Reviewer's report

Title: Gait Characteristics of Pincer Nail Cases: Clinical Evidence of the Involvement of Mechanobiology in Nail Configuration: a case control study

Version: 1 Date: 1 March 2015

Reviewer: Kate Springett

Reviewer's report:

1. Is the question posed by the authors new and well defined?

This is an interesting study and will help towards understanding aetiology. The authors are a little pre-emptive in proposing processes in the discussion that are not fully supported by their study, and they need to be clearer about what is supposition and what is informed by their work.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

Major compulsory revision

This is an area for further attention. More detail is needed on the data collection methods e.g. were all three data collection sessions sequential and at the same visit or separated by days or longer, how was method and instrumentation determined as being valid for the purpose of this study, any pilot studies undertaken to demonstrate repeatability thus trustworthiness of the data obtained, were bilateral measures taken?

A diagram to illustrate where measures of nail parameters were taken from would help. For example ‘height of nail’ forms part of the index proposed for measuring pincer nails; where is the measure of height taken from and to? A similar comment applies to the width.

There is no statement that ethics approval was obtained. Though authors state informed consent provided by participants prior to data collection in accordance with ethical principles.

3. Are the data sound and well controlled?

Please see (2). Results analysis seems appropriate, though could be made more reader-friendly for those who have to work at understanding stats.

Although there is a brief section explaining what statistical tests were undertaken, it would be helpful if the test selected was aligned to the data presented in the results section, e.g. the paragraph starting “The pressure on the great toe of the pincer nail group was significantly lower than the great toe…..”, what was the statistical test selected here?
4. Do the figures appear to be genuine, i.e. without evidence of manipulation?

Figure 1 in my view does not confer useful information.
Figure 4 (foot loading on S plate) appears genuine and is a useful inclusion, illustrating the foot loading that the authors take care to explain in the text of their paper.
Figure 5 needs its caption content including within the paper and although the caption heading indicates this is a hypothesis, the supposition needs stating within the text of the paper more clearly.

5. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Yes, with caveats as noted.

6. Are the discussion and conclusions well balanced and adequately supported by the data?

Quite a lot of the discussion would be better placed in the introduction. Generally there is link between findings and interpretation, however it is important to clarify what is supposition or proposed, and what is direct interpretation from the scope and findings of the study.

7. Do the title and abstract accurately convey what has been found?

The title could be more precise e.g. Foot loading is different in people with and without pincer nails: a case control study.
The abstract is good.

8. Is the writing acceptable?

Generally the paper reads well, and is clear.
The second paragraph of the results is rather tortuous and would benefit from a bit of re-writing, otherwise authors appear to have aimed to write succinctly.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare I have no competing interests