

MAS[®] PLIF

Dr Saeed Kohan

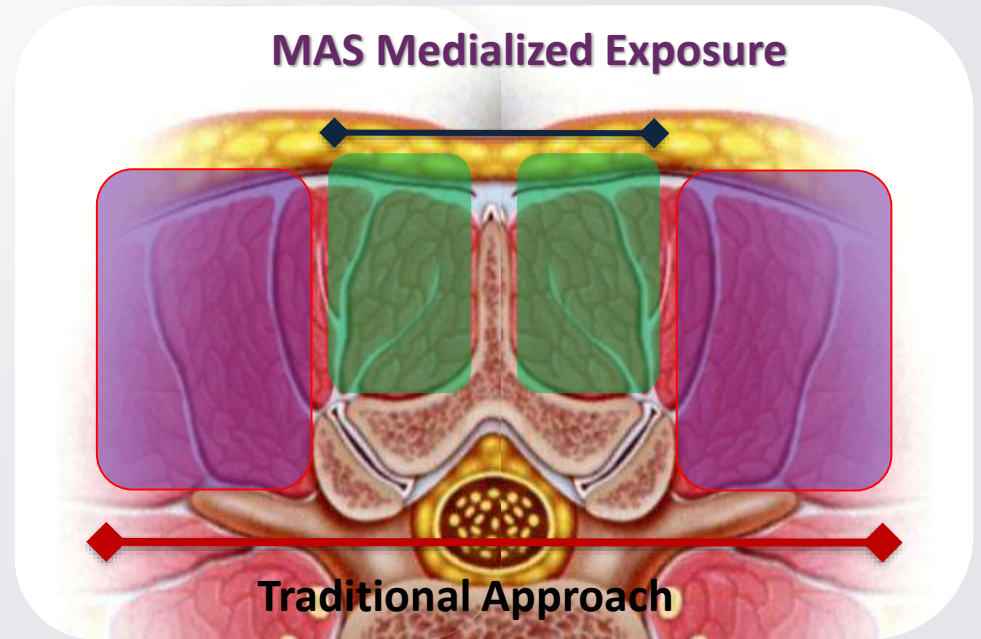
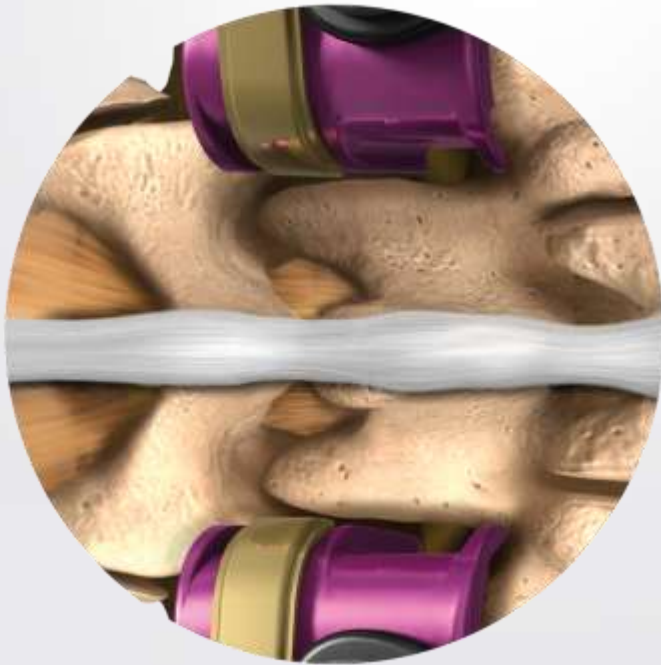
MASPLIF L4-5
St George Public
25th January 2017



Speed of Innovation

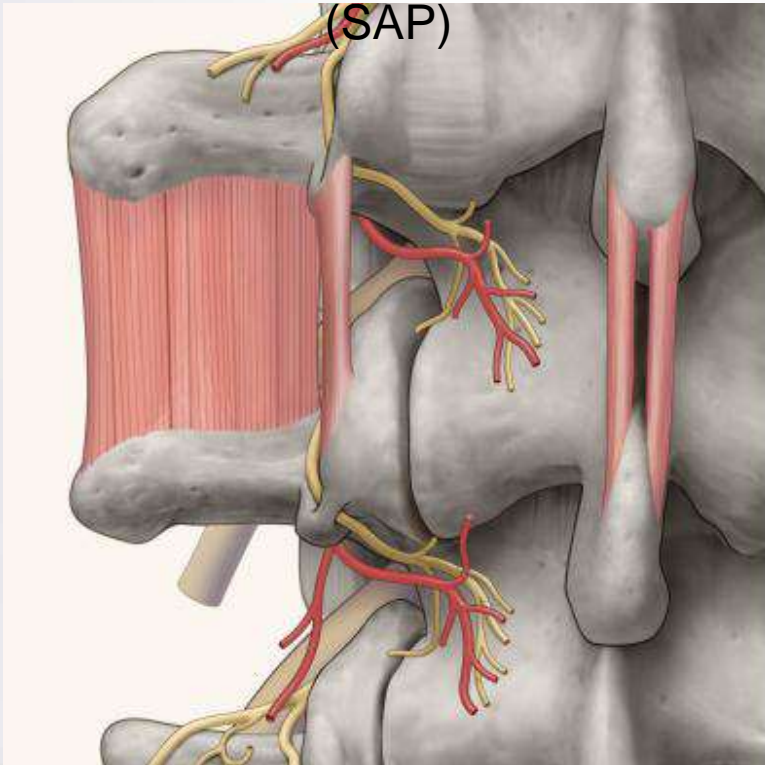
MAS[®] PLIF - Exposure

Medialized Exposure

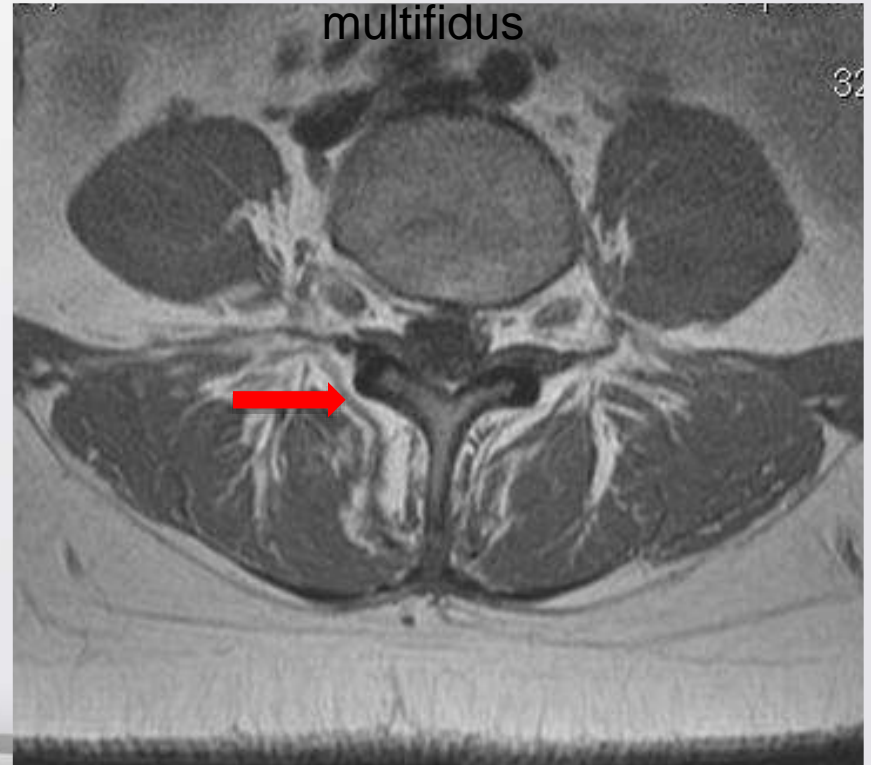


Avoiding Multifidus Denervation

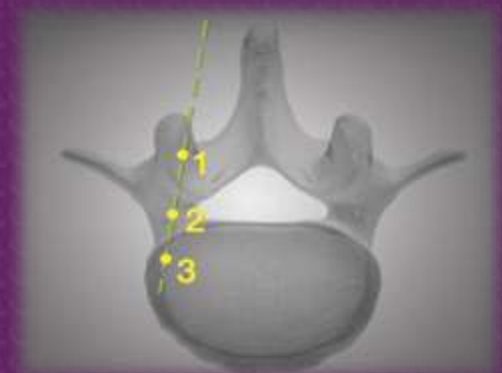
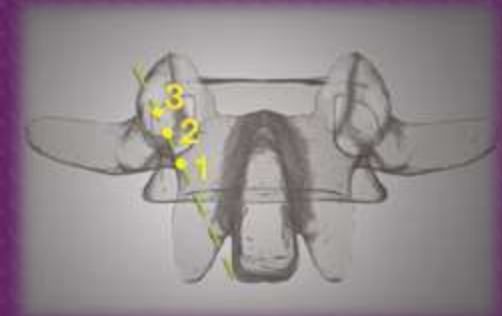
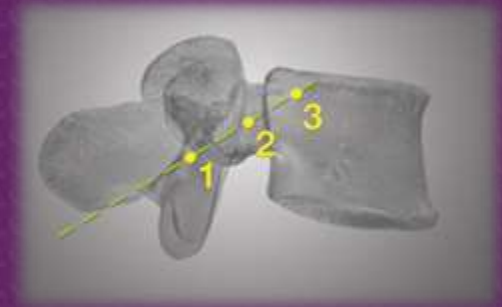
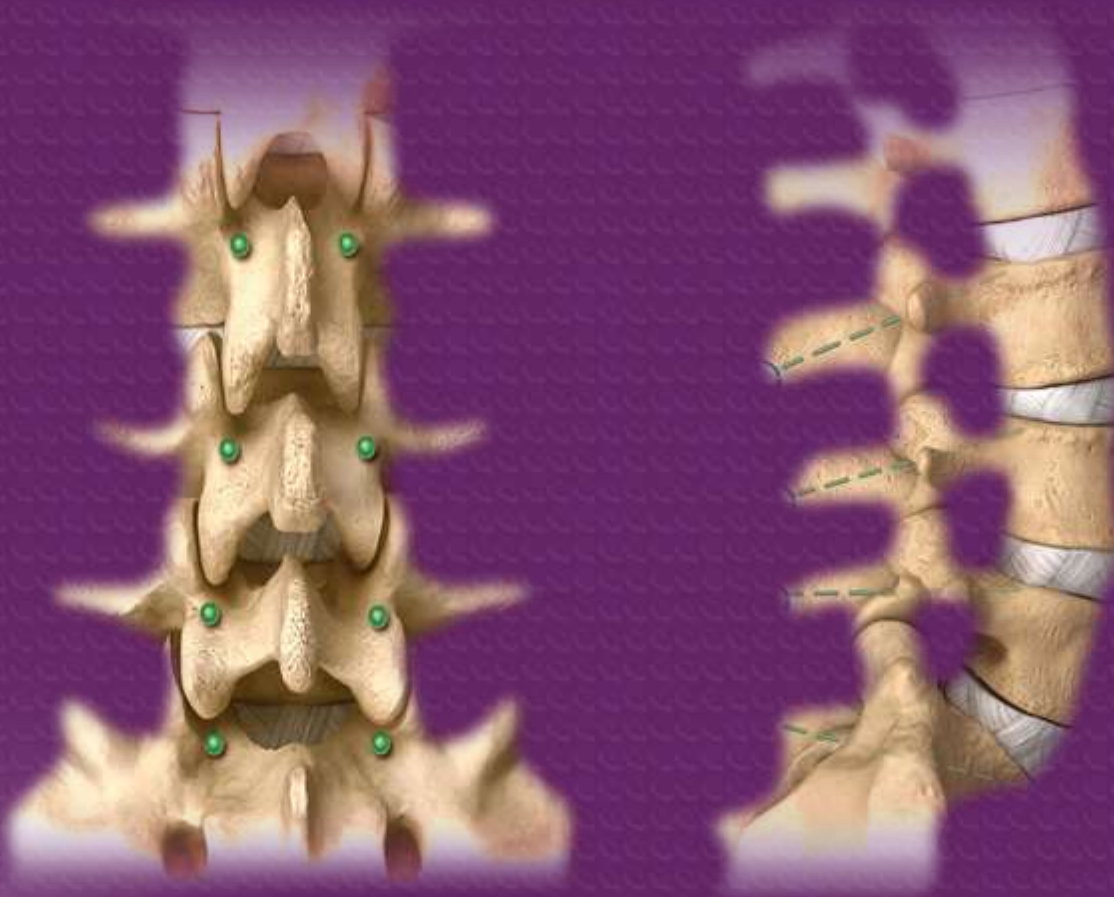
Below picture shows neurovascular innervation to the Multifidus originating lateral to the Superior Articular Facet (SAP)



The artery of the pars interarticularis (arrow) courses over the pars and provides vascularization to the multifidus



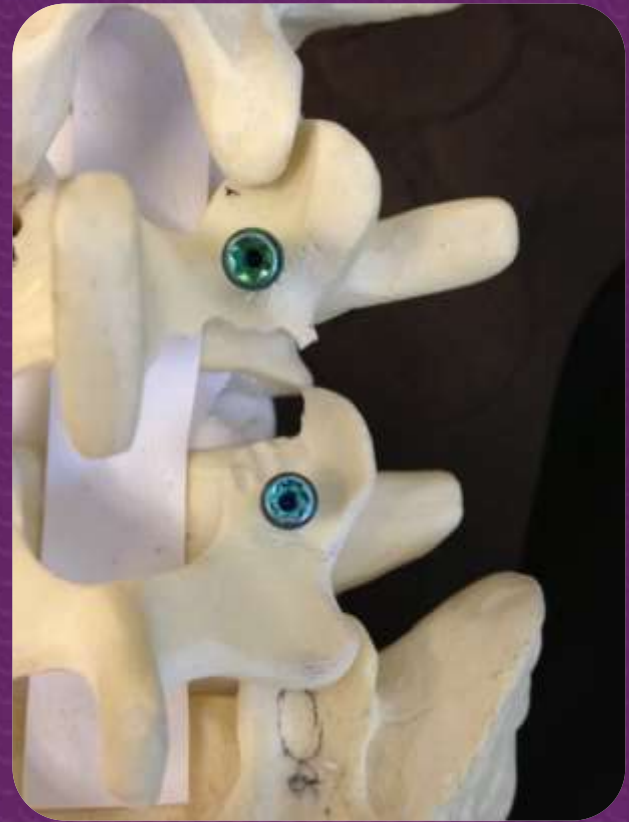
Screw Trajectories



Up and Out
Medial to Lateral

Decompression

- Bilateral decompression removing the following:
 - Inferior articular processes
 - Superior 2/3 of the superior articular processes
- No dura retraction



MAS PLIF Screw Biomechanics



The Spine Journal 9 (2009) 366–373



Cortical bone trajectory for lumbar pedicle screws

B.G. Santoni, PhD^a, R.A. Hynes, MD^b, K.C. McGilvray, MS^a, G. Rodriguez-Canessa, BS^a,
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Received 19 February 2008; accepted 20 July 2008

RESULTS:

- Cortical trajectory screws demonstrated a 30% increase in uniaxial yield pullout load relative to the traditional pedicle screws (p50.080)
- Although mixed loading demonstrated equivalency between the two trajectories.
- No significant difference in construct stiffness was noted



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MAS PLIF Screw Biomechanics

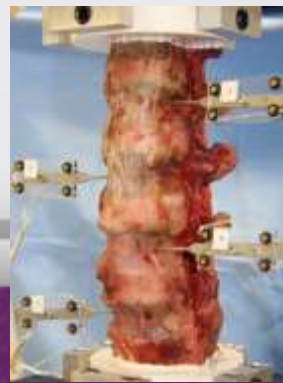
NuVasive®, Inc.
August, 2012

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. Heiges, MD; Zachary A. Dooley; Alexander W. L. Turner, PhD**

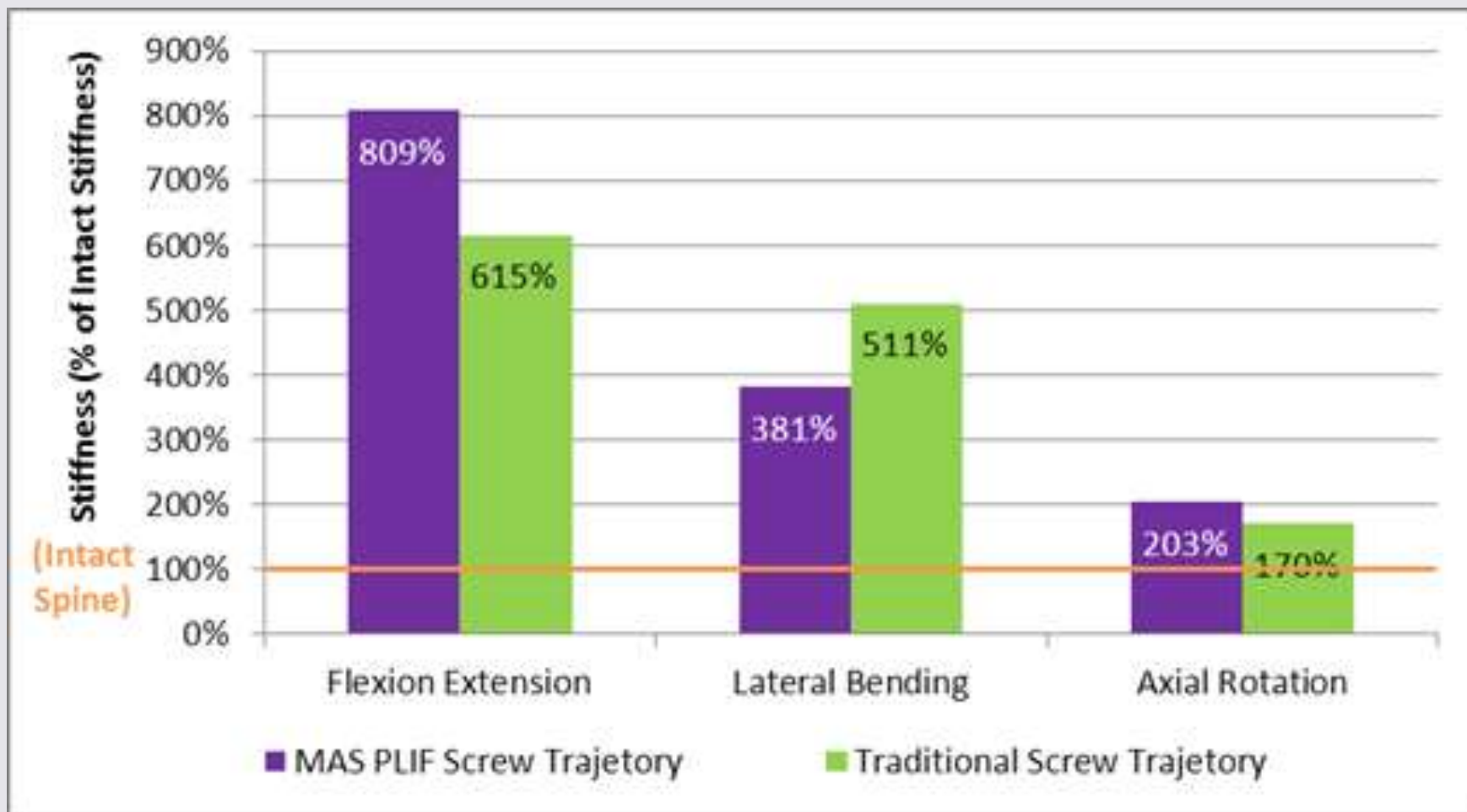
Accepted for Presentation at the Society for Minimally Invasive Spine Surgery (SMISS) Annual Meeting 2012, Miami, FL.

- Compare rigidity of bilateral MAS PLIF construct vs. conventional bilateral pedicle screw construct
- 6 cadaveric spines (L1-sacrum); dissected and cleaned
- Multi-directional flexibility testing to ± 7.5 Nm (flexion-extension, lateral bending, axial rotation).
- Tested intact (for baseline ROM)



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Biomechanics Results - Stiffness

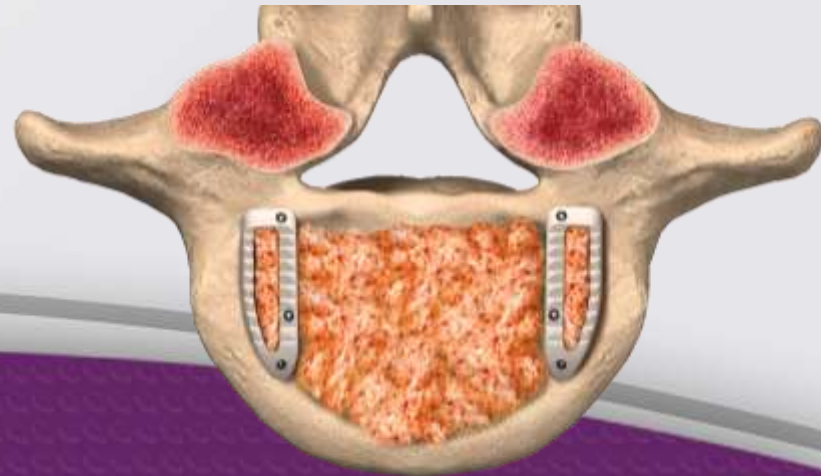


Why MAS PLIF?

Application Specific Implants

Interbody Advantages:

- Far lateral insertion *minimizes or eliminates neural traction*
- Lateral intradiscal placement for apophyseal ring coverage to minimize subsidence
- Insert and rotate for focal sagittal balance correction



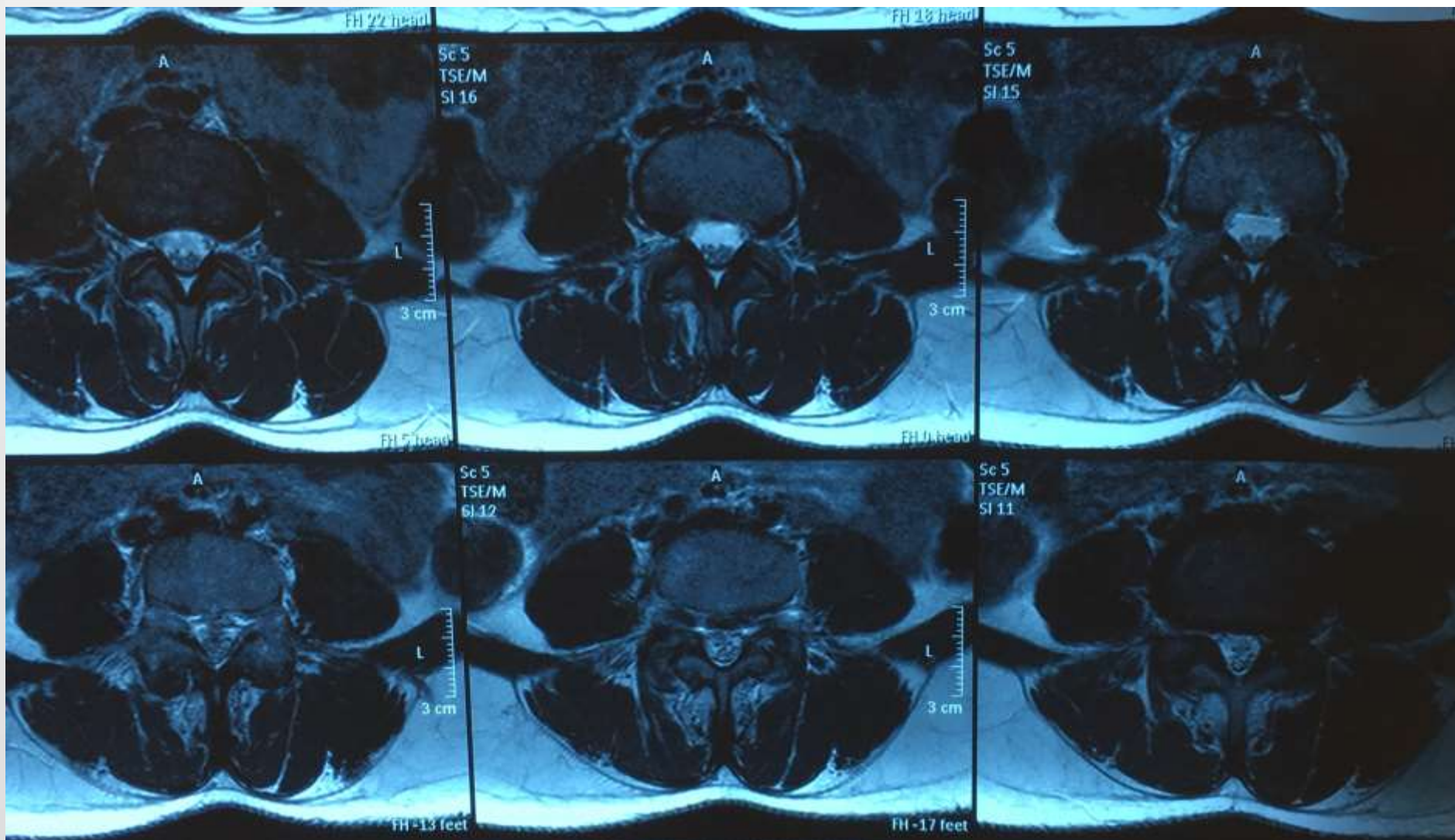
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Patient Presentation

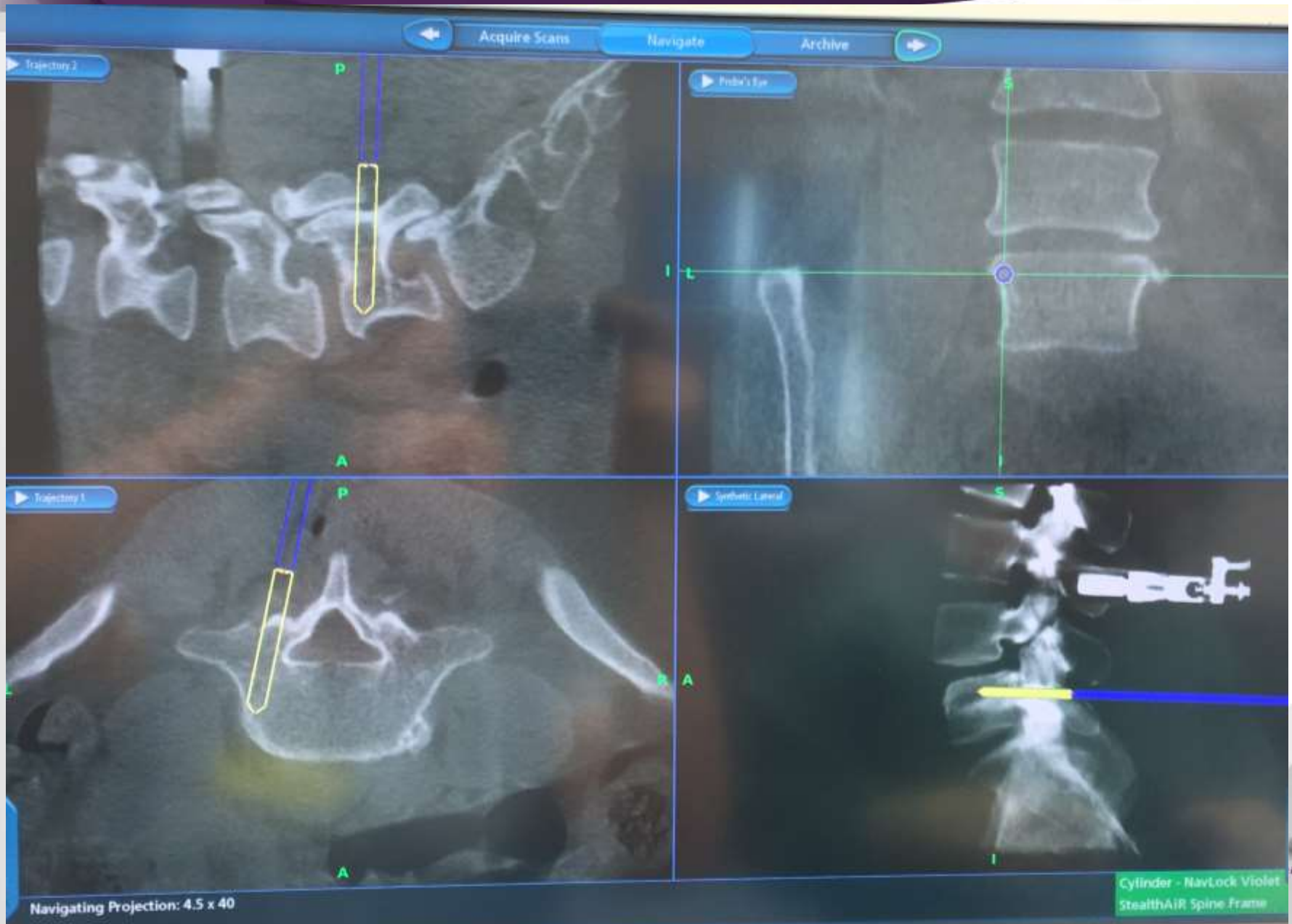
- L4-5
- 38 y.o. female



Axial MRI



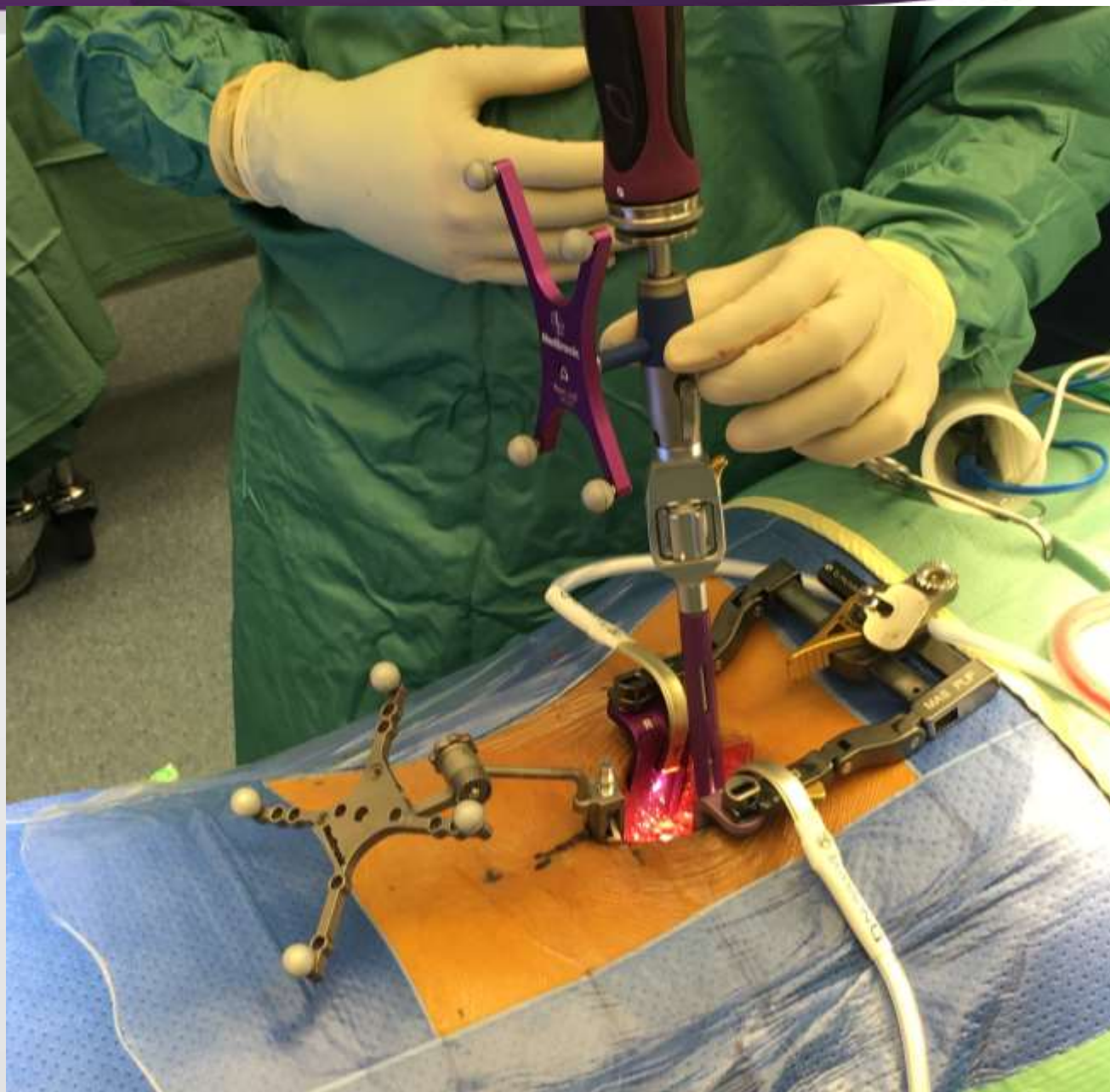
Stealth Navigation

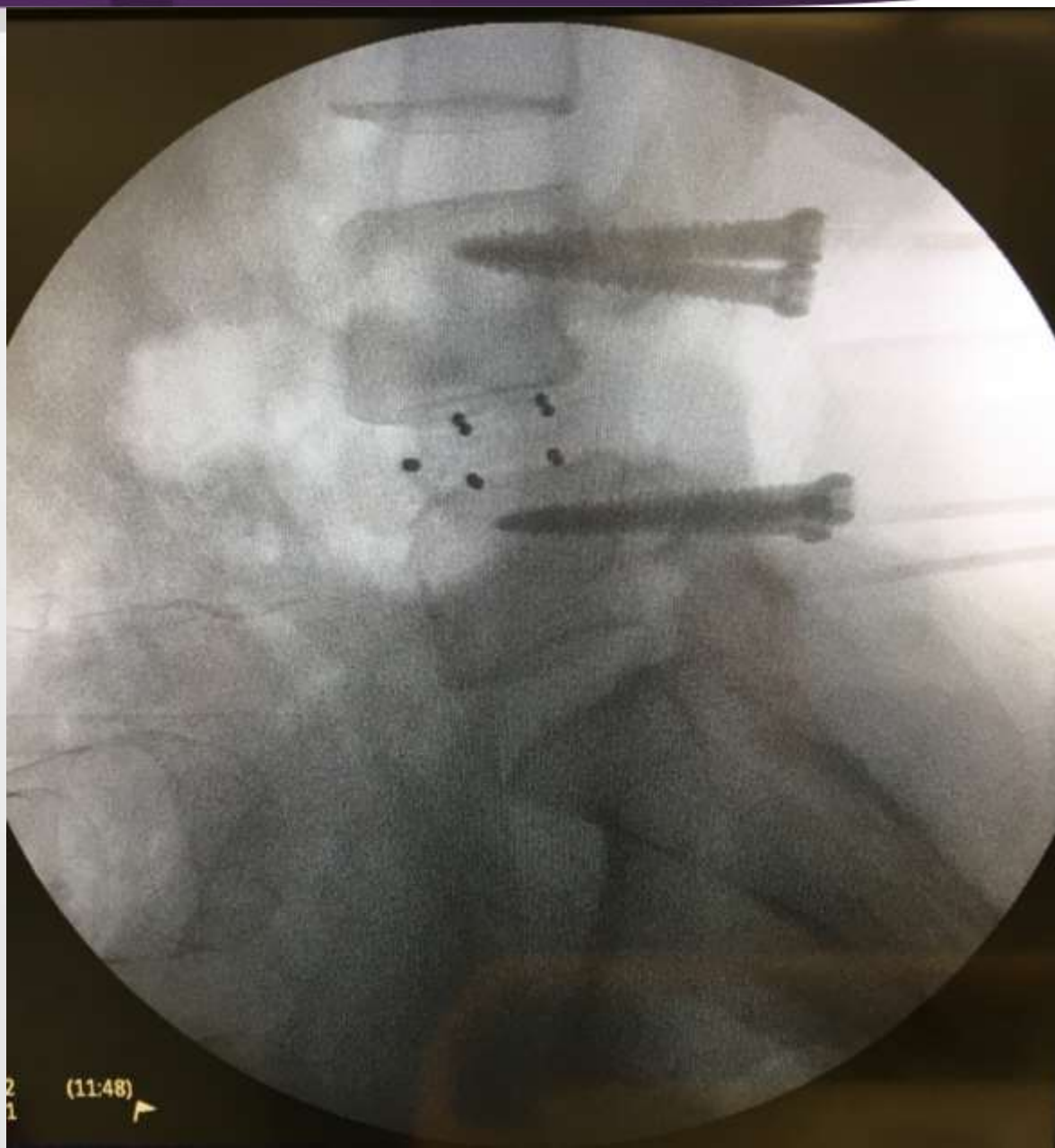


Cortical Screw trajectory



MASPLIF Setup





Implants Used

- CoRoent MASPLIF cages 9 x 9 x 23mm, 8 degree
- MASPLIF Modular shanks 4.5 x 40mm