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Letters to the Editor

Reply to Finsterer and Mehri—Leber's Hereditary Optic Neuropathy: Mind the Heart!

To the Editor:

We appreciate the interest by Finsterer and Mehri in our recent report on Leber's hereditary optic neuropathy (LHON).[1]

In mitochondrial disease, the heteroplasmy rate (HR) expresses the ratio of the number of abnormal mitochondria to the total number of mitochondria in a specific tissue. The ratio is often tissue-specific, which implies that the HR of myocardial tissue may differ significantly from the HRs of other tissues. Given that the severity of disease expression in mitochondrial disease is associated with the tissue-specific HR, establishing the HR is of little clinical significance. Furthermore, obtaining myocardial tissue may be harmful to the patient, due to the risk of myocardial perforation occurring during the sampling procedure. In our study, the genetic investigations included only part of the mitochondrial DNA harboring recognized pathogenic variants. However, as Finsterer and Mehri point out, information about copy number variants and haplotype may be of scientific interest to better understand the pathophysiology of LHON.[1]

As described in our report, the index patient had multiple organ involvement, including demyelination of the posterior portion of the optical nerves, consistent with LHON. He had an otherwise normal neurologic investigation and no signs or symptoms of Harding's disease.[2,3]

Recently, Finsterer and Mehri suggested that left ventricular hypertrabeculation (LVHT) is a specific disease expression associated with LHON, based on the clinical findings in 2 patients carrying a m.3460G > A mutation.[1] However, LVHT is well recognized to be potentially part of the normal left ventricular anatomy, as well as part of the disease expression in both dilated and hypertrophic cardiomyopathy (HCM).[4] Therefore, LVHT is less likely to represent a specific disease entity with a well-defined prognosis.

Finsterer and Mehri suggest that loop recorders be implanted in LHON patients with LVHT, due to the sudden cardiac death of one patient in their report.[1] We appreciate these considerations, although our opinion is that management of patients should be individualized and based on their clinical disease expression, which was benign in the patients in our report. The patient had no family history of sudden cardiac death, did not experience syncopes, and had repeated Holter recordings without arrhythmias. Loop recorder implantation was therefore not indicated.

Previous studies of LHON patients have also reported cardiac manifestations similar to those in HCM caused by pathogenic sarcomeric variants, which suggests that routine cardiac investigations should be offered to all LHON patients. In addition, a clear indication is that at least *ND1* should be part of the genetic screening of HCM patients.[1,2]

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Ethics Statement

This letter was in accordance with the ethical guidelines.

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Disclosures

The authors have no conflicts of interest to disclose.

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