**Reviewer’s report**

**Title:** Comparison of lumbar plexus block using the axis in-plane method at the plane of the transverse process and at the articular process: A randomized controlled trial

**Version:** 1  **Date:** 11 Oct 2017

**Reviewer:** Vishal Uppal

**Reviewer’s report:**

Thanks for the revised version of manuscript

The revised version is much improved but still considerable work needs to be done to improve reporting quality.

The popularity of lumbar plexus blocks (LPB) has gradually declined due to the high incidence of complications associated with the block and limited indications. Nye et al. 2013 in the follow-up of 2013 cases observed significant complications in 3.8% of patients receiving LPB. 9.4% patients reported prolonged sensory or motor deficits. 1.9% patients experienced persistent neurologic symptoms. One patient had a fall, one patient was readmitted for a possible bilateral spread, and two patients experienced symptoms of local anesthetic systemic toxicity (LAST). Dogan et al. 2014 have reported total spinal anesthesia. Delayed retroperitoneal hematoma (Aveline 2004) have also been reported. It is unclear if these complications can be prevented entirely with the use of ultrasound imaging. Authors have not acknowledged most of these potential complications in the manuscript.

Abstract: In the background, it appears that dual guidance is novel for LPB which is not true. Both control group and intervention group used dual guidance. This is a practice followed by most clinicians as plexus is usually not visible on ultrasound imaging. In conclusion, wording "excellent" technical choice is too strong. At best we can describe it as promising as the availability of data regarding this technique is limited from this small study of 60 subjects. As pointed out by authors, future larger studies will tell us in the complication rates are comparable to convention technique of LPB.

Background: Lumbar plexus is located between anterior 2/3 and posterior 1/3 of psoas major muscle (not in posterior 1/3).

The argument is vague "the effect seems not very good."

The technique of block used for the control group was as described by Doi et al. this should be referenced.

Methods: The methods should be written in past tense as the study has been completed, currently all the description is in the future tense. The description of randomization is still awkward although it is acceptable. The initials of attending doctors have been should be given as CY, YC and YL and not CYY. The familiarity of the anesthesiologist in performing erector spine block is not relevant to the study. Should be removed.
I am not familiar with the ultrasound-guided approach to the sciatic nerve block. The technique described resembles Labat landmark approach. Please provide a reference to support this approach.

While describing control, please reference figure 1, likewise while describing beach chair method, please reference figure 2 so that it is easy for readers to understand.

The needle insertion point in beach chair methods is at lateral abdomen wall. This means that the needle path may encounter bowel during the procedure. The possibility of injury to bowel during the technique should be acknowledged in the discussions section.

The motor assessment scale is not standard or described adequately. It looks like level 1 and level 2 have been interchanged. Please provide a reference to inform if this is a validated way of assessing motor block.

The statement "It took roughly 15 sec to do motor assessment" If this was not measured at the time of study should be deleted.

Important details of the intra-operative management of the subjects are missing. Did the patients receive a general anesthetic or spinal anesthetic or sedation for Surgery? If surgery was completed with just block and sedation implies high success rate of the block.

Please specify if the trial design was superiority, equivalence or non-inferiority. The minimal clinically important has been incorrectly stated as 6.67, please delete.

Results: Number of needle puncture is count data should be expressed in median and range (or IQR) not standard deviation.

"There was no significant in ipsilateral sensation and motor blocking rate between two groups 5min, 15min and 30min after lumbar plexus block." The results for each time point is not presented.

Discussion: This section should start with important findings like epidural spread and needle visibility scores and not less important findings such as imaging, needling times and puncture attempts. Possible complication such as the possibility of bowel injury with lateral (beach chair) approach should be acknowledged.

Avoid vague statements like "Although some people think" and "this phenomena may be ignored by many researchers".

The terminology "skew out" has been used multiple times. Please be use a more specific term or explain.

Again the use of term "excellent technical choice" in conclusions is aggressive. Please modify

The manuscript needs significant language and grammar editing
Thanks for opportunity to review

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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Nil

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