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Letter to the Editor

Retinal Dystrophy May no be the only Ophthalmologic Manifestation in m.3243A>G Carriers

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Letter to the Editor

We read with interest the article by Othmani *et al*. about a 65-year-old woman with maternally inherited diabetes and deafness (MIDD) due to the mtDNA variant m.3243A>G [1]. Ophthalmological examinations revealed distance vision of 0.12 with glasses in both eyes, as well as patchy atrophy and parafoveal thinning of the retinal pigment epithelium (RPE) with sparing of the fovea in both eyes (BEs) [1]. The macular dystrophy was classified as grade 3 according to de Laat's grading system for MIDD-associated macular dystrophy [2]. The study is interesting, but some points deserve discussion.

The first point is that the heteroplasmy rates of the m.3243A>G variant in different tissues were not reported. Since the heteroplasmy rate is one of the most important determinants of the phenotype, it is crucial to know it. Other determinants of the phenotype are the mtDNA copy number, the haplotype, and the involvement of nuclear genes in mitochondrial functions. These parameters should be specified not only for genetic counseling but also for assessing the course and outcome of the disease.

The second point is that the family history was not specified [1]. We should know whether the m.3243A>G variant was inherited from the mother or occurred de novo. Since mtDNA variants are transmitted through the maternal line in 75% of cases [3], it is very likely that the mother of the index patient also carried the m3243A>G variant and also manifested phenotypically.

The third point is that m.3243A>G carriers can manifest ophthalmologically not only with macular retinal dystrophy, but also with optic atrophy [4], abnormal pupils [5], increased intraocular pressure [5], ptosis, and ophthalmoparesis. Were there any signs of these abnormalities in the index patients?

The fourth point is that the patient was described as asymptomatic, but had been suffering from numbness for 26 years. In addition, the patient was described as having impaired visual acuity [1]. These inconsistencies should be clarified.

The fifth point is that the index patient had been suffering from diabetes for 26 years, but it was not reported whether the diabetes was well or poorly controlled. In order to assess whether the diabetes contributed to the retinal dystrophy, it is essential to know the HbA1c values.

The sixth point is that MIDD can occur not only with the classic phenotype, but also as MIDD+ with involvement of organs other than the ears and pancreas. Therefore, m.3243A>G carriers should be prospectively examined for multisystem involvement.

In summary, for m.3243A>G carriers, the most important determinants of the phenotype should be specified, m.3243A>G carriers should be prospectively examined for multisystem diseases, and first-degree relatives should be clinically and genetically examined to assess the mode of inheritance.

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References

1. Othmani NB, Mathew S. Clinical insights into mitochondrial retinopathy: A case report on m.3243A>G mutation and macular dystrophy. Saudi J Ophthalmol, Nov 27, 2025; 39(4):416-418. Doi: 10.4103/sjopt.sjopt_314_24
2. De Laat P, Smeitink JA, Janssen MC, Keunen JE, Boon CJ. Mitochondrial retinal dystrophy associated with the m.3243A>G mutation. Ophthalmology. 2013; 120:2684-2696.
3. Poulton J, Finsterer J, Yu-Wai-Man P. Genetic Counselling for Maternally Inherited Mitochondrial Disorders. Mol Diagn Ther, Aug 2017; 21(4):419-429. Doi: 10.1007/s40291-017-0279-7
4. Scarcella S, Dell'Arti L, Gagliardi D, Magri F, Govoni A, Velardo D, *et al*. Ischemic optic neuropathy as first presentation in patient with m.3243 A > G MELAS classic mutation. BMC Neurol, Apr 24, 2023; 23(1):165. Doi: 10.1186/s12883-023-03198-3
5. Li Y, Ding Y, Jin E, Yin H. Case Report: Abnormal pupils caused by the mitochondrial MT-TL1 gene m.3243A>G mutation. Front Pediatr, Aug 21, 2025; 13:1573886. Doi: 10.3389/fped.2025.1573886