

Peer Review File

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Reviewer A

Comment 1: The authors present a retrospective series of patients with flat back syndrome treated with ACR using an ATP approach with placement of an hyperlordotic cage (15-20 degrees) combined with posterior osteotomy to improve lumbar lordosis and sagittal alignment. Most of the cases presented are patients who had prior lumbar fusion. The series is heterogenous but represents a mix of patients that is commonly found in most spine surgery deformity practice. Although this technique has now been adopted by much more surgeons over the last few years, it is true that published clinical and radiological outcome data regarding this technique is lacking. I want to congratulate the others on presenting thoroughly all their radiological data before and after surgery. Functional outcomes such as preoperative and postoperative Oswestry Disability Index scores would have been welcome to add more strength to the study. One of the main advantages of the ATP approach compared to transpsoas surgery is that the psoas muscle is usually not disturbed which reduces the incidence of postoperative thigh pain, leg weakness and femoral nerve injury. This can result in faster ambulation and recovery after surgery. It would be interesting if the authors can share their clinical data on postoperative left thigh pain and hip flexion or quadriceps weakness in this series of patients.

Reply 1: The authors appreciate your comments and agree with this assessment. We have added a subsection for functional outcomes that discusses post-operative clinical data. Unfortunately, our institution does not gather ODI or specific patient reported outcome scores; thus, they were subjective, which is a limitation of this study. However, objective neurologic examination data was obtained and reported with demonstrated no cases of new onset lower extremity weakness or paresthesia. This is now discussed within the limitations section as well. The following changes to the text were made:

Changes in the text:

- Lines 241-247 - “Functional Outcomes: Thirteen patients (92.9%) reported improvement in pain and mobility at final mean follow-up of 34.0 ± 23.4 months. There were no cases of new lower extremity paresis, paresthesia, or increased lower extremity pain post-operatively including thigh pain or pain with hip flexion. One patient (7.1%) experienced increasing back pain starting 51 months post-operatively and underwent revision extension at a follow-up of 56 months due to PJK and PJF as described previously.
- Lines 331-335 - “Finally, our institution did not utilize patient-reported outcome scores, which did not allow an objective measurement of post-operative functional outcomes. However, all outcomes were described in terms of subjective improvement in pain and mobility post-operatively at final follow-up and objective neurologic examination data was obtained and documented.”

Reviewer B

Comment 2: Consider addition of patient reported outcomes to further bolster the manuscript.

Reply 2: The authors appreciate your comments and agree with this assessment. We have added a subsection for functional outcomes that discusses post-operative clinical data. Unfortunately, our institution does not obtain specific patient reported outcome scores; thus, they were subjective, which is a limitation of this study. However, objective neurologic examination data was obtained and reported. This is now discussed within the limitations section as well. The following changes to the text were made:

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