rtPA thrombolysis or IA thrombolysis played a larger role in the recanalization of the affected vessel in this patient, but the role of IA thrombolysis seemed to be limited because the arterial occlusion was minimally recanalized after IA thrombolysis. These findings suggest that the clotting system and fibrinolysis are associated with MMD, although the mechanism of action of rtPA in MMD is unclear. The pathophysiological mechanisms of MMD have not been fully elucidated. Pathological analysis has proposed that both MMD and cerebral atherosclerosis shared the same histopathological bases.[4] In MMD, the thrombotic components, such as fibrin, platelets and plasma constituents, formed microthrombi, which were considered to be a possible factor in the development of a thickened intima.[4,5] This pathogenesis of the intimal thickening in MMD was closely related to that of atherosclerosis and might lead to cerebral ischemia. Although further investigation is needed to determine the precise pathogenesis of MMD, the resolution of an ischemic stroke related to MMD with thrombolytic therapy can partially explain MDD pathogenesis.

Conclusions

Although proper long term treatment of MMD after the acute stroke period should be determined on a case-by-case basis, in acute ischemic stroke patient with MMD confirmed by an imaging modality, such as MRA or angiography, it is important that rtPA thrombolysis not be delayed due to our hemorrhagic concerns. Early diagnosis and prompt management are essential for minimizing the neurological deficits and lead to favorable outcomes. Although there can be limited generalization of our experience, thrombolysis should be considered as a treatment option for MMD patients who present with acute ischemic symptoms.

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To the Editor

Multiple Brain Cysts: An Unusual Form of Radiologically Isolated Syndrome

We have recently reported a patient with multiple brain cysts who after extensive investigations, proved to be have unusual form of radiologically isolated syndrome (RIS).[1]

However due to relatively limited follow up (six months) and in absence of confirmation of new disease activity (clinically or by MRI) we could not with certainty exclude an unusual case of ADEM. Although ADEM patients almost always have abrupt clinical presentation with disturbance of consciousness and/or seizures, it remains possible that some ADEM presentations could be subtle.[2] Follow-up of such patients is important because in cases of MS, the clinical course (developing of new symptoms) and MRI appearance (shrinkage of lesions and appearance of new lesions, usually more consistent with MS) will change.

Here we report follow-up MRI findings of our patient after 15 months, showing two new lesions, one in the white matter of the right frontal lobe, and other in subcortical white matter of the left postcentral region (Figure). Both lesions show irregular rim enhancement after application of the contrast medium. There were no infratentorial lesions and previously present cystic

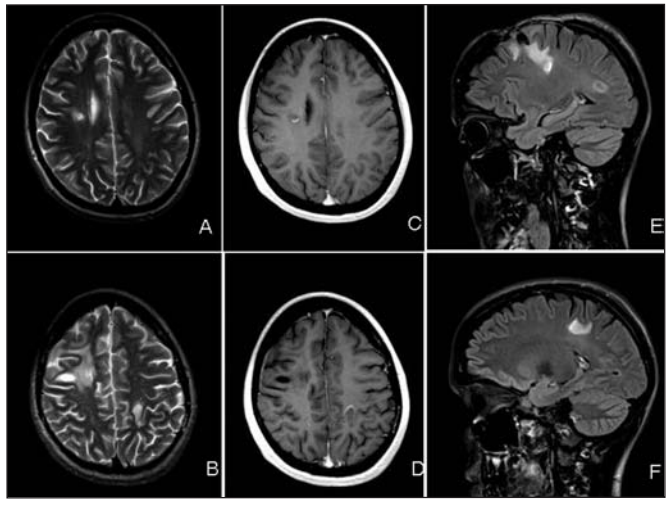

Figure: *Brain MRI; A) and B) T2-wighted images; C) and D) T1-weighted sequences following gadolinium application; E) and F) FLAIR images; Comparing to previous MRI (see reference 1) two new lesions are seen, one in the white matter of the right frontal lobe, and other in subcortical white matter of the left postcentral region. Both lesions are showing irregular rim enhancement after application of the contrast medium. Previously present cystic lesions are significantly smaller and paler.*

https://doi.org/10.1017/S0317167100018278 Published online by Cambridge University Press

lesions are significantly smaller and paler. The patient still has not experienced any clinical symptoms, except occasional headaches.

With appearance of two new lesions dissemination in space and time has now occurred making the diagnosis of ADEM extremely unlikely. The possibility of multiphasic disseminated encephalomyelitis is also negligible because of absence of any clinical symptoms.

Radiologically isolated syndrome diagnoses should always prompt a vigilant search for alternative causes.[3] Red flags to the clinical history, laboratory and MRI findings must be carefully excluded in RIS patients. However one should bear in mind that after thorough investigation, even if several red flags are present, multiple sclerosis patients can have atypical clinical/MRI presentations. Therefore we conclude that the presented case is an unusual case of RIS very suggestive of multiple sclerosis. Immunomodulatory treatment should be considered in such patients due to destructive nature of the lesions.

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Study concept and design: Habek, Adamec, Brinar. Acquisition of data: Habek, Adamec, Žarković, Ozretić, Brinar. Analysis and interpretation of data: Habek, Adamec, Žarković, Ozretić, Brinar. Drafting of the manuscript: Habek, Adamec. Critical revision of the manuscript for important intellectual content: Habek, Adamec, Žarković, Ozretić, Brinar. Administrative, technical, and material support: Habek, Adamec, Žarković, Ozretić.

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To the Editor

Delays in Carotid Endarterectomy with Symptomatic High-Grade Carotid Stenosis

Ischemic stroke is a major health care problem. In Canada, 47500 people are affected by a stroke or transient ischemic attack (TIA) each year, costing an estimated $22.2 billion in healthcare costs and lost productivity[1]. A significant percentage of cases are associated with extracranial carotid disease, and recurrent stroke is a major concern. Pooled randomised controlled trial data has shown carotid endarterectomy (CEA) to significantly reduce this risk. If CEA is performed within two weeks there is a 30% absolute five year risk reduction of ipsilateral carotid ischemic stroke. However, the benefits rapidly decline if the procedure is performed after two weeks from the index TIA or stroke event. Benefits fall to 18% with CEA at one month, and 9% with CEA beyond three months[2].

Evidence that CEA reduction of future stroke risk is time dependent promoted changes in clinical practice guidelines. The National Institute for Health and Clinical Excellence, American Academy of Neurology, National Stroke Association and Canadian Stroke Network now recommend CEA within two weeks of a recent TIA (cerebral or retinal) or non-disabling stroke for high-grade ipsilateral extracranial carotid stenosis. Several years after publication, the translation of these guidelines into clinical practice is still ongoing. A recent study at 12 designated stroke centres across Ontario, Canada, showed a

Table 1: Patient characteristics (n=124)

Demographics	**n (SD)**
Age, mean	71.2 (9.7)
	n (%)
Male sex	81 (65)
Right-sided CEA	61 (49)
Presenting symptoms/signs	
Unilateral Weakness	72 (58)
Visual field defect	41 (33)
Unilateral Sensory symptoms	16 (13)
Aphasia	14 (11)
Dysarthria	14 (11)
Other	6 (5)
Contralateral severity	
Mild	81 (65)
Moderate	3 (2)
Severe	37 (30)
Occluded	0 (0)
Unknown	3 (2)

https://doi.org/10.1017/S0317167100018278 Published online by Cambridge University Press