



Postural balance assessment and treatment associated to cognitive-behavior therapy in a space phobia patient

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INTRODUCTION

Space phobia or pseudoagoraphobia is an anxiety disease that usually begins around 40 years of age and lead to an intense fear of falling, impacting in quality of life and daily live activities. Patients with space phobia frequently have cardiovascular or neurological diseases as comorbidities. Specially, space phobia patients don't respond to cognitive-behavior therapy. Fear of heights and panic disorders already were related to postural balance dysfunction and space and motion discomfort, a situation characterized for a visual discomfort and unbalance in some places, as supermarkets. Those disorders were related to unbalance specially, regarding to that triggered by dysfunctional vestibular input. In this study, it was proposed postural balance, vestibular and cognitive behavior treatment to a space phobia patient. Our aims were to assess and treat postural balance and cognitive behavior in a space phobia patient.

METHODS

A force plataform (PRO Balance Master, NeuroCom®, 8.4.0) were used to assess postural balance. This data was processed with Matlab® and the variables were total area of center of pressure (COP) displacement and displacement and velocity of displacement in x axis (latero-lateral) and y axis (antero-posterior).

Case

M., 47 years-old, female, was conducted to our service due to intense fear of falling. It has controlled seizures as prior disease. She claims about weakness in her left leg, due to the neurological disorder, and fear of falling. She avoided some places as travel in buses, cross streets and walk with high heels, and others. Prior to the treatment intervention, a clinical assessment was conducted and was observed dysfunction in eye movements and cervical inputs to postural balance leading to unbalance.

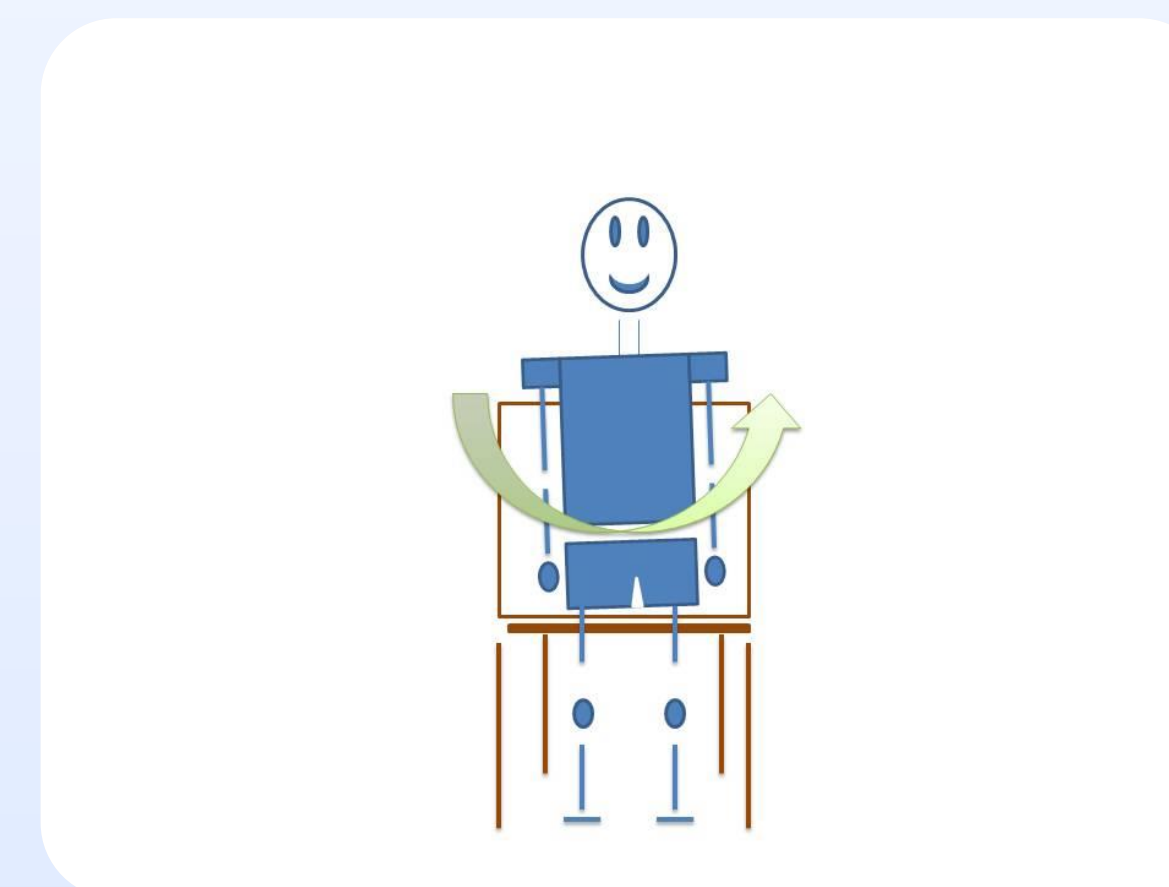


Figure 1. Cervical clinical assessment established to evaluate dizziness due to cervical impairment



Figure 2. PRO Balance Master force platform to assess balance through the modified sensory organization test

RESULTS AND DISCUSSION

Posturographic assessment was conducted with modified sensory organization test (mSOT) on the force platform and showed unbalance in sway surface and asymmetry in right-left loading/COP position in base of support, with a right dominance. The Matlab® analysis showed small area of displacement of the COP (as a stiffness postural unbalance pattern) with a high velocity of displacement of COP (real risk of falling), specially, in the sway surface condition.

The treatment was conducted with cervical, visual and surface / foot exercises, using to that a small ball and a rubber band to the physical exercises. Exercises were done in seating and standing positions and lasts for 10 weakly sessions.

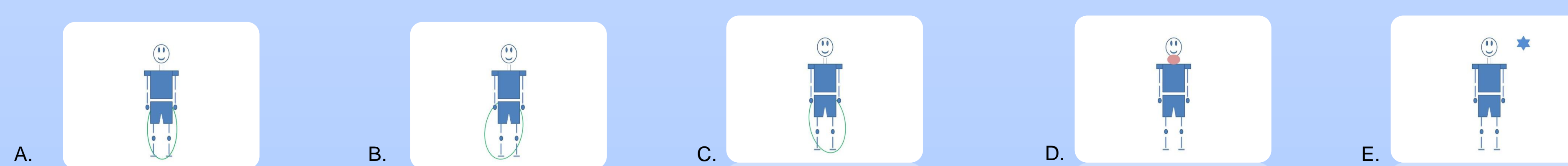


Figure 3. A-E Series of exercises with rubberr, small ball and visual exercises to train cervical, vestibular, visual and surface afferent information and postural stability

The results were a greater area of COP displacement (flexibility) and a slower velocity of displacement (less risk of falling).

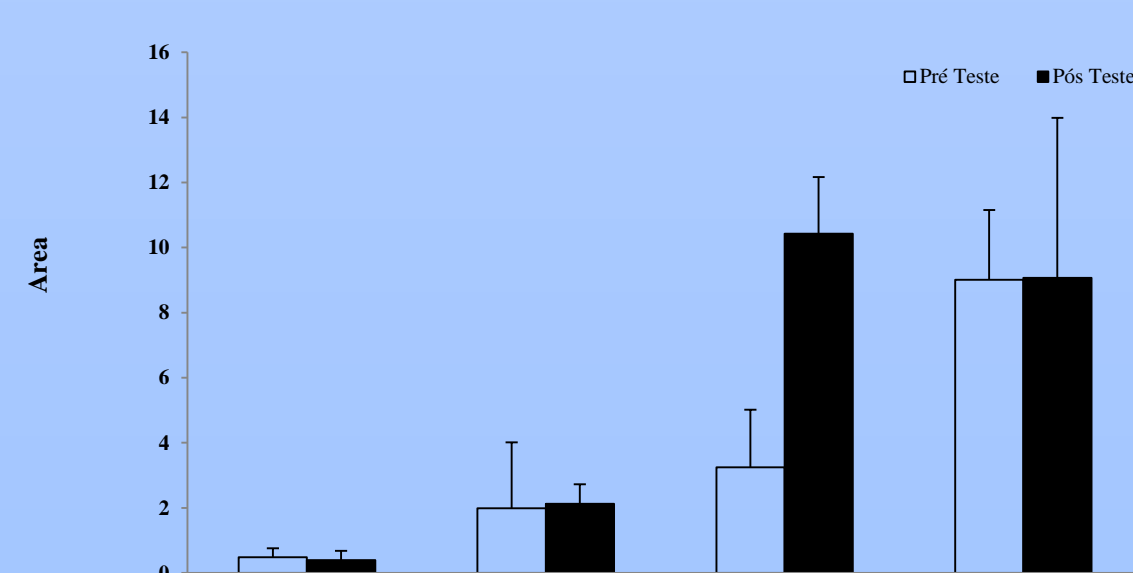


Figure 4. Area of COP displacement before and after balance treatment

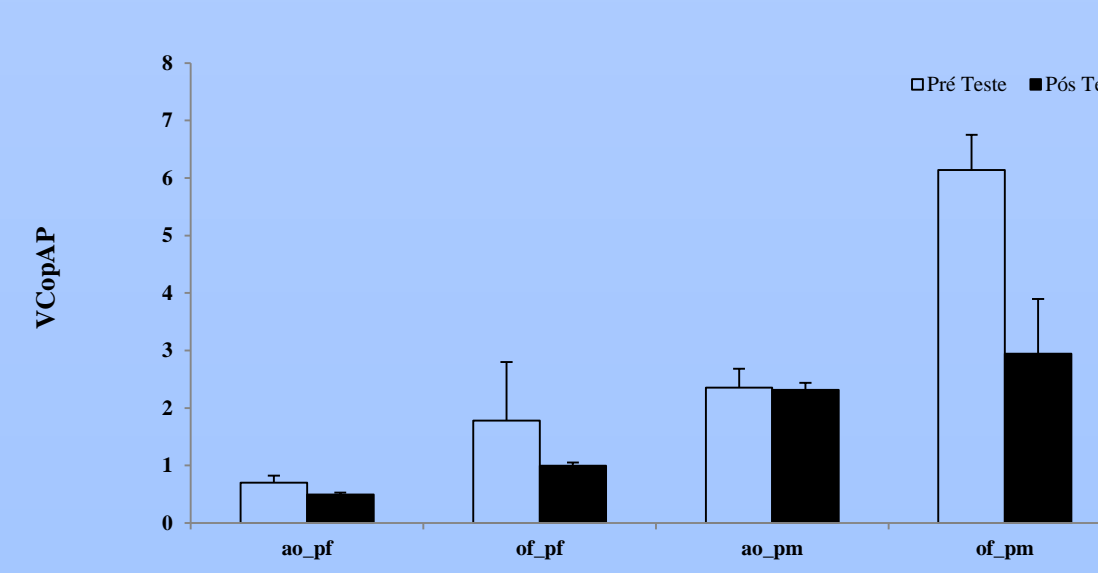


Figure 5. Antero-posterior velocity of COP displacement before and after balance treatment

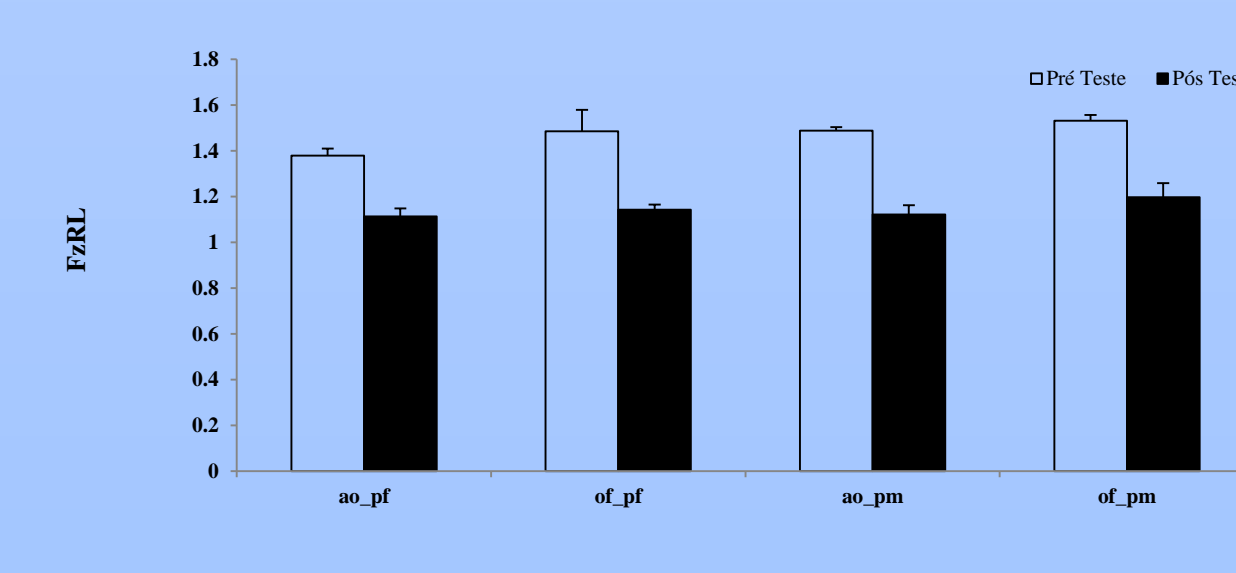


Figure 6. Simetry loading in balance between legs before and after balance treatment

After postural balance treatment, was conducted a behavior cognitive therapy training and the patient experimented progressively the situations that starts anxiety and fear. The patient respond to behavior therapy and anxiety diminished, measured with the Hamilton Anxiety Scale (HAMA). In the beginning patient scored 39 points, and in the end, 30, almost the severe to moderate anxiety difference.

CONCLUSION

The postural balance treatment was capable to stabilize the patient sway and improve the condition to begin cognitive behavior therapy. Both interventions were complementary and lead to a better clinical, functional and psychological condition of the patient.

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