

Peer Review File

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Reviewer Comments

Comment 1: You refer to ACR in line 108, however, LLIF and ACR should be differentiated since ACR is an extremely high-risk procedure. When considering the life-saving measures required in case of an emergency, performing ACR in the prone position is simply not recommended. Here, I would like to ask the author's opinion. Could you clarify your position on this point?

Reply 1: When lateral lumbar interbody fusion is performed with the addition of an anterior longitudinal ligament (ALL) release, it provides the opportunity to further correct sagittal plane deformity with a hyper lordotic interbody device, without requiring a substantial dissection of the great vessels (13). It is important to note that the ALL must be separated from the anterior structures, with blunt dissection, before release in order to prevent injury to the great vessels (13).

Comment 2: Additionally, the article lacked specifics on intestinal injury. The risk of intestinal injury is a major challenge in LLIF, and it is thought that LLIF in the prone position may reduce this risk. Therefore, if possible, I'd like to ask what the author's views are on the risks of intestinal injury providing details that would shed light on the author's position.

Reply 2: We listed prone position allowing intraperitoneal contents to fall away from the operative field as a potential advantage in lines 244-247. We added some further elaboration and citations to this point including the following. In a study by Dodo et al., it was shown that placing the patient prone did in fact shift the abdominal contents ventrally which theoretically would decrease the likelihood of iatrogenic injury to abdominal contents, however, this shift was not large enough to completely eliminate the risk so careful preoperative planning is warranted.

Dodo Y, Okano I, Kelly NA, Haffer H, Muellner M, Chiapparelli E, Shue J, Lebl DR, Cammisa FP, Girardi FP, Hughes AP, Sokunbi G, Sama AA. The anatomical positioning change of retroperitoneal organs in prone and lateral position: an assessment for single-prone position lateral lumbar surgery. *Eur Spine J.* 2023 Jun;32(6):2003-2011. doi: 10.1007/s00586-023-07738-w. Epub 2023 May 4. PMID: 37140640.

Comment 3: Include a table of the included articles

Reply 3:

Authors	Title	Journal
Farber et al.	Single-position prone lateral transpoas approach: early experience and outcomes.	J Neurosurg Spine
Guiroy et al.	Single-Position Surgery versus Lateral-Then-Prone-Position Circumferential Lumbar Interbody Fusion: A Systematic Literature Review.	World Neurosurg

Authors	Title	Journal
Lamartina et al.	Prone single-position extreme lateral interbody fusion (Pro-XLIF): preliminary results.	Eur Spine J
Gandhi et al.	Prone transpsoas lumbar corpectomy: simultaneous posterior and lateral lumbar access for difficult clinical scenarios.	J Neurosurg Spine
Hoffman et al.	Three-dimensional Navigation-guided, Prone, Single-position, Lateral Lumbar Interbody Fusion Technique.	J Vis Exp
Walker et al.	Single-Position Prone Lateral Interbody Fusion Improves Segmental Lordosis in Lumbar Spondylolisthesis.	World Neurosurg
Alluri et al.	Location of the Femoral Nerve in the Lateral Decubitus Versus Prone Position.	Global Spine J
Pimenta et al.	Single-Position Prone Transpsoas Lateral Interbody Fusion Including L4L5: Early Postoperative Outcomes.	World Neurosurg
Smith et al.	Effects of Surgical Positioning on L4-L5 Accessibility and Lumbar Lordosis in Lateral Transpsoas Lumbar Interbody Fusion: A Comparison of Prone and Lateral Decubitus in Asymptomatic Adults.	World Neurosurg
Soliman et al.	Comparison of Prone Transpsoas and Standard Lateral Lumbar Interbody Fusion Surgery for Degenerative Lumbar Spine Disease: A Retrospective Radiographic Propensity Score-Matched Analysis.	World Neurosurg
Stone et al.	Prone-lateral access to the lumbar spine: single-level corpectomy with approach discussion.	Neurosurg Focus Video
Godzik et al.	Single-position prone lateral approach: cadaveric feasibility study and early clinical experience.	Neurosurg Focus
North et al.	Navigation and Robotic-Assisted Single-Position Prone Lateral Lumbar Interbody Fusion: Technique, Feasibility, Safety, and Case Series.	World Neurosurg
Martirosyan et al.	Prone Lateral Lumbar Interbody Fusion: Case Report and Technical Note.	World Neurosurg
Amaral et al.	The Effect of Patient Position on Psoas Morphology and in Lumbar Lordosis.	World Neurosurg
Pimenta et al.	Prone Transpsoas Technique for Simultaneous Single-Position Access to the Anterior and Posterior Lumbar Spine.	Oper Neurosurg (Hagerstown)

Authors	Title	Journal
Smith et al.	Initial multi-centre clinical experience with prone transpoas lateral interbody fusion: Feasibility, perioperative outcomes, and lessons learned.	N Am Spine Soc J
Salmons et al.	Prone Versus Lateral Decubitus Positioning for Direct Lateral Interbody Fusion.	Clin Spine Surg
Gandhi et al.	Anatomical positional changes in the lateral lumbar interbody fusion.	Eur Spine J
Courville et al.	Effects of thigh extension on the position of the femoral nerve: application to prone lateral transpoas approaches to the lumbar spine.	Neurosurg Rev
Soliman et al.	Prone Transpoas Lateral Lumbar Interbody Fusion for Degenerative Lumbar Spine Disease: Case Series With an Operative Video Using Fluoroscopy-Based Instrument Tracking Guidance.	Oper Neurosurg (Hagerstown)
Pimenta et al.	The prone transpoas technique: preliminary radiographic results of a multicenter experience.	Eur Spine J
Buckland et al.	Single position circumferential fusion improves operative efficiency, reduces complications and length of stay compared with traditional circumferential fusion.	Spine J
Goldberg et al.	Single-Position Fluoroscopy-Guided Lateral Lumbar Interbody Fusion With Intraoperative Computed Tomography-Navigated Posterior Pedicle Screw Fixation: Technical Report and Literature Review.	Int J Spine Surg
Shahrestani et al.	A case report of robotic-guided prone transpoas lumbar fusion in a patient with lumbar pseudarthrosis, adjacent segment disease, and degenerative scoliosis.	Int J Surg Case Rep
Hiyama et al.	Facet joint violation after single-position versus dual-position lateral interbody fusion and percutaneous pedicle screw fixation: A comparison of two techniques.	J Clin Neurosci
Wang et al.	Single-position prone transpoas fusion for the treatment of lumbar adjacent segment disease: early experience of twenty-four cases across three tertiary medical centers.	Eur Spine J
Hiyama et al.	Comparison of radiological changes after single- position versus dual- position for lateral interbody fusion and pedicle screw fixation.	BMC Musculoskel et Disord
Dodo et al.	The anatomical positioning change of retroperitoneal organs in prone and lateral position: an assessment for single-prone position	Eur Spine J

Authors	Title	Journal
	lateral lumbar surgery	
Farber et al.	Complications associated with single-position prone lateral lumbar interbody fusion: a systematic review and pooled analysis	J Neurosurg Spine

Comment 4: The article: “28. Amaral R, Daher MT, Pratali R, Arnoni D, Pokorny G, Rodrigues R, et al. The Effect of Patient 432 Position on Psoas Morphology and in Lumbar Lordosis. World Neurosurg. 2021;153:e131-e40”; is duplicated

Reply 4: This article was duplicated when listed under the References as numbers 26 and 28. The duplication has been corrected.

Comment 5: There are two other articles by Pimenta et al, that might be added here following the doi: 10.1007/s00586-020-06471-y AND 10.1016/j.wneu.2021.01.118)

Reply 5: Both 10.1007/s00586-020-06471-y AND 10.1016/j.wneu.2021.01.118) were included in the literature review, though specific data from these articles was not cited in the manuscript. These articles are now included in the article table and we have ensured that all articles from the literature review are included in the table