MELAS requires comprehensive work-up of index cases and his family.

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Letter to the Editor

In a recent article by Kondo et al., a 13 y Japanese male developed progressive, multisystem disease since birth and was lastly diagnosed as mitochondrial encephalopathy lactic acidosis and stroke-like episodes (MELAS) syndrome [1]. We want to express some concerns and add some comments about this case.

The patient obviously had hypertrophic cardiomyopathy. Did he ever undergo cardiac MRI with contrast medium to see if there was late gadolinium enhancement (LGE), which may occur in a sub-endocardial, mid-myocardial, sub-epicardial, or trans-myocardial distribution, and may reflect myocardial fibrosis or myocarditis?

Cardiac MRI may additionally reveal left-ventricular noncompaction, also known as left ventricular hypertrabeculation (LVHT), which is most prevalent among patients with a mitochondrial disorder (MID) [2]. Was systolic function normal or reduced and were proBNP values increased in this patient? LVHT is complicated by embolism, ventricular arrhythmias, or heart failure. Was systolic function decreased and proBNP values increased at age 13 y before decease?

MELAS due to the variant m.3243A>G is maternally inherited in two thirds of the cases [3]. Did the mother of the index present with features of a MID? Was she tested positive for the mtDNA variant and which was the heteroplasmy rate? Did other family members develop features of MELAS or were any of them positive for the variant? Was the family history positive for cardiomyopathy?

The patient was diagnosed with Wolf-Parkinson-White (WPW) syndrome at age 1 y [1]. Which was the treatment for this conduction defect? Did he receive a cardiac medication, or did he undergo ablation of aberrant bundles? Did he require a pacemaker or an implantable cardioverter defibrillator (ICD)?

Vacuolar degeneration of cells is a known abnormality in patients with the m.3243A>G mutation and has been previously reported in colonic mucosal cells [4], myocardiocytes , and in the skeletal muscle. Was vacuolar degeneration also observed in organs other than the kidneys and the myocardium at autopsy?

The patient is reported to have developed epilepsy since age 8 y [1]. Which anti-epileptic drugs (AEDs) were administered to treat epilepsy? How efficient was the seizure-control under this medication? Did he ever receive mitochondrion-toxic AEDs, such as phenytoin, phenobarbital, carbamazepine, or valproic acid, which could have promoted the clinical progression and deterioration over time? Particularly mitochondrion-toxic is valproic acid, which may even cause acute lethal liver failure in these patients.

The patient had recurrent stroke-like episodes (SLEs) [1]. Did they always manifest with the same phenomenology or did the SLEs vary with regard to the clinical presentation? SLEs frequently manifest with seizures. Were AEDs effective or was there any indication to change dosage or type of AEDs? SLEs may respond to NO-precursors, such as L-arginine or L-citrulline did the index receive NO-precursors during the acute stage of any of the SLEs? Did he receive antioxidants, co-factors, or vitamins?

Overall, this interesting case could be more meaningful by providing more clinical data about the index case and his first degree relatives, about the genetic status of his mother or other family members, and about the treatment the patient received for epilepsy, heart failure, WPW-syndrome, and SLE.

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