Reviewer’s report

Title: The new Lyon brace: ARTbrace. New concepts based on scoliosis detorsion. Prospective study of the first 225 early radiological results of in-brace correction

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Reviewer: Luke Stikeleather

Reviewer’s report:

I applaud the Author and his colleagues on their collaborative effort to think outside the box and see scoliosis treatment in a new way. Clearly the results are quite good and the protocol is certainly easier on patients than the plaster cast process used with the "old Lyon" method.

I apologize for being so picky about details in format, grammar and content...however, some revisions are essential if the authors want to "show" their work and have it recognized in the most favorable light on the world stage. The ART brace is no longer a prototype or experimental brace, but a new "twist" altogether compared to its mother/father, the Lyon Brace.

A stronger, more thorough background and introduction section in the abstract and main paper is essential to help readers understand the authors historical perspective with EDF plaster casting and the Lyon brace. Highlight previous studies supporting the positive results with casting and Lyon brace but also explain the challenges and complications that prompted a need for improvements that ultimately resulted in the development of this new design concept.

While the ART brace could be defined as a modified or "new" Lyon brace, I suggest you emphasize that this completely replaces the casting and old Lyon brace process; it really deserves to be recognized as its unique design that has surpassed its predecessor and former protocol.

The Methods section of the abstract would benefit from editing and polishing and should focus strictly on the process and statistical comparisons. Easier if the concepts are presented in an introduction.

The results section needs more detailed description on the rows, specifying "Cobb angle" or Curve magnitude in degrees. See Table 1.

The content has great potential...and with some grammatical corrections and revisions from a professional editor will be cleaner, clearer and easier to read!

Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published

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!'