Acute Promyelocytic Leukemia Presenting with Ischemic Stroke

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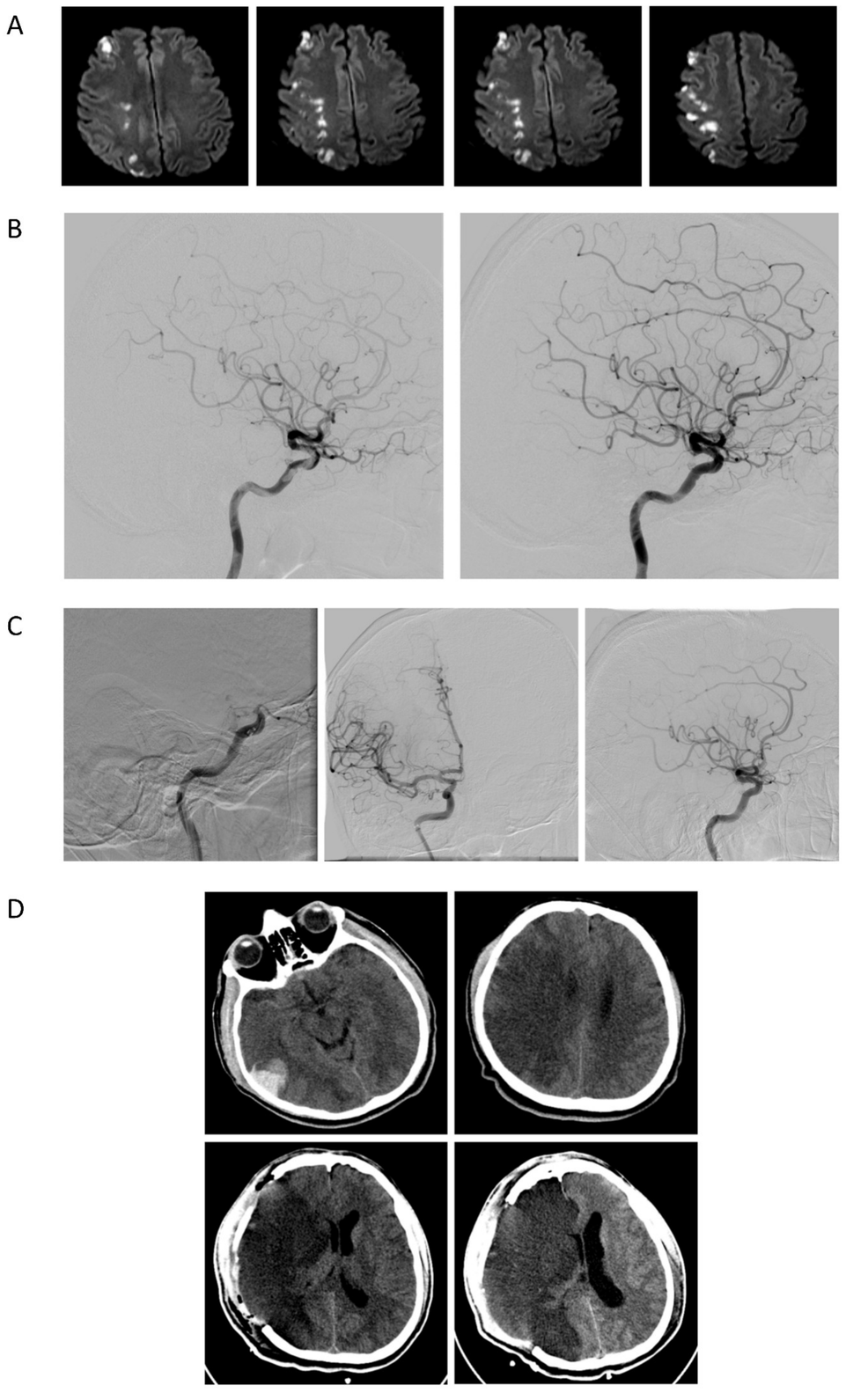
BACKGROUND

Acute promyelocytic leukemia (APL) accounts for 10% to 15% of cases of acute myeloid leukemia and is frequently associated with severe coagulopathy. Although bleeding is the main cause of early mortality, about 10% of patients with APL present with thrombosis, typically involving lung or brain vessels.

CASE DESCRIPTION

A 47 years old man, without known vascular risk factors was admitted to the Emergency Department because of acute left upper limb weakness and numbness (NIHSS, 5). Brain CT scan was negative but intravenous fibrinolytic therapy was not administered because of unknown time of onset (wake-up stroke). Blood tests were unremarkable except for mild leucopenia and anemia. Brain MRI/MRA showed the presence of multifocal acute ischemic lesions in the watershed area of the right hemisphere with a free-floating thrombus in the ipsilateral internal carotid artery (ICA). Given the high risk of embolization, the patient was successfully treated with endovascular thromboaspiration 3 days after stroke occurrence followed by standard antiplatelet therapy. The neurological status remained stable after the procedure. Twenty hours later the patient experienced clinical deterioration (NIHSS, 18) with CT angiography evidence of right MCA occlusion. Mechanical thrombectomy was performed with complete MCA recanalization. Despite the excellent radiological outcome soon after the procedure we observed no clinical improvement. Follow-up vascular imaging performed 5 hours later showed recurrent occlusion of the right MCA. Severe pancytopenia was detected with follow-up blood tests. The presence of recurrent large vessel thrombosis associated with pancytopenia raised the suspicion of an underlying malignancy-associated coagulopathy and the diagnosis of APL was made based on immunophenotypic and molecular tests (reciprocal chromosomal translocation t(15;17) and PML/RARα gene rearrangement transcripts). Follow-up CT showed a complete right MCA infarction. The patient deceased 10 days after symptoms onset despite decompressive craniectomy.



A. DWI of MRI on admission
B. Floating thrombus in the distal ICA without complete occlusion of the vessel and subsequent complete recanalization
C. Recurrent occlusion of distal ICA and partial recanalization
D. Brain TC scan in the following days

DISCUSSION

APL is frequently associated with a life-threatening coagulopathy. The presence of recurrent arterial thrombosis should raise the suspicion of an underlying malignancy leading to coagulopathy, especially in young patients without traditional vascular risk factors. Treatment of APL-associated coagulopathy is mainly supportive, aiming at reducing the clinical consequences of the hemorrhagic or ischemic vascular complications. In conclusion, ischemic stroke can be the presenting symptom of APL. Awareness of this condition is crucial, in order to ensure prompt recognition of the severe but potentially treatable vascular complications of the disease.

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