

# MILLER FISHER SYNDROME MIMICKING POSTERIOR CIRCULATION ISCHEMIC STROKE

Silva A.<sup>1\*</sup>, Carmezim I.<sup>2\*</sup>, Oliveira C.<sup>2\*</sup>, Porto L.<sup>2\*</sup>, Osuna A.<sup>2\*</sup>, Ribeiro P.<sup>2\*</sup>, André R.<sup>3\*</sup>, Isidoro L.<sup>3\*</sup>, Vaz M.<sup>4\*</sup>, Peixoto I.<sup>4\*</sup>, Gomes A.<sup>2\*</sup>, Lemos A.<sup>5\*</sup>

<sup>1</sup> PRM Resident; <sup>2</sup> IM Senior Consultant; <sup>3</sup> Neurology Senior Consultant; <sup>4</sup> PRM Senior Consultant; <sup>5</sup> Head of IM Department

\* Tondela-Viseu Hospital Center, Viseu, Portugal

## CASE DIAGNOSIS: MILLER FISHER SYNDROME (MFS)

### INTRODUCTION

MFS, a variant of Guillain-Barré syndrome (GBS), is an immune-mediated polyneuropathy recognized by the rapid development of an **acute clinical triad: ophthalmoplegia, areflexia and ataxia**. Anti-GQ1b antibodies are present in about 90% of patients. This case intends to evaluate the outcome of an integral rehabilitation program instituted to a patient admitted for MFS.

### CASE DESCRIPTION

A **74-year-old** independent male was admitted due to **diplopia and gait imbalance**, preceded in about one week by a gastrointestinal illness.



**Multiple cardiovascular risk factors**

### NEUROLOGICAL EXAMINATION



- Right internuclear ophthalmoplegia
- Gait ataxia
- Symmetrical osteotendinous reflexes



**Progression to:**

**Bilateral ophthalmoplegia** (III, IV, VI cranial nerves)  
**Bilateral facial palsy** (VII cranial nerves)



**Figure 1.** Bilateral ophthalmoplegia and facial palsy (*not evident with face mask*) during hospitalization.



- Normal imaging exams
- Electrophysiological studies: **axonal polyneuropathy, in acute phase, with severe gravity on the facial nerves**
- **POSITIVE** Anti-GQ1b antibodies and *Campylobacter jejuni* serology

### DISCUSSION

Based on past medical history and clinical presentation, the hypothesis of posterior circulation ischemic stroke was raised. However, continuous evolution of symptoms and normal brain imaging suggests a progressive pathology. MFS diagnosis was suspected by clinical features, and confirmed by electrophysiological studies and anti-GQ1b antibodies. **After three months of rehabilitation**, there was a **clinical improvement with modified functional autonomy**.

### CONCLUSIONS

MFS is a rare form of GBS, typically triggered by an infectious process. The worldwide incidence is about **1-2 in 1 000 000**, affecting more men. **The recovery mean period is six months**, and immunotherapy with plasmapheresis or intravenous immunoglobulin may be a beneficial treatment.

**INTRAVENOUS  
IMMUNOGLOBULIN**

**INTENSIVE REHABILITATION  
PROGRAM**

*Physiotherapy + Ocular occlusion*

**AN EARLY AND ADEQUATE REHABILITATION  
PROGRAM IS FUNDAMENTAL TO A GREATER  
FUNCTIONAL OUTCOME.**

### BIBLIOGRAPHY:

1. Bukhari S, Taboada J. A Case of Miller Fisher Syndrome and Literature Review. Cureus. 2017 Feb 22;9(2):e1048.
2. Yuan JL, Xing Y, Hu WL. Clinical characteristics and outcomes of patients with overlapping Miller Fisher syndrome and myasthenia gravis. Arch Med Sci. 2019 Dec 31;16(1):233-236.
3. Jung JH, Oh EH, Shin JH, Kim DS, Choi SY, Choi KD, Choi JH. Atypical clinical manifestations of Miller Fisher syndrome. Neurol Sci. 2019 Jan;40(1):67-73.
4. Mayer JE, McNamara CA, Mayer J. Miller Fisher syndrome and Guillain-Barré syndrome: dual intervention rehabilitation of a complex patient case. Physiother Theory Pract. 2020 Mar 9:1-10.