

The Effect of Exparil(Injectable Liposomal Bupivacaine) on length of stay after outpatient Midline Fusion



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Introduction

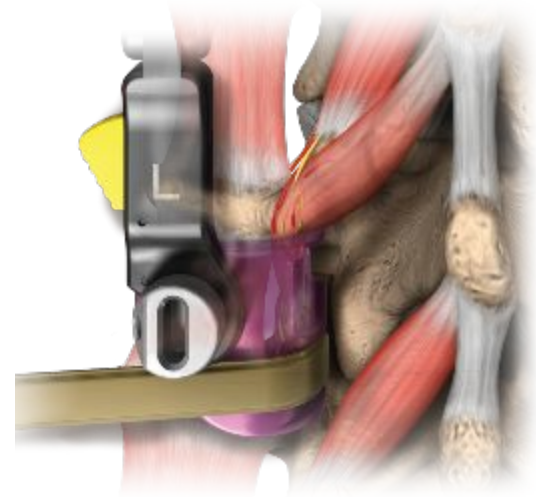
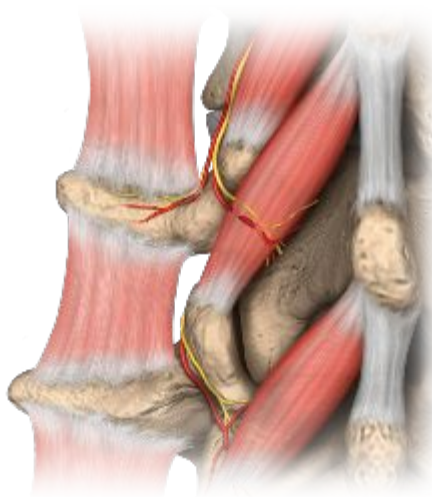
- ? Overall - Progression of Lumbar spine fusion to more minimally invasive techniques
- ? Overall shift of spine surgery to the outpatient surgery
- ? No clear Best practice for outpatient Lumbar fusions
- ? Outpatient surgery and Bundled payments – increased focus on “true costs of procedure”

Long procedures with high complication rate-
“Don’t let anyone operate on your spine”

- Spine
- SPINE Volume 41, Number 35, pp S39–S43
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- EDITORIAL
- Breaking Through the “Glass Ceiling” of Minimally Invasive Spine Surgery
- Frank M. Phillips, MD,* Ivan Cheng, MD,[†] Y. Raja Rampersaud, MD,[‡] N. A. Khan, MD,[§] Luiz Pimenta, MD, PhD,[¶] W.B. Rodgers, MD,^{||} Juan S. Uribe, MD,^{**} Nitin Khanna, MD,^{††} William D. Smith, MD,^{‡‡} Jim A. Youssef, MD,^{§§} Wale A.R. Sulaiman, MD, PhD,^{¶¶} Amir J. Tohmeh, MD,^{|||} Andrew Cannestra, MD,^{***} Richard N.W. Wozniak, MD,^{†††} David O. Okonkwo, MD, PhD,^{‡‡‡} Frank Acosta, MD,^{§§§} Evelyn J. Rodgers,^{||} and Gunnar Andersson, MD*

Anatomy

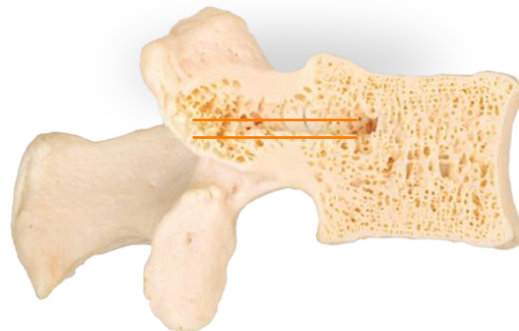
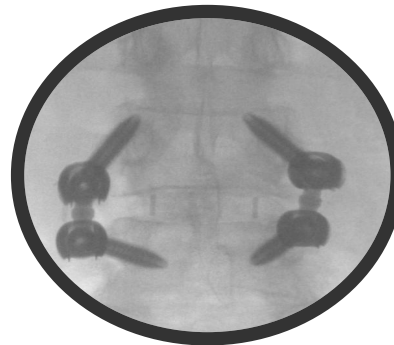
- ? Muscle innervated from lateral to medial
- ? Release of fascia and retraction from medial to lateral preserves muscle neurovascular supply



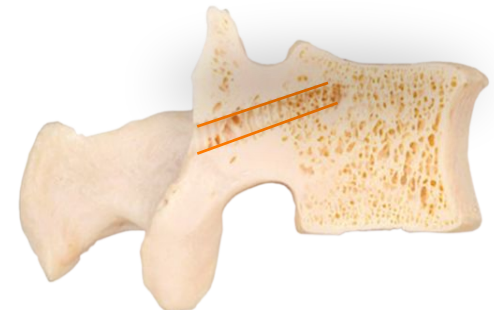
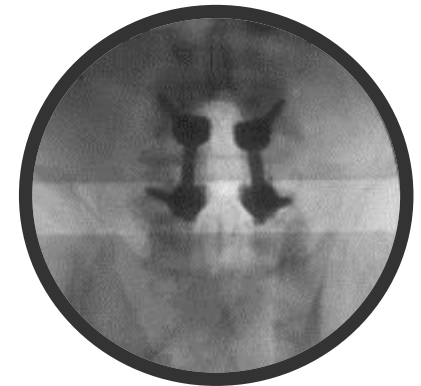
Cortical trajectory – Pedicle screws

- ? The key to the midline approach is ability to gain pedicle fixation utilizing a cortical trajectory screws – Medial to lateral trajectory

Traditional Screw

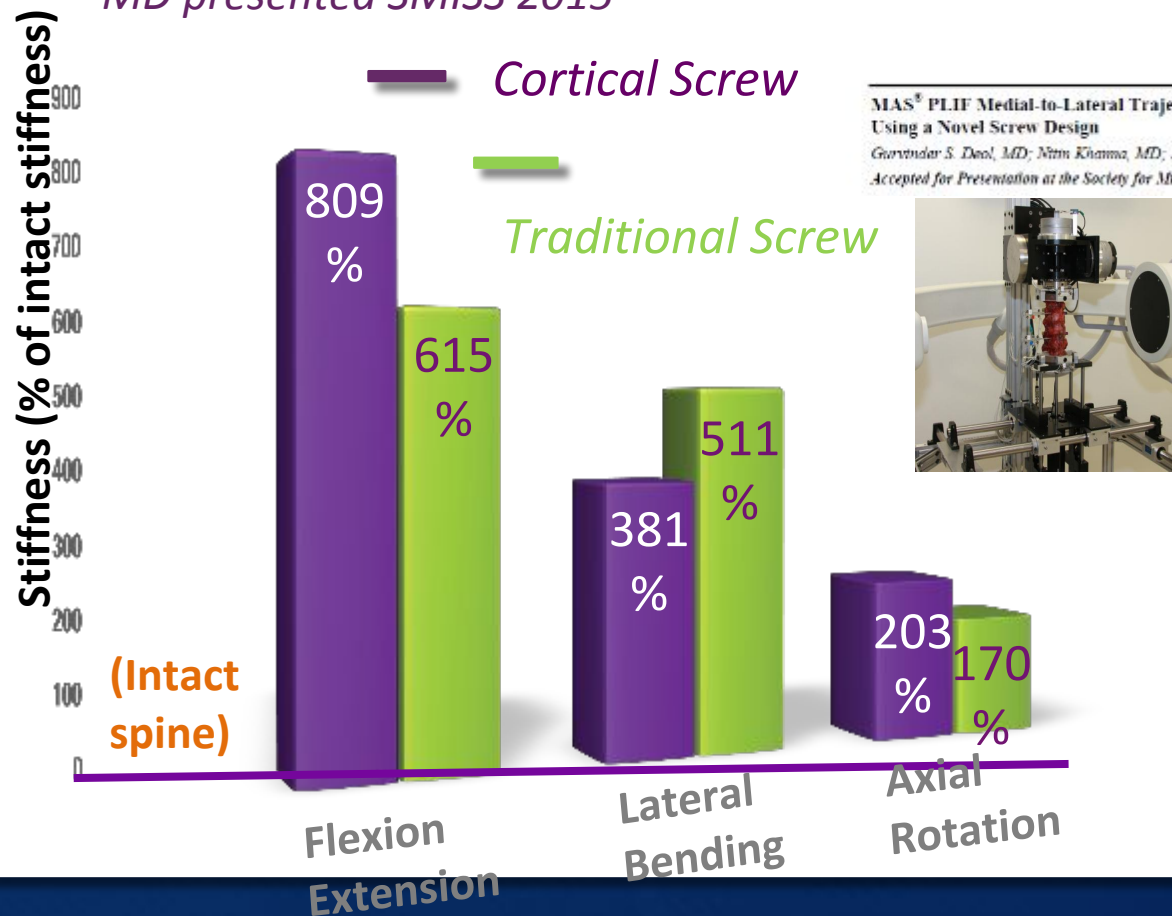


Cortical



Review of Literature

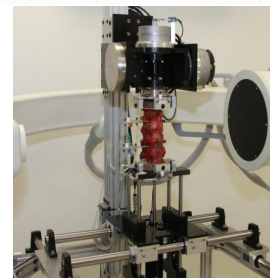
Nitin Khanna, MD, Gurvinder Deol, MD, Gregory Poulter, MD, and Arvind Ahuja, MD presented SMISS 2015



MAS[®] PLIF Medial-to-Lateral Trajectory Pedicle Screws (Cortical/Pars Screws) – A Biomechanical Analysis Using a Novel Screw Design

Gurvinder S. Deol, MD; Nitin Khanna, MD; Bradley A. Heiger, MD; Zachary A. Dooliny; Alexander W. L. Turner, PhD*

Accepted for Presentation at the Society for Minimally Invasive Spine Surgery (SMISS) Annual Meeting 2012, Miami, FL.



SPINE publication

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Medialized, Muscle-Splitting Approach for Posterior Lumbar Interbody Fusion

Technique and Multicenter Perioperative Results

Nitin Khanna, MD,^{*} Gurvinder Deol, MD,[†] Gregory Poulter, MD,[‡] and Arvind Ahuja, MD[§]



Outpatient Poster presentation

Presented ISASS 2017

Avg Length of stay 133 minutes

No 30 day readmissions

EBL 69.2 cc

No infections

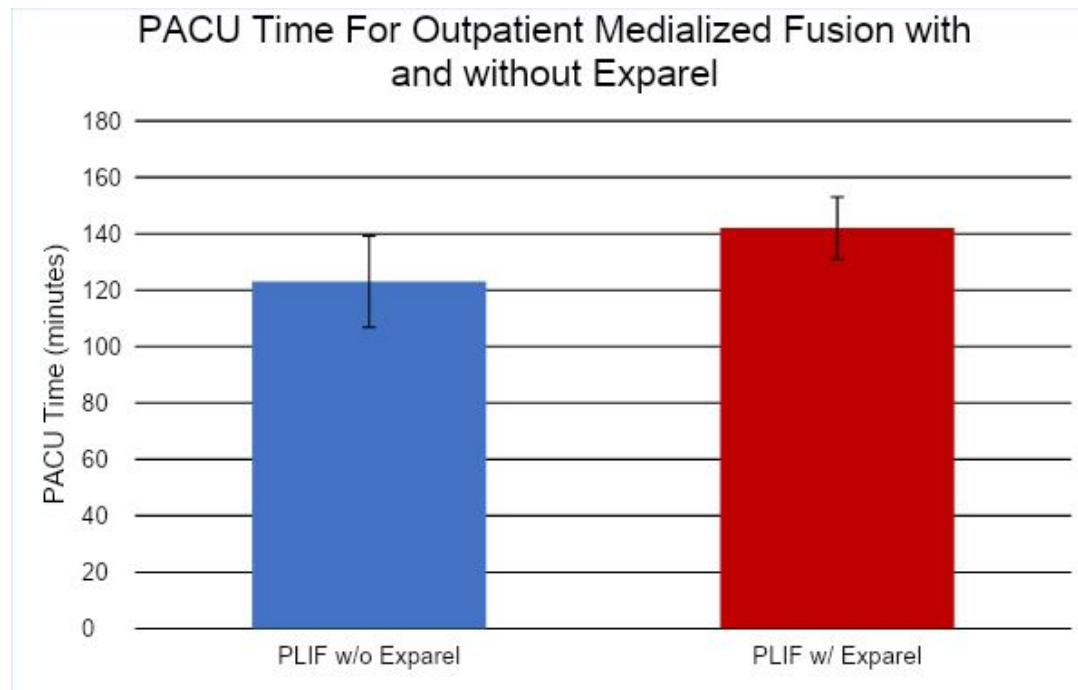
 •A-846-0000-00005 Early Clinical Results of a Novel Medialized Muscle Splitting Posterior Spinal Fusion- In the Outpatient Setting Nitin Khanna MD			
ABSTRACT • Introduction The evolution of minimally invasive spine surgery has pushed many inpatient procedures to the outpatient setting. The potential for shorter recovery times and decreased infection rates are major benefits of minimally invasive spine surgery. The medialized approach takes advantage of minimal muscle disruption and was designed to satisfy all of the core principles of spinal fusion including: direct decompression of the neural elements, rigid bilateral pedicle screw fixation, utilizing a cortical trajectory pedicle screws, and bilateral interbody cages which allows for a large surface area for fusion. The procedure is a midline approach that takes advantage of the medialized space (medial to the lateral aspect of the facet joints). This minimally invasive approach preserves the neurovascular supply to the paraspinal muscles. We report our early results with the MAG PLIF procedure performed in the outpatient setting. • Methods A retrospective chart review was performed to look at 15 consecutive patients with regards to demographics, length of stay, EBL, and 30 day readmission rates. • Results 15 consecutive patients underwent a MAG PLIF in an outpatient setting. 9 patients were male and 6 patients were female. The average age was 44.2 (range 31-55). All patients had a one level MAG PLIF. The BMI for patients 27.0 avg(range 20-40.7) 9 patients had commercial insurance and 6 patients had workman's compensation claims/liability claims. The average length of stay was 133 minutes (range 57-310). Estimated blood loss was recorded as 69.2 ml average(range 20-200) and no patient required a blood transfusion or transfer to a hospital. No patient had to be readmitted within 30 day of the procedure. No infections were noted. • Discussion Joint replacements in properly selected patients are now routinely being performed in the outpatient setting. The potential to move lumbar fusion to the outpatient setting utilizing advanced minimally invasive spinal surgery would be a significant opportunity for patients and payers to benefit from decreased infection rates, quicker recovery and achieve cost benefits. There has been significant research to demonstrate the safety and reproducibility of microdiscectomy, cervical fusion and cervical disc replacement in the outpatient setting. There is limited data on outpatient minimally invasive lumbar fusion. Our early data suggest that the MAG PLIF procedure can be performed safely and reproducibly in the outpatient setting. Further research performed in a prospective multi-center study is needed to validate these early findings.			
• Bilateral Pedicle screws • Bilateral Interbody Cages • Robust Interbody Fusion		    • Medialized Muscle Sparing Approach • Preservation of the neurovascular supply to the paraspinal muscles	
		Methods •Retrospective Review •15 consecutive patients Results • Avg Length of Stay - 133 minutes • No Blood transfusions • No 30 day readmissions • No Infections • EBL (avg) 69.2 cc Conclusions • Based on this pilot study - Lumbar fusion utilizing this novel medialized approach can safely be performed in the outpatient setting	

Methods

- ? Retrospective review
- ? n= 30
- ? 14 Local anesthetic only
 - ? Marcaine with epi only for incision and into muscle after fascial closure
- ? 16 local plus exparel
 - ? Marcaine with epi for incision, and Exparil injected into muscle after fascial closure at conclusion of procedure
- ? Commercial insurance and worker's compensation

Results

? Length of stay – avg 123 minutes without, 142 with



Takeways

- ? Exparel – mechanism of action consistent with longer acting pain relief – so length of stays under 3 hours are more likely associated with the marcaine effect
- ? Patient selection for outpatient spine fusion is the most important factor in achieving shorter length of stays
- ? Great teamwork from preop, intraop nursing and anesthesia as well as postop – key to success