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Comments on “in vivo demonstration of the effectiveness of thoracoscopic anterior release using the fulcrum bending radiograph: a report of five cases” (Cheung et al.)

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We would like to congratulate the authors for having shown that in vivo the video assisted thoracoscopic release increases the flexibility of the spine as judged by the fulcrum bending test that the Hong Kong Group devised 10 years ago. Their paper is very clear about it. Their study shows that a VATS release increases the flexibility of the spine by an average of 10° and that the final Cobb angle can be predicted by the post VATS fulcrum bending test if one uses a classic segmental hook system.

The study has, however, some limitations: the patient group used in the study is fairly small, and one wonders which film (traction vs. classic bending or traction film under general anesthesia or fulcrum bending films) should be used to assess curve flexibility. Traction film has clearly shown that the reducibility of the curve was better for curves of more than 60° whereas bending films were better for curves of less than 60° [5]. Other teams performed traction films under general anesthesia to find an opportunity for anterior release and found a significant difference between classic bending and traction film under general anesthesia [3]. However, these later authors do not find any correlation between the traction film under general anesthesia and the final correction as opposed to the fulcrum bending films.

The relevance of the paper for clinical practice presently seems to be limited as most deformity surgeons would use pedicle screw or at least hybrid systems. For curves in the range of 70°, one could argue about the need to perform an anterior release as new segmental screw instrumentation associated with radical posterior release would bring the curve to a Cobb angle value of less than 30°, as has been shown by Suk and also by our recently published study. [2, 4]. Then, is there any clinical difference in terms of balance, cosmesis and number of fused vertebrae between a 50 and a 60% Cobb angle correction? This has not been proven. The objectives of surgery in adolescent idiopathic scoliosis are many: to achieve a balanced spine, to limit the number of fused segments and to maximise cosmesis (balanced trunk, balanced shoulders and decrease of the thoracic prominence). Adding an anterior release for 70° curves that correct to less than 50° on side bending or fulcrum test even done through thoracoscopy may add significant morbidity [1].

One should be more interested in looking at the rest of the spine that was not fused (overall balance of the mobile spine below the instrumented spine) than at the Cobb angle correction within the instrumentation. There is a natural tendency for the orthopedic surgeon to look at the

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instrumentation. However, what is left unfused below the instrumentation is by far more interesting than the instrumented area (whatever the number of screws, hooks or cables we can see on the X-rays !!). Scoliosis surgery is not a contest for Cobb angle correction but rather a contest for a cosmetic, a functional clinical and

radiographic result, associated with low morbidity. The usefulness of the fulcrum bending test will have to be updated to the most modern segmental instrumentation and its relevance in achieving better clinical outcome must be assessed.

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