Author's response to reviews

**Title:** Transcutaneous Electrical Stimulation of Somatic Afferent Nerves in the Foot Relieved Symptoms Related to Postoperative Bladder Spasms

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**Reviewer reports:**

Chiara Del Prete (Reviewer 1): The article is interesting. I think it needs more dates and a standardizations to describes sintoms.

Answer: thanks for your positive comments, as for the standardization please see our answer to reviewer 2.

Elena Morini (Reviewer 2): The article is interesting. I think it need more data and better way to standardize the collection of data about frequency of spasm and duration of pain.

Answer: thanks for your positive comments. Regarding the way of bladder spasm evaluation, since bladder spasm is easily recognized by the patients, in most of the literature reports (reference 1-3), the number of spasm episode was considered the main parameter, the spasm associated pain was evaluated with Visual Analogue Scale (VAS). In our study, the bladder spasm severity was also evaluated with the above two parameters (in Table 2). In addition, considering bladder spasm often results in urgency incontinence and urinary leakage around the
urethral catheter, a total score of bladder spasm symptoms was calculated, the total score also included an evaluation for the duration of pain (Table 1).

Nikesh Thiruchelvam (Reviewer 3): This is a simple short paper with short follow-up during the perioperative period.

Some minor suggestions are made below to improve the paper.

Abstract:

Results should include time of follow-up

Answer: thanks for your positive comments. Because bladder spasm usually disappear 3 days after surgery, therefore, we evaluated only three days postsurgery and further longer follow-up was not performed.

Methods:

"To avoid the placebo effects, patients in the treatment group were told that the stimulation may or may not have effects on the spasm-related symptoms." - would remove this line as this is not placebo.

Answer: this sentence has been removed, method section, line 130 page 6.

Discussion:

Include more discussion on RCTs on PTNS for OAB treatment.

Answer: this information has been added in the revised MS (discussion section line 241-246 page 11), and two more references has been added :reference 22 and 23.

Expand the paragraph on available treatments for postoperative bladder spasm that are referenced.

Answer: we expanded the information for available treatment modality in the first paragraph of discussion. Discussion section, line 186-188 page 9.

Paul B. Yoo (Reviewer 4): 1. The use of a bladder spasm symptom score is problematic. Although it combines multiple weighted variables into a single integer, the inclusion of variables such as the VAS and # of spasms are redundant since they are already provided and analyzed in Tables 2 and 3. It might be more informative if the bladder diary data were analyzed separately. And, above all, the total score does not appear to have been validated elsewhere. If so, please provide a reference.
Answer: in addition to pain sensation, bladder spasm often results in urgency incontinence and urinary leakage around the urethral catheter, in order to comprehensively and objectively assess the symptom severity of bladder spasm, a total score of bladder spasm symptoms was calculated as shown in table 1. In the total score, pain was not evaluated with VAS score, instead, the duration of pain per day was counted. Since there were three objective items in the questionnaire (leakage, pain duration and number of episode), it should be more objective than only evaluated with the subjective “VAS” score.

It is a good suggestion that bladder diary data should be analyzed separately, however, since we only focused on bladder spasm related presentations in this study, we did not collected bladder diary data.

It is true that the symptom score have not been validated internationally, we referred one Chinese report to create this evaluation system, unfortunately it was published in Chinese, and could not be put into the reference list. We apologize for this.

2. With regards to the bladder spasm symptom score, what is the difference between 'urgent incontinence' and 'urinary leakage around catheter'? If the latter is not associated with urgency, what is causing the leakage and how is it relevant to bladder spasms? Also please confirm that 'urination feeling' is equivalent to urgency.

Answer: we apologize for this confusion. “urgent incontinence” means a subjective feeling of the patients, “urinary leakage around catheter” was a objective observation identified by both patient and the nurse. The reviewer is right urination feeling is equivalent to urgency, we have replaced urination feeling with urgency in table 1.

3. The authors compare separately the symptoms for prostate and bladder surgery in the control group (table 2), but this is not done for the treatment. Is there a reason why these data were not summarized and analysed separately?

Answer: it is a good question. In table 2 we compared the symptom severity between prostate and bladder surgery only in control group, our main purpose is to see whether surgery approach alone affect the severity of bladder spasm, because in control group we did not apply stimulation and the only influencing factor was the surgery approach, whereas in experiment group electrical stimulation was applied.

4. In the discussion - lines 236 to 240, do the authors mean that tibial nerve stimulation was tried but had no effect in patients with post-operative bladder spasms? Or, that tibial nerve stimulation has never been tested in bladder spasm patients? Please clarify.

Answer: we apologize for the confusion. We did not do tibial nerve stimulation, also to our knowledge, no study in which the effect of tibial nerve stimulation on bladder spasm was found in the literature. We have done a little change to try to clearly express this idea in the revised MS, (discussion section, line 238-240 page11).
5. On line 130, please remove "to avoid placebo effects", because placebo effects are very likely not being avoided in this study.

Answer: It has been removed, method section, line130 page6, thanks!