LETTER TO THE EDITOR

Unilateral Ptosis and Homolateral Hemifacial Weakness in Chronic Progressive External Ophthalmoplegia

Josef Finsterer ^a and Sinda Zarrouk-Mahjoub ^b

^aKrankenanstalt Rudolfstiftung, Vienna, Austria; ^bUniversity of Tunis El Manar and Genomics Platform, Pasteur Institute of Tunis, Tunis, Tunisia

We read with interest the report by Murdock et al. about a now 63-year-old male with chronic progressive external ophthalmoplegia (CPEO), which, initially, 30 years before, manifested as unilateral ptosis and homolateral hemifacial weakness.¹ We have the following comments and concerns.

The diagnosis of CPEO should not only be confirmed by muscle biopsy but also by genetic studies. Particularly, because of the unusual phenotype, it would be interesting to know if CPEO was due to a single, large-scale mitochondrial DNA (mtDNA) deletion, multiple mtDNA deletions, or a mtDNA or nuclear DNA (nDNA) point mutation. In case of a mtDNA mutation, it would be of interest to know if the heteroplasmy rate was low, of medium range, or high. Was the heteroplasmy rate determined in a single tissue or in several tissues, such as muscle, urine epithelial cells, hair follicles, mouth mucosa cells, or fibroblasts?

We should be informed if the family history was positive for mitochondrial disorders (MIDs) or not. Of particular interest is the mother of the index case, since some of the single mtDNA deletions are maternally inherited.² Furthermore, one quarter of the mtDNA point mutations is sporadic and thus the family history negative. Additionally, there are a number of mutations with reduced penetrance but also causative nDNA mutations, which follow an autosomal recessive trait of inheritance and are thus frequently not expressed in each generation. Were the siblings or offspring of the patient affected as well?

Muscle biopsy with only ragged-red fibres is a non-specific finding and may not necessarily indicate MID. What percentage of ragged-red fibres was detected? Were there also cytochrome-c-

oxygenase (COX)-negative muscle fibres or succinate dehydrogenase (SDH)-hyper-reactive fibres? Were also ultrastructural investigations of the muscle biopsy carried out? Did electron microscopy reveal abnormally shaped or structured mitochondria, abnormal cristae structure, or the typical paracrystalline inclusions organised in a parallel way (“parking lots”)?³

Occasionally, CPEO due to single mtDNA deletions may turn into Kearns-Sayre syndrome (KSS) or Pearson syndrome (PS). Were any phenotypic features of KSS, such as short stature, elevated cerebrospinal fluid (CSF) protein, pigmentary retinopathy, and multisystem involvement, or of PS (anemia, pancytopenia) present in the index case? Concerning the phenotype frequency among carriers of single mtDNA deletions, 65% manifest as CPEO, 30% as KSS, and 5% as PS.² The risk of transmitting single mtDNA deletions is estimated as <4%.⁴

The unilateral occurrence of ptosis, lagophthalmus, and hemifacial weakness is indeed unusual. Was there a nuclear facial palsy (ischemic stroke, bleeding, tumour, etc.) excluded? Did the authors exclude an intracerebral aneurysm? Was the patient negative for borreliosis, viral infection, or diabetes⁵? What were the results of conduction studies of the facial nerves? About 5% of Bell’s palsies may not regress, even if steroids are applied in the initial stage.

Overall, this interesting case could profit from provision of genetic data, ultrastructural muscle biopsy data, family data, or cerebral imaging, and of nerve conduction studies. The patient might have had a double trouble as long as all differentials of facial palsy were not systematically excluded.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

ORCID

Josef Finsterer <http://orcid.org/0000-0003-2839-7305>

Sinda Zarrouk-Mahjoub <http://orcid.org/0000-0003-2839-7305>

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