

# Non-reactive pupils as early sign of Miller Fisher syndrome

Received: 27 Mar 2020  
Accepted: 20 Apr. 2020

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## Keywords

Miller Fisher Syndrome; Polyneuropathies; Pupil; Neuroophthalmology

Although the most characteristic symptoms of Miller Fisher syndrome (MFS) are ophthalmoplegia, areflexia, and ataxia, in 1956, Dr. Miller Fisher already described pupillary involvement in some patients. From that moment on, several articles have reported non-reactive dilated or tonic pupils in patients with MFS.<sup>1</sup>

We report two patients who debuted with symptoms of dizziness and malaise (Video 1).

On examination, the first patient had non-reactive mydriatic pupils and slight limitation for supraversion. The second patient had non-reactive dilated pupils with weak deep tendon reflexes. The rest of the examination was completely normal in both cases. In the next few days, patients developed ataxia, areflexia, and ophthalmoplegia. Both patients were diagnosed with MFS. We initiated early treatment with intravenous immunoglobulin for five days, with both patients recovering fully in less than a month.

When facing a patient with non-reactive dilated pupils, a differential diagnosis is crucial.

Different causes should be considered: midbrain or third cranial nerve pathology (i.e. polyneuropathies, intracranial hypertension, multiple sclerosis...), parasympatholytic (i.e. atropine, scopolamine, antihistamine overdose...) or sympathomimetic drugs (i.e. dopamine, cocaine, adrenaline...), and botulism.<sup>2</sup>

With this report, we want to highlight the importance of eye examination in neurological patients. Non-reactive pupils should suggest, in the right clinical setting and among other possibilities, the diagnosis of MFS.<sup>3</sup> Identifying this sign may help professionals to make an early diagnosis and initiate prompt treatment, thus improving the prognosis of these challenging patients.

## Conflict of Interests

The authors declare no conflict of interest in this study.

## Acknowledgments

None.

**How to cite this article:** Agirre-Beitia G, Moreno-Estébanez A, González-Pinto T, Díaz-Cuerv I. Non-reactive pupils as early sign of Miller Fisher syndrome. Curr J Neurol 2020; 19(3): 152-3.

## References

1. Fisher M. An unusual variant of acute idiopathic polyneuritis (syndrome of ophthalmoplegia, ataxia and areflexia). *N Engl J Med* 1956; 255(2): 57-65.
2. Kaymakamzade B, Selcuk F, Koysuren A, Colpak AI, Mut SE, Kansu T. Pupillary Involvement in Miller Fisher Syndrome. *Neuroophthalmology* 2013; 37(3): 111-5.
3. Thomas PD. The differential diagnosis of fixed dilated pupils: A case report and review. *Crit Care Resusc* 2000; 2(1): 34-7.