Reviewer’s report

Title: Reversal of childhood idiopathic scoliosis in an adult, without surgery: a case report and literature review

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Reviewer: Manuel Rigo

Reviewer’s report:

I appreciate very much the effort made by the authors to improve their paper in response to my report. The paper is fine. However, as I pointed out in my first report, the methodology used in this case report when measuring the Cobb angles of the scoliotic curves is at least questionable. No matter how high is the certification of those measuring the X-Rays, the question is how experts are they in the specific issue of scoliosis. I think that an expert in the issue do not need to re-view the Moe’s text book in order to measure the Cobb angle with accuracy and reliability. The authors state that the main thoracic curve has been measured from T4 to T12 and the lumbar minor curve from L1 to L2. The lines drawn on the X-Rays (figure 4) show a different thing. First X-ray: The upper end vertebra taken by the authors seems to be T4 (just counting from caudal and assuming that there is no anatomical variation) but the line on the upper end plate is overmeasuring the inclination of the vertebra to my point of view. I cannot see one vertebra in this area with such an inclination. The lower end vertebra should be, according to the authors T12, but the line is marked on the lower end vertebra of L1. In any case, I personally would take T5 as upper end vertebra and most probably T11 as lower end vertebra of the main thoracic curve. The Cobb angle is around 47º in agreement to what the table 2 indicates but the lines on the X-ray are confusing. In the lumbar curve, both lines are overmeasuring in this same X-Ray, with a real Cobb angle near to 30º. The same picture (figure 4) shows the last X-Ray taken in 2005. In this X-ray, counting from cranial, it seems that the upper end vertebra is well selected on T4, however when counting from caudal it can be observed 5 lumbar vertebrae and from T12 the thoracic curve defined by the authors include 8 but not 9 vertebrae. Thus, it seems that in this second case the selected vertebra was T5. In the lower part, the authors again mark a line on the lower end plate of L1 and this line should be drawn on the lower end plate of T12, according to their own explanations. Even more, there is a second couple of lines on L2, creating still more confusion. The limits of the main thoracic curve seems to be also T5 and T12 or T11. Cranially it could be taken even T6 as the most tilted vertebra to the concavity. The angular values in this second X-Ray are over 30º and around 18º for the main thoracic and the minor lumbar curve respectively. The line drawn by the authors on the upper end plate of their selected upper end vertebra is undermeasuring clearly.

X-Rays show a different curve with a clear improvement from the first one to the second. This improvement is radiologically and clinically (as reported by the
authors) significant, but not in correspondance with what the authors report. I strongly recommend the authors to send again the X-Rays to One-Independent-Scoliosis-Expert. Just and expert, showing with lines how the Xrays have been measured, is enough with no more needs. The methodology used by the authors demonstrates a clear interest to prevent bias but unfortunately this present reviewer can not accept the reported results in table 2 and figure 4. Reporting accurate angular values this paper would be an article of importance in this field, but considering all the above mentioned points I must declare myself unable to decide on acceptance or rejection for a second time.

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

**Quality of written English:** Acceptable

**Declaration of competing interests:**

I declare that I have no competing interests