years old male student was admitted to fevers hospital by high grade fever, chills and cough. He just arrived to Egypt 5 days before appearance of symptoms coming from Central African Republic to study at Al- Azhar University. In addition to the previously mentioned symptoms, he also complained of headache, anorexia, vomiting and dark colored urine. Upon admission he was feverish (39.5) and laboratory finding revealed slight elevation of total bilirubin (1.3mg/dl) and creatinine level (1,6mg/dl).

Covid 19 PCR test by (nasopharyngeal swab) was done and found to be positive. High resolution CT chest was done .

Bilateral small peripheral patches of ground glass opacity(GGO)were found. Thin and thick blood films and giemsa stained were done revealing *Plasmodium falciparum* ring stages, rapid diagnostic test (RDT) for malaria was done and found to be positive for *Plasmodium falciparum*.

Patient was admitted to Covid 19 isolation ward and received antimalarial treatment in the form of combination of Artemether preparations 80mg plus lumefuntrine 480mg tablet at 0,8 hour then every 12 hours for a total of 6 doses(take with food) till 2 successive blood films found to be negative for *Plasmodium*.

He also received covid 19 treatment in the form of Dexamethazone 6mg/24h., ceftriaxone 2gm/24h., vitamin c/1gm/24h., zinc 50mg /24h., lactoferrin 100mg sachet /12h., Acetylcistein 200mg/8h.,

Along with the previously mentioned medications patient received supportive treatment in the form of intravenous fluids, antipyretic and antiemetic.Patient was

discharged after 7 days of hospital admission with good general condition, stable vital signs, normal bilirubin and creatinine level, negative blood films for *Plasmodium*, resolution of fever for 3 days and improvement of chest symptoms.

Ethical consideration: Consent was obtained from the case. All the information gathered from the patient was handled confidentially, and it was used only for research purpose.

Funding: None.

Conflict of interest: There is no conflict of interest.

REFERENCES:

1. Mayer RC, Tan KR, Gutman JR. Safety of atovaquone-proguanil during pregnancy. *J Travel Med.* 2019 Jun 01;26(4) [PMC free article] [PubMed]
2. World Health Organization. Tracking SARS-CoV-2 variants. 2022.



Figure (1): Rapid Diagnostic test (RDT) for Malaria done for the patient showing positive result for *Plasmodium falciparum*.

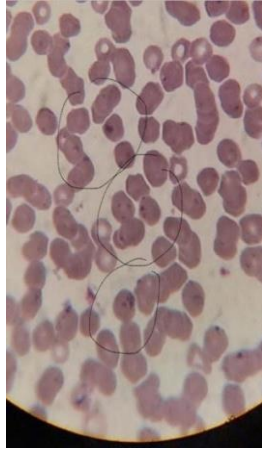


Figure (2): Giemsa stained thin blood film for the patient with RBCs showing multiple ring stages of *Plasmodium falciparum*.

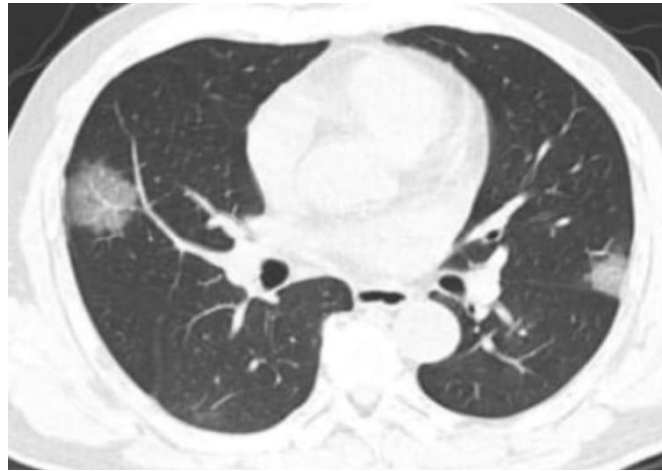


Figure (3):The high resolution CT chest showing bilateral small peripheral patches of GGO.