

Dear Editor,

We would like to thank the Reviewer 1 for the constructive evaluation of our manuscript, the positive comments, and the appreciation of our work. We think that some of the proposed changes can be very useful to improve the quality of our case report. Below you can find reviewers' comments in bold and the answers for the comments with the explanation of the changes made in the new manuscript:

Reviewers' comments:

Reviewer 1 Comment:

The manuscript titled “Radial extracorporeal shock wave therapy for plantar flexor spasticity in a spinal cord injury patient: A case report” written by Natalia Comino Suárez et al is quite interesting. Authors applied rESWT to a new indication of SCI associated spasticity. According to the statements from authors, it can achieve good short-term outcome. However, there still some drawbacks in this report.

1. Please construct a table according to the scales and scores of all evaluation items and results.

We have included the Table 1 with the results of each outcome measured at every time point assessment, which you can be found at the end of the manuscript in the section “Table and Figure Legend” and it is attached as extra material.

2. If this method applying in SCI spasticity is a new indication, please provide the IRB and inform consent.

The participant inform consent was provided in the manuscript submission. Since the radial extracorporeal shock wave therapy is a

noninvasive method widely used in clinical settings and it has been evidenced as a well-tolerated without adverse effects therapy, the IRB was not required for the realization of this clinical report.

3. The evidence is not persuasive enough due to the data provided only within one week. Longer period of follow up is essential to advocate the efficacy of rESWT.

We agree with the reviewer, and we considered the short follow up period as a limitation of this clinical case and further studies are needed to clarify our results and to analyze the long-term effects of this therapy in this group of population. However, the immediate findings showed changes in the spastic symptoms in this volunteer, which are relevant and improved his quality of life. In addition, a longer follow-up period was not possible due to the discharge of the patient.

This clinical case could provide preliminary evidence of the beneficial effects of radial extracorporeal shock wave therapy in patients with SCI. We have made some changes in the manuscript, trying to clarify the information and to increase the interest of this case.

4. There are too many interfering factors such as the intensity of rehabilitation, and the detail degree and level of SCI to conduct the conclusion of “rESWT combined with conventional therapy could be effective in improving ankle-passive range of motion and passive resistive force to ankle dorsiflexion in patients with SCI”

As it is described in the “History of present illness” section, the antispastic medication and standard rehabilitation programme did not change the hypertonia in the plantar flexors in the 2 months prior to enrolment. To clarify it we have included in the “Treatment” section that “the antispastic medication and the rehabilitation programme remained the same and did not change throughout the

course of the shockwave treatment". Moreover, we have changed the conclusion trying to adapt it to the results obtained in this volunteer.

5. Or if authors can provide more objective, comparative and in time data, I think it will be more help to achieve acceptance.

We tried to use the most objectives tools available for the assessment of the spasticity in this volunteer. We consider the use of the handheld dynamometer was appropriate since several studies have shown its reliability to assess spasticity by measuring resistance to passive stretch in patients with spinal cord injury ^(1, 2) and infantile paralysis ⁽³⁾.

Reviewer 2 Comment:

The authors submitted a manuscript investigating the effect of radial extracorporeal shock wave therapy (rESWT) on plantar flexor spasticity in a patient with incomplete spinal cord injury. ESWT is among the conservative treatments for Achilles tendinopathy. Unfortunately, no optimal application parameters have been determined that would ensure ESWT effectiveness in this condition. The ideas of this manuscript are not much new to the study of ESWT on plantar flexor spasticity. ESWT is safe and efficacious for the treatment of poststroke plantar-flexor muscles spasticity, reducing muscle tone and improving passive ankle dorsiflexion motion. However, in this manuscript, the authors did nothing more than apply ESWT to a patient with incomplete spinal cord injury. Unless the authors can state clearly the difference between plantar flexor spasticity in patients with spinal cord injury and that in other patients, this manuscript is of little value as a case report.

We disagree with this reviewer's comment. The fact that the radial extracorporeal shock wave therapy would be efficacious for the treatment of plantar-flexor spasticity in stroke patients does not mean that in spinal cord injury patients would be found the same results since

the pathophysiology in both groups of patients is completely different. In patients suffering from spinal cord injury the damage is in the descending tracts that inhibit the lower motor neuron but in stroke patients the damage is in the brain. It has been demonstrated that the reflex period of the pendulum test in stroke patients is generally shorter than in those suffering from spinal cord injury, which might be explained by some excitatory mechanism originating in the brain ⁽⁴⁾.

The English needs to be improved to a certain extent. There are some errors in grammar and format in the whole manuscript: inconsistencies; single and plural expressions; the use of prepositions and definite/indefinite articles; punctuation.

The English was proofread by a professional translator, as you can see in the translation certificate attached in the manuscript submission.

REFERENCES:

1. Lamontagne A, Malouin F, Richards CL, Dumas F. Evaluation of reflex- and nonreflex-induced muscle resistance to stretch in adults with spinal cord injury using hand-held and isokinetic dynamometry. *Phys Ther.* 1998 Sep;78(9):964–8.
2. In T, Jung K, Lee MG, Cho HY. Whole-body vibration improves ankle spasticity, balance, and walking ability in individuals with incomplete cervical spinal cord injury. *NeuroRehabilitation* [Internet]. 2018;42(4):491–7. Available from: <https://www.cochranelibrary.com/central/doi/10.1002/central/CN-01617459/full>
3. Boiteau M, Malouin F, Richards C. Use of a Hand-held Dynamometer and a Kin-Com® Dynamometer for Evaluating Spastic Hypertonia in Children: A Reliability Study. *Phys Ther.* 1995 Oct 1;75:796–802.

4. Kristinsdottir K, Magnusdottir G, Chenery B, Gudmundsdottir V, Gudfinnsdottir HK, Karason H, Ludvigsdottir GK, Helgason T. Comparison of Spasticity in Spinal Cord Injury and Stroke Patients Using Reflex Period in Pendulum Test. *Eur J Transl Myol.* 2020 Apr 1;30(1):8907. doi: 10.4081/ejtm.2019.8907. PMID: 32499899; PMCID: PMC7254420.