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NEURO-IMAGES

Three territory sign in COVID-19

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Three territory sign in COVID-19

A 56-year-old male, who had recovered from moderate coronavirus disease 2019 (COVID-19) infection two weeks prior, presented to the emergency with sudden onset slurring of speech and facial deviation to the left side. He was non-diabetic, non-hypertensive and non-smoker. His family members denied any history of snoring or episodes of obstructive sleep apnea. There was no family history of stroke, myocardial infarction or peripheral vascular disease. Magnetic resonance imaging of the brain showed acute infarcts in bilateral middle cerebral arteries and left posterior cerebral artery territory (Figs. 1, 2). CT angiography of head and neck vessels showed no major vessel occlusion. HOLTER and echocardiography evaluation were essentially normal. Lipid profile was within normal limits. Rest of the pro-thrombotic workup containing antinuclear antibodies, anti-neutrophil cytoplasmic antibodies, anti-double stranded DNA, anti-cardiolipin antibodies, B2 glycoprotein, factor V Leiden, MTHFR mutation, serum and urine electrophoresis was negative. CECT chest and abdomen, done as a part of malignancy screening was negative. USG testis and thyroid were normal. SARS CoV-2 antibody level was 5813.50 AU/ml. Rheumatoid factor (64 IU/ml) and anti-U1RNP (1+) came out to be positive. Anti-cyclic citrullinated peptide antibody was negative. Since the patient did not have any symptoms of rheumatoid arthritis or mixed connective tissue disease even after six months of the first report, the seropositivity for RA factor and anti-U1 RNP in lower titers was considered to have been triggered by COVID-19 infection [1]. With no other significant risk factors and recent history of COVID-19 infection, the patient was classified as having "Acute stroke of other determined etiology" according to TOAST classification [2]. COVID-19 has frequently been associated with microvascular and macrovascular thrombosis due to a myriad of pathologies affecting the balance between prothrombotic and antithrombotic factors [3]. Three territory sign (TTS) has been described in cardio-embolic stroke and malignancy till now [4]. This case reiterates the pro-thrombotic state in COVID-19, causing TTS.

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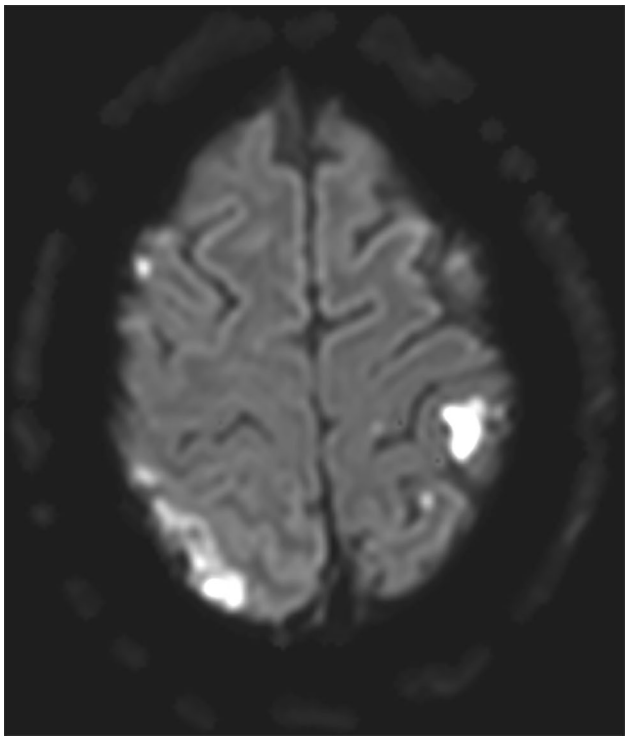

Fig. 1 Diffusion-weighted image showing infarcts in bilateral middle cerebral artery territory

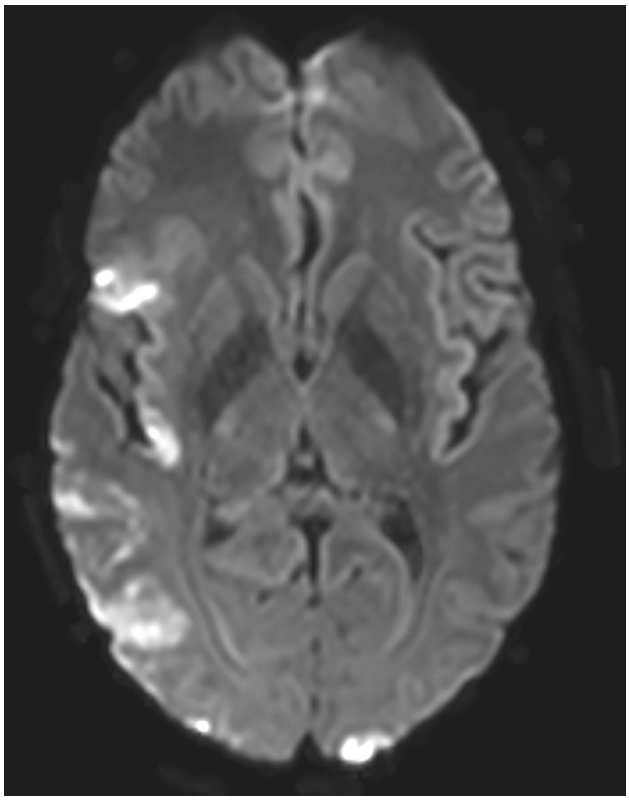

Fig. 2 Diffusion-weighted image showing infarcts in right middle cerebral artery and left posterior cerebral artery territory

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Declarations

Conflict of interest The authors declare no conflict of interest.

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