

## Pictorial CME

### A case of Painful Black Hands

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A Covid-19 positive patient was admitted with fever and dyspnoea. On the third day after admission, he developed pain in the left hand (Figure 1). There was no i.v. cannula or arterial line in that hand and there was no history of trauma. He did not have any comorbidities like diabetes, cancer or hypertension.

1. What may be the cause of this presentation?

2. What is the pathophysiology of this condition?

3. What is the treatment of this condition?

#### Answers:-

1. There is significant edema of the hand with areas of necrosis in distal fingers, more in the thumb. Clinical diagnosis is vascular occlusion around the wrist, most probably in radial artery supply area.

2. Severe Covid-19 infection is associated with vascular changes and this increases the propensity for thrombosis. One main pathologic mechanism of thrombosis in this infection is complement activation, with deposition of C5b-9 in the endothelium. Other pathophysiological mechanisms could be direct effect of the virus on the endothelium and hypoxia mediated pro-coagulant state. This condition is sometimes referred to as COVID-19-associated coagulopathy (CAC), which is a syndrome distinct from DIC. Other thrombotic episodes that have been reported in Covid-19 infections till now are pulmonary artery thrombosis and CVA. But such peripheral thromboses, like the present case, are reported rarely.

3. Heparin, either UFH or LMWH, is the preferred



treatment. Dosing is the same as used in other thrombotic episodes. The doses are to be adjusted based on renal status. Daily D-dimer levels may be done for follow up. At this moment, there is no guideline on the use of oral anticoagulants. If the vascular thrombosis is at a critical site like pulmonary artery, emergency thrombolysis may be considered. But for such peripheral vascular sites like the present case, thrombolysis is not used. Along with anti-coagulation measures, anti-edema measures and analgesics should also be used. If there is widespread gangrene, the hand may require amputation.

#### REFERENCE

1. Cuker A, Peyvandi F. Coronavirus disease 2019 (COVID-19): Hypercoagulability. UpToDate [Internet]. [Updated 2020 May 11; Cited 2020 May 13]. Available online from <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-hypercoagulability>

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