Reviewer's report

Title: Clinical and physiological effects of transcranial electrical stimulation position on motor evoked potentials in scoliosis surgery

Version: 1 Date: 8 January 2010

Reviewer: Paul H Strutton

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Reviewer's report on
Clinical and physiological effects of transcranial electrical stimulation position on motor evoked potentials in scoliosis surgery by Lo et al.

Please number your comments and divide them into:

- Major Compulsory Revisions

None

- Minor Essential Revisions

1. Abstract, page 3, conclusions, line 2. Change “contributed by summation of…” to “contributed to by summation of…”
2. Introduction, page 4, paragraph 1, line 5. Remove the parenthesis after electrode.
3. Methods, page 5, paragraph 4. “a train of 4-twitch assessment was performed using a nerve stimulator”. Could this be elaborated on, as I am unsure as to what was actually performed as part of this assessment (which nerve, stimulation electrode positions, stimulation parameters etc).
4. Methods, page 6, paragraph 2. Change “pedicle screws was averaged” to “pedicle screws were averaged”.
5. Methods, page 6, paragraph 2. Remove the word “the” from “obtain the a final mean”.
6. Methods, page 6, paragraph 2. Change “minimal intensity required” to “minimal intensities required”.
7. Methods, page 6, paragraph 2. Remove the parentheses from around the sentence beginning “(In some circumstances…” and change MEP to MEPs.
8. Methods, page 6, final paragraph. Please elaborate on the sentence “During insertion of pedicle screws and instrumentation, a 50% reduction of the MEP amplitude or 10% prolongation of latency was brought to the surgeon’s attention.” What was carried out by the surgeon in light of these observations.
9. Discussion, page 8, paragraph 1, first sentence. Change “The main findings of our study was..” to “The main findings of our study were..“.
10. Discussion, page 9, paragraph 2, lines 5 & 6. I do not quite follow why longer latency MEPs are indicative of “more focal, unilateral motor cortex activation.” Surely MEPs resulting from transcallosal conduction would be of longer latency rather than those resulting from direct focal stimulation?

11. Discussion, page 10, paragraph 1, line 11. Remove the underscore from between “resulted_in”.

12. Discussion, page 10, paragraph 1, line 17. Please elaborate on “demonstrated to possess excitatory in addition to inhibitory properties (6)(12)”. What did these studies show that demonstrates this?


- Discretionary Revisions

1. I would suggest adding labels to indicate left and right sides of the body on the figure.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'