Abstract

Introduction: Mal de Debarquement Syndrome (MdDS) is a sensation of constant rocking, sway, and/or bobbing that typically occurs after sea voyages, air flights or long driving (classic cases). We proposed that MdDS is caused by maladaptation of the vestibulo-ocular reflex (VOR) and could be treated by readaptation of the VOR with visual-vestibular interaction (Dai et al., 2014). Methods: We examine the patient’s history, rocking frequency, body drifting, and nystagmus. The patients were then treated according to these findings for 4-5 days. During treatment patients’ heads were rolled while watching a rotating full-field visual surround. Frequency of rolling varied from patient’s frequency of body rocking or sway at 0.3 Hz to 0.05 Hz. Treatment is considered successful if the symptom severity on a 10-pt scale is reduced by ≥50%. Results: Since 2014, we have studied 319 MdDS patients (female: 83%, male: 17%; Classic: 82%, Spontaneous: 18%), mean age 48±14 years (14-87 years), and an average history 3.0±4.7 years (1 week to 41 years). The rocking frequency and sway frequency were both 0.3±0.2 Hz. Most patients were diagnosed with visits to ≥5 MD’s, but 34% were self-diagnosed. Many patients developed motion intolerance, headache/presence, nausea, claustrophobia, and a “woozy” feeling. There was also visual and noise intolerance in 25% of patients and anxiety and depression in over 50%. The MdDS symptoms increased with intake of alcohol only in 24% of patients. Treatment was successful in 75% of the classic and 53% of the spontaneous forms of MdDS just after therapy. Fifteen present of the patients were symptom-free just after treatment. Thus, readaptation is effective for treating MdDS symptoms. The duration of the improvement still must be determined.

Results

Figure 2: A-D, Changes in center of gravity of the 34 years old female patient with the classic (circular) form of MdDS. The MdDS onset day was 4 years prior to the onset of treatment. A-B, The patient had no body sway but substantial body rocking at ≈0.3 Hz (Fourier transform). C-D, Y-X plots of magnitude of center of gravity motion before (C) and immediately after (D) treatment. Self score before treatment 6, after treatment 2-3.

Figure 3: A-D, Changes in center of gravity of the 50 years old male patient with the classic (circular) form of MdDS. The MdDS onset day was 3 months prior to the onset of treatment. A, The patient had substantial body sway but ≈0.4 Hz (Fourier transform in C). B, Body rocking was irregular and smaller in magnitude. C, D, Y-X plots of magnitude of center of gravity motion before (C) and immediately after (D) treatment. Self score before treatment 6, after treatment 3.