



Magnetically controlled growing rods: a less invasive treatment for early onset scoliosis

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We would like to thank *AME Medical Journal* for inviting us to write an editorial comment on the recently published article by Lebon *et al.* in the *European Spine Journal* entitled “Magnetically controlled growing rod in early onset scoliosis: a 30-case multicenter study” (1). Historically reports on spine-based distraction techniques such as traditional growing rods (TGR) were dominantly from North America. The trend of reports on the newer devices and techniques including magnetically controlled growing rods (MCGR) has recently shifted more towards European countries mainly to the UK as well as Hong Kong where the approvals were earlier than USA. It is very encouraging to see other countries are now involved in trying MCGR and reporting their findings, which eventually will benefit the early onset scoliosis (EOS) patients all around the world. This report by Lebon *et al.* in a multicenter setting in France is a very promising step in line with global popularization of MCGR and we would like to congratulate our French colleagues for undertaking this study.

In addition to the location of the current study, we found several important points, which make this paper an interesting article to read. This study reported on a 30-case retrospective multicenter study of EOS patients treated with MCGR. Based on the results, the authors concluded that MCGR is a safe and effective method for treating this population of patients. Interestingly, Lebon *et al.* on the issue of effectiveness of MCGR has considered the difficulties to achieve desired distraction as an outcome measure in addition to the more common parameters including T1–T12 and T1–S1 height, scoliosis magnitude,

and kyphosis. By this move, certainly they have set the bar higher in reporting the effectiveness of MCGR. It is important to mention that based on our preliminary unpublished results of a systematic review of the literature, there is no consensus on the minimum requirements in evaluating safety and efficacy of the MCGR or TGR techniques. We have observed that for the past decade the majority of authors reporting MCGR or TGR results are focusing on the minimal efficacy parameters. After a decade of similar reports on similar parameters maybe it is appropriate to set the bar higher as was done in the current paper.

Additional efficacy outcome measures, which might be considered for future publications are quality of life, lung function, thoracic dimension measures, nutritional status, psychiatric and developmental measures, and the effects of these devices on coronal, sagittal and pelvic parameters. Unfortunately, not many authors regularly collect and report these additional outcome measures. Also, findings on the effects of foundation anchors types and configurations on instrument related complications (IRC) was presented in International Congress on Early Onset Scoliosis (ICEOS) (2). That report highlighted the importance of crystal clear reports on the anchor types and configurations. Very interestingly Lebon’s paper meets this requirement.

On the other hand, there are few points that the authors may consider that improve the quality of any MCGR safety and efficacy reports including the current article. Hosseini *et al.* have reported on 23 MCGR cases with minimum of

two years follow up (3). In that report it has been shown that the outcome of conversion MCGR cases, based on their prior treatment may be different. In that study, the authors recommended to report the results of primary and conversion cases separately in future publications. Keskinen *et al.* echoed the same findings and suggestions (4). In addition, it is highly recommended to separate the results of single rods from dual rods as it has been noted in several publications that the outcomes are different (5).

All in all, it is obvious that Lebon *et al.* have done a tremendous work to improve the care for EOS patients in France. We hope to see more centers all around the world adopt this new technique and help to improve its already proven benefits.

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Footnote

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