Reviewer's comment concerning “the effect of intraoperative skeletal (skull-femoral) traction in apical vertebral rotation” by St Lewis et al. (MS-no: ESJO-D-08-00312R1)

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This paper by Lewis et al. sets out to quantify the effects of skull-femoral traction on apical vertebral rotations of significant scoliotic curves undergoing surgical intervention. As noted in the paper, there has evolved to be a greater appreciation for the rotational aspect of scoliosis over time. Achieving correction of the Cobb angle and apical rotational aspects of a curvature prior to initiating surgical intervention would be expected to facilitate exposure, instrumentation, and possibly correction of a deformity. Skull-femoral traction is evaluated for this purpose in the current study.

The paper did find a significant reduction in Cobb angle and apical vertebral rotation after the application of skull-femoral traction relative to preoperative film measurements. The authors conclude that there are significant potential advantages to this technique.

My primary concern with this paper is that the effect of skull-femoral traction is not evaluated as an independent variable as the comparison radiographs were upright preoperative films as opposed to films taken immediately

before applying traction. The authors note that there was greater correction than would have been expected with lying the anesthetized patient prone on a surgical frame, but the relative effects of these factors is not evaluated. Clearly, this information is important if the effect of the skull-femoral traction is to be defined.

Further, an empirically chosen weight was chosen for the traction. The authors describe approximately 50% of body weight applied through the limbs and 20–25% of body weight applied through the skull as counter-traction. However, there is no suggestion of how these weights were selected.

Overall, this paper describes a cohort of patients with significant scoliotic curves for whom skull-femoral traction was used. This is shown to be a technique with significant potential advantages in selected patients. I would suggest that this could be further investigated with the relative effect of graded, skull-femoral traction as an independent variable if the indications and specifics of this technique are to be defined.

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