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**CLINICAL IMAGE**

# Microangiopathic Haemolytic Anaemia Induced by COVID-19

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## Introduction

Microangiopathic Haemolytic Anaemia (MAHA) is a descriptive term for the presence of fragmentation of red cells (schistocytes) which can be demonstrated on a blood film [1]. It occurs when endothelial damage and/or fibrin deposition damages red cells. The presence of this associated with a thrombocytopenia is an emergency as the known differential includes DIC, TTP, HUS, Malignancy, and HELLP all of which can ultimately end life [2]. Since Covid19 pandemic we report another case in this differential that resolves with conservative management.

## Case Presentation

An 84-year-old male presented to our emergency department with a 5 days' history of unwellness. He reported lethargy, loss of appetite and a non-productive cough. Clinical examination was significant for tachycardia, clinical dehydration and bibasal crepitations. An ECG done showed that the man was in atrial fibrillation with rapid ventricular response. Subsequent investigations revealed an acute kidney

injury with a significant drop in glomerular filtration from baseline, new anaemia and thrombocytopenia and he tested positive for Covid 19. Blood film was performed which showed true thrombocytopenia with schistocytes of 2.5% and subsequently on repeat had increased to 4%. A plain chest radiograph showed bilateral patchy inflammatory changes consistent with Covid 19. Kidneys were described as normal on ultrasound. The patient was subsequently treated for covid 19 with dexamethasone, received intravascular fluids for the AKI and serial monitoring of his renal function. Following treatment of covid 19 the patient improved significantly and the AKI improved and was discharged with no renal follow up.

## Discussion

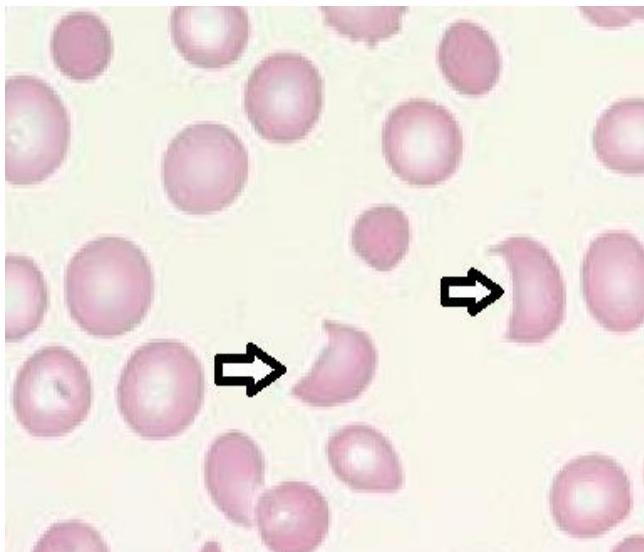
This case demonstrated schistocytes on a peripheral smear with associated thrombocytopenia. The haemolytic screen was possible consistent with a MicroAngiopathic Haemolytic Anaemia (MAHA). The differential diagnosis of a MAHA with thrombocytopenia included Disseminated Intravascular Coagulopathy(DIC), typical and atypical Haemolytic Uraemic Syndrome (HUS), Thrombotic

Thrombocytopenia Purpura (TTP), Malignancy, Medications which did not fit with our patient as they had a normal coagulation profile inconsistent with DIC. Normal ADAMTS13 excluding TTP and no evidence of Malignancy on imaging or any new medications prescribed [3]. Other well-known causes of MAHA include HELLP syndrome (Haemolysis, Elevated Liver enzymes and Low Platelets), pre-eclampsia and eclampsia in the setting of pregnancy which was obviously not the case in our male patient [4].

At this stage we had confirmed COVID19 and suspected the MAHA with thrombocytopenia and AKI could have been due to atypical haemolytic uremic syndrome. The patient kidney function verged on dialysis but spontaneously recovered over a few weeks requiring only supportive treatment [5]. Interestingly on serial monitoring of the COVID19 PCR it was noticed as covid resolved so did the AKI and haemolysis. We concluded that this was a covid19 induced the MAHA, thrombocytopenia and kidney injury.

**Description of Clinical Image:**

Peripheral blood smear from a patient with microangiopathic haemolytic anaemia with red cell fragments (schistocytes) marked by an arrow. There is also thrombocytopenia.



**Conflicts of interest:** None

**Ethical Consideration:** None

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