Author’s response to reviews

Title: Effectiveness of spinal cord stimulation for painful camptocormia with Pisa syndrome in Parkinson’s disease: A case report

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Version: 1 Date: 22 Jun 2017

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Responses to reviewers’ comments

Response to Reviewer 1

Major points

1. Thank you for the comments. In agreement with your suggestion, we have excluded multiple system atrophy (MSA), and have now stated in the text that there was no abnormality in the basal ganglia, brain stem, and cerebellum on head MRI and CT imaging in this case. Moreover, we added the findings of dopamine transporter (DAT) scan. In this patient, autonomic nerve dysfunction such as orthostatic hypotension and urinary incontinence, and resistance to oral L-DOPA and dopamine agonists, appeared during the advanced stages of Parkinson’s disease (PD), not in the early stages. We think that this is the natural history in this case where the autonomic nerve dysfunction at this stage. Decisively, the wearing off phenomenon is seen in patients with PD but never in patients with multiple system atrophy. Thus, we excluded MSA completely.
2. We have added text on the meaning of SCS-dependent and -independent mechanism in the Discussion section. The term pain relief-independent mechanism refers to direct effects on the central nervous system (e.g., the subthalamic nucleus or globus pallidus), and the pain relief-dependent mechanism refers to the effect of relief of low back pain. Furthermore, we have modified the Conclusion section of the abstract.

Minor points

1. We have modified the sentence as follows: “In this case report, we describe a case of a woman with Parkinson’s disease in whom SCS was effective for painful camptocormia with Pisa syndrome”.

2. We have added details regarding deep brain stimulation (DBS) and have stated the DBS target lesion and maximum voltage ever used.

Response to Reviewer 2

Thank you for the comment. As you suggested, the patient had been receiving L-DOPA (maximal dose was 400 mg) for 3 years before the appearance of wearing off. DBS electrodes were placed because the dyskinesia also appeared around the same time. Thus, we have added the dose and duration of L-DOPA.

Response to Reviewer 3

Major points

Thank you for your constructive comments. As suggested, the manuscript has been professionally edited by a native English speaker familiar with this area of work.

In our experience, symptoms of painful camptocormia with Pisa syndrome were rapidly improved by SCS (in only 1 month). However, because this is a case report, we cannot describe in detail the mechanisms underlying improvement in this patient with painful camptocormia with Pisa syndrome, and so we did not add more case details or a longer observational period. We have added the following sentence, “Her general condition has remained satisfactory for up to 6
months as of this writing”. Therefore, we reported the fact and the estimation of the mechanism of SCS for only this case. Furthermore, we omitted reference 3, which you could not retrieve, and we modified the Discussion section to be as concise as possible, and we believe the length is now appropriate.

Minor points

1. We have added the words “A case report” to the title and slightly modified the first part of the title.

2. We also added the following details about DBS: target, stimulation parameters, name of the implant, and improved symptoms.

3. Spinal nerve coagulation was performed for lumbago at another hospital.

4. The SCS trial period was 1 week, so we have added “1 week” and details about the trial in the text. For the SCS implant, details are as follows: the pulse generator was placed in the subcutaneous pocket of the lower abdomen, and SCS parameters were as follows. Program 1: anode, contacts Nos. 2 and 10; cathode, contact Nos. 0, 1, and 8; amplitude, 2.5 V; pulse width, 450 μs; and frequency, 7 Hz. Program 2: anode, contact No. 0; cathode, contact No. 1; amplitude, 3.5 V; pulse width, 250 μs and frequency, 7 Hz. The patient could control the stimulation herself, but she never did because she was afraid of doing so. We used continuous stimulation and the intensity was adjusted to yield mild paresthesia. The final electrode location was chosen based on the spread of paresthesia. During the insertion of the SCS, and even afterward, the DBS therapy has been continued without adjustment.