

Vertebral Implant Placement

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Disclosures

Medtronic - Consultant
Varian - Consultant

Brand names are included in this presentation for participant clarification purposes only. No product promotion should be inferred.

Pain from vertebral body metastases



Vertebral Augmentation

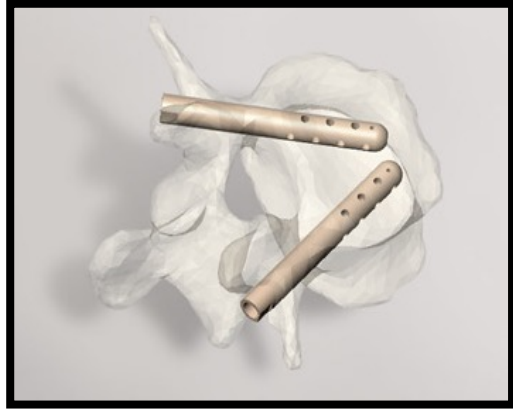
- **Mechanical Pain:**

- Instability
 - Structural Weakness
 - Fracture

- **Resting/ Positional Pain:**

- Tumor Associated Inflammation
- Tumor volume

Renewed interest in vertebral implants

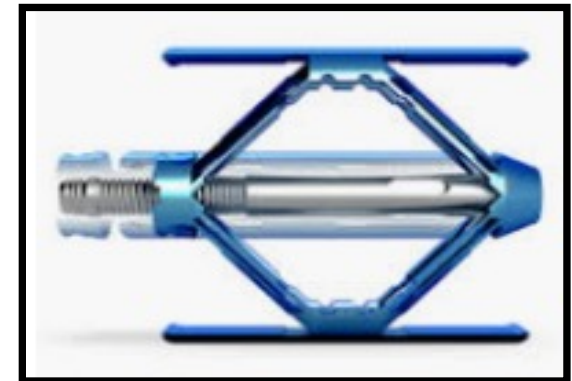
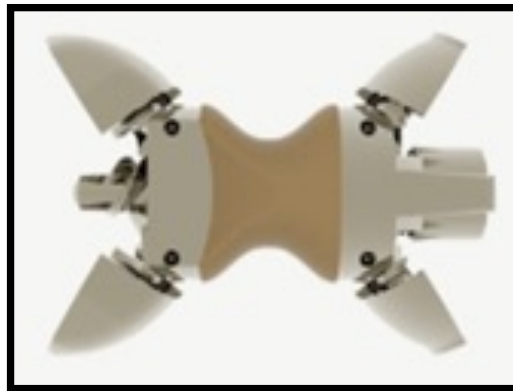


Review | Published: 15 August 2020

Vertebral augmentation with spinal implants: third-generation vertebroplasty

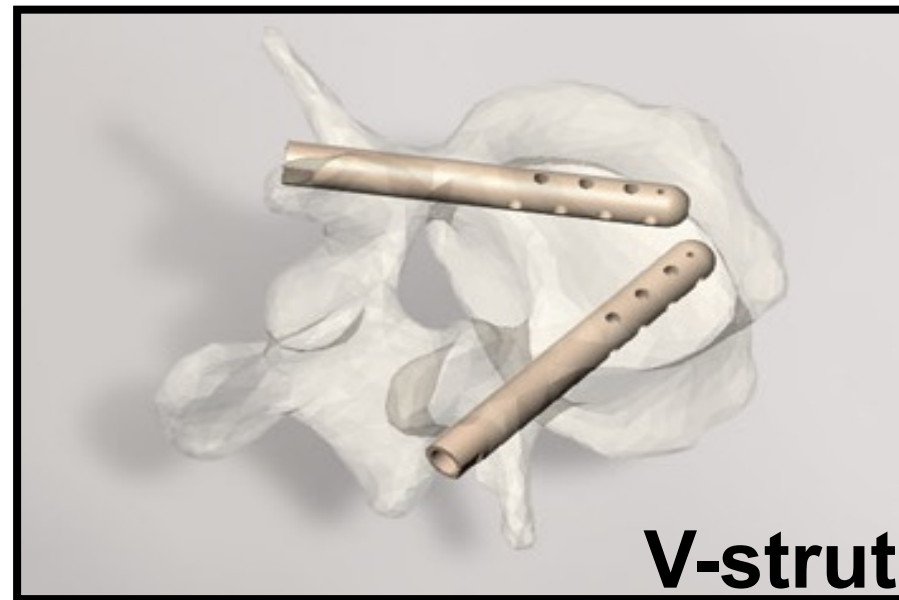
[Danielle Manz](#), [Mark Georgy](#), [Douglas P. Beall](#), [Gamal Baroud](#), [Bassem A. Georgy](#)  & [Mario Muto](#)

[Neuroradiology](#) (2020) | [Cite this article](#)



PEEK – PolyEthyl Ether Ketone

- PEEK Implants
 - Kiva
 - V-strut



PEEK - KIVA

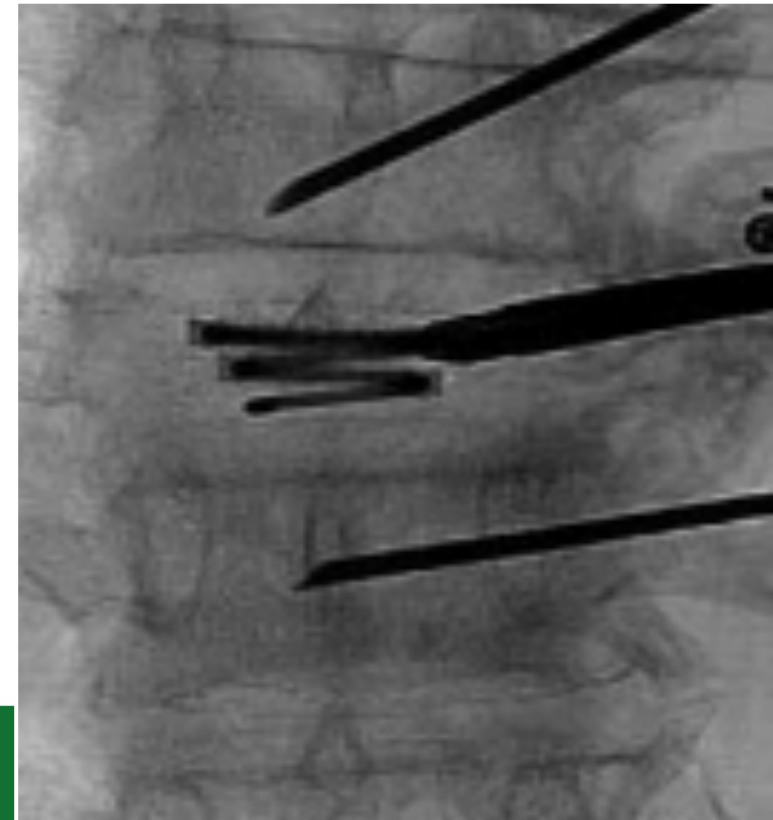
Pain Physician. 2013 Jul-Aug;16(4):E397-404.

Percutaneous vertebral augmentation assisted by PEEK implant in painful osteolytic vertebral metastasis involving the vertebral wall: experience on 40 patients.

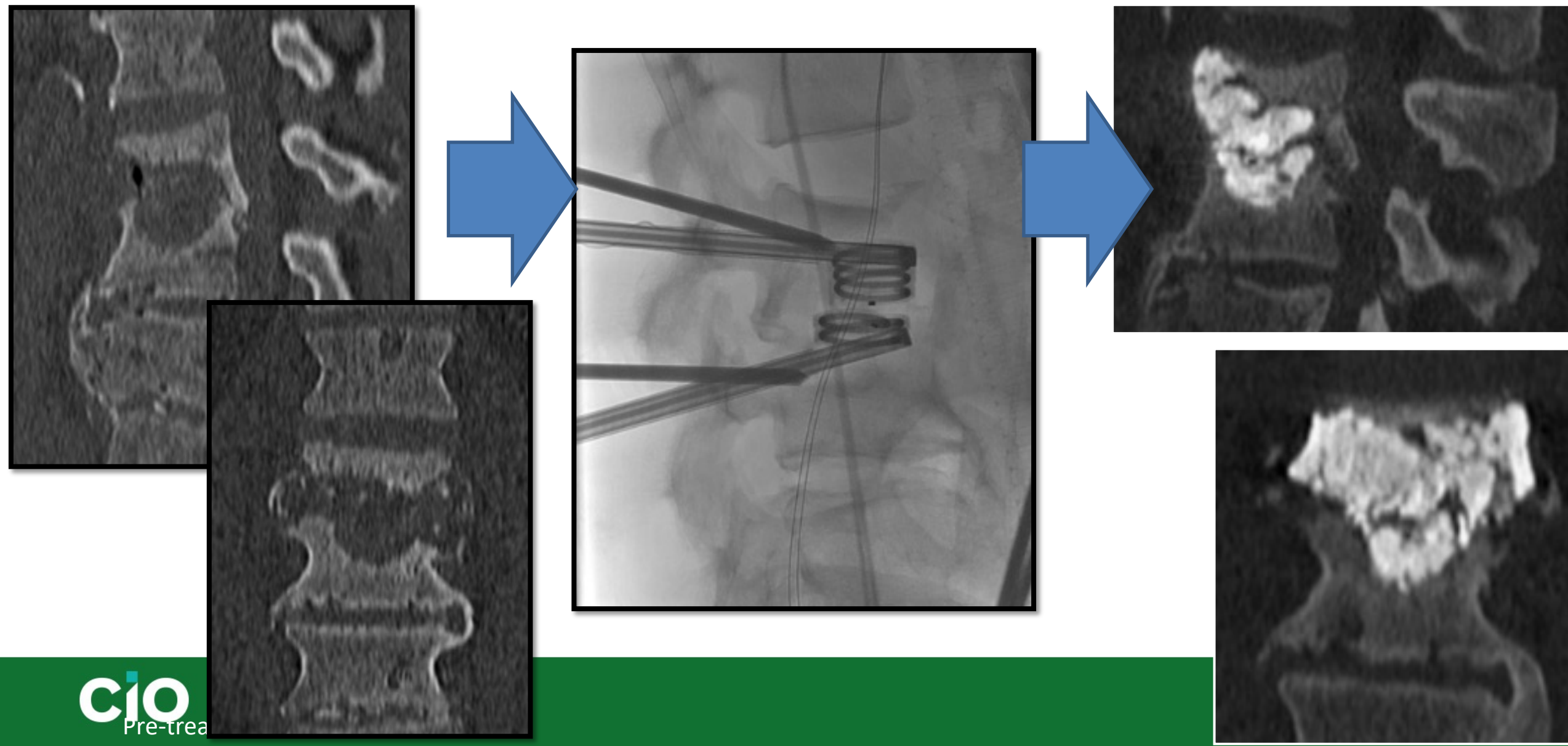
Anselmetti GC¹, Manca A, Tutton S, Chiara G, Kelekis A, Facchini FR, Russo F, Regge D, Montemurro F.

Support provided from PEEK implant

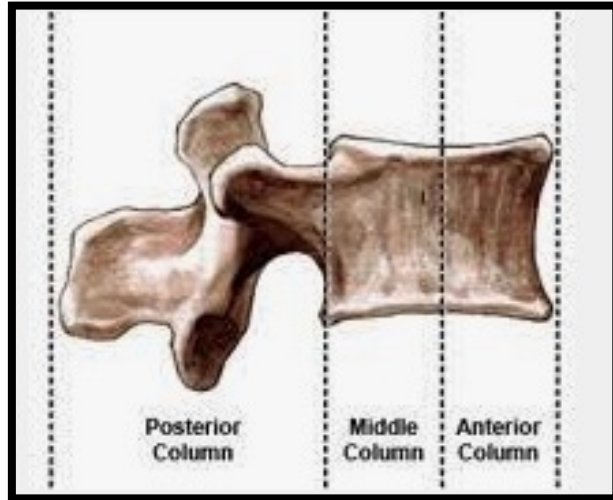
Less cement necessary



Potential to re-establish destroyed bone



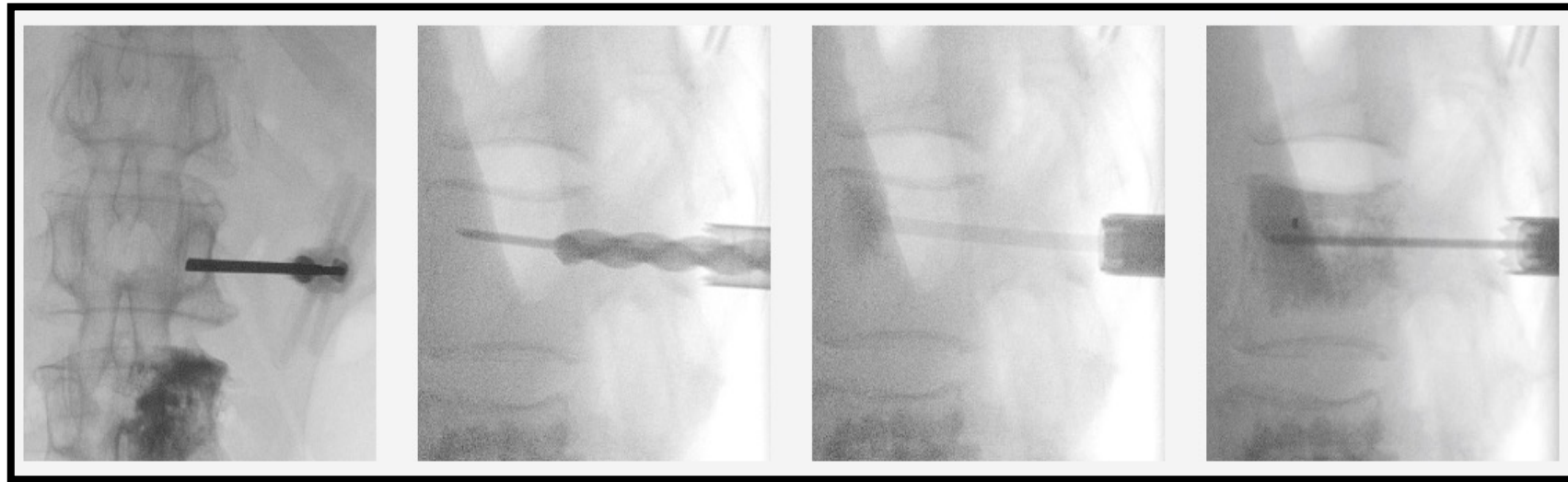
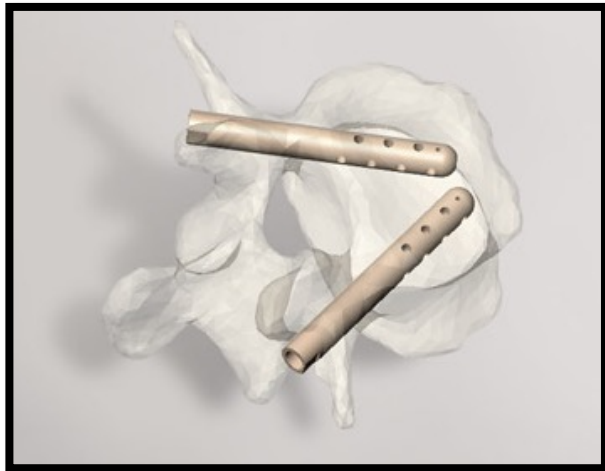
PEEK – V-strut (vertebral body and pedicles)



Clin Biomech (Bristol, Avon). 2018 Jul;56:40-45. doi: 10.1016/j.clinbiomech.2018.05.001. Epub 2018 May 2.

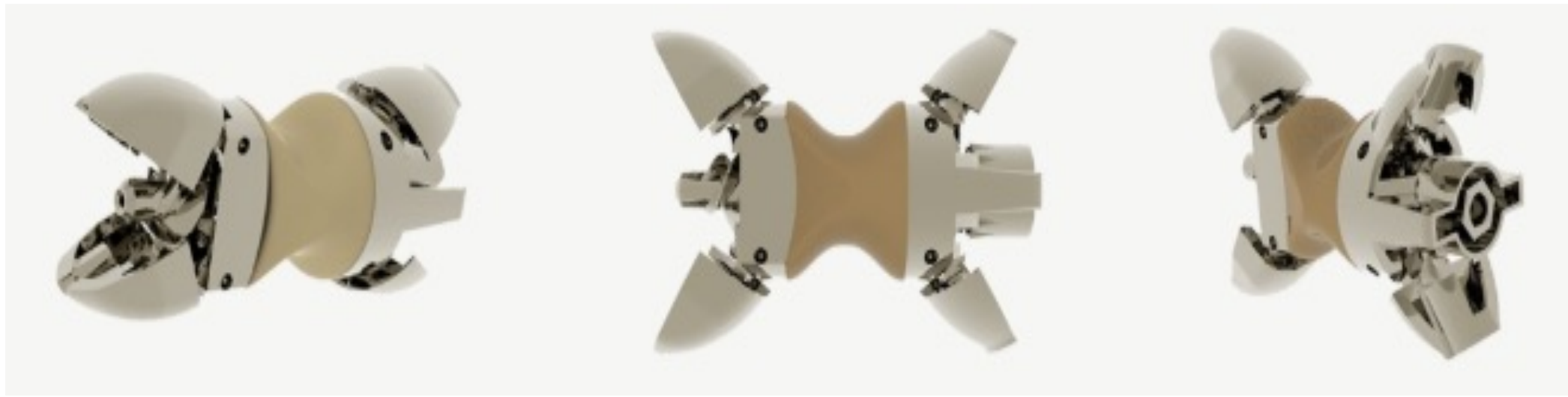
Comparative biomechanical study of a new transpedicular vertebral device and vertebroplasty for the treatment or prevention of vertebral compression fractures.

Aebi M¹, Maas C², Di Pauli von Treuheim T³, Friedrich H³, Wilke HJ³.

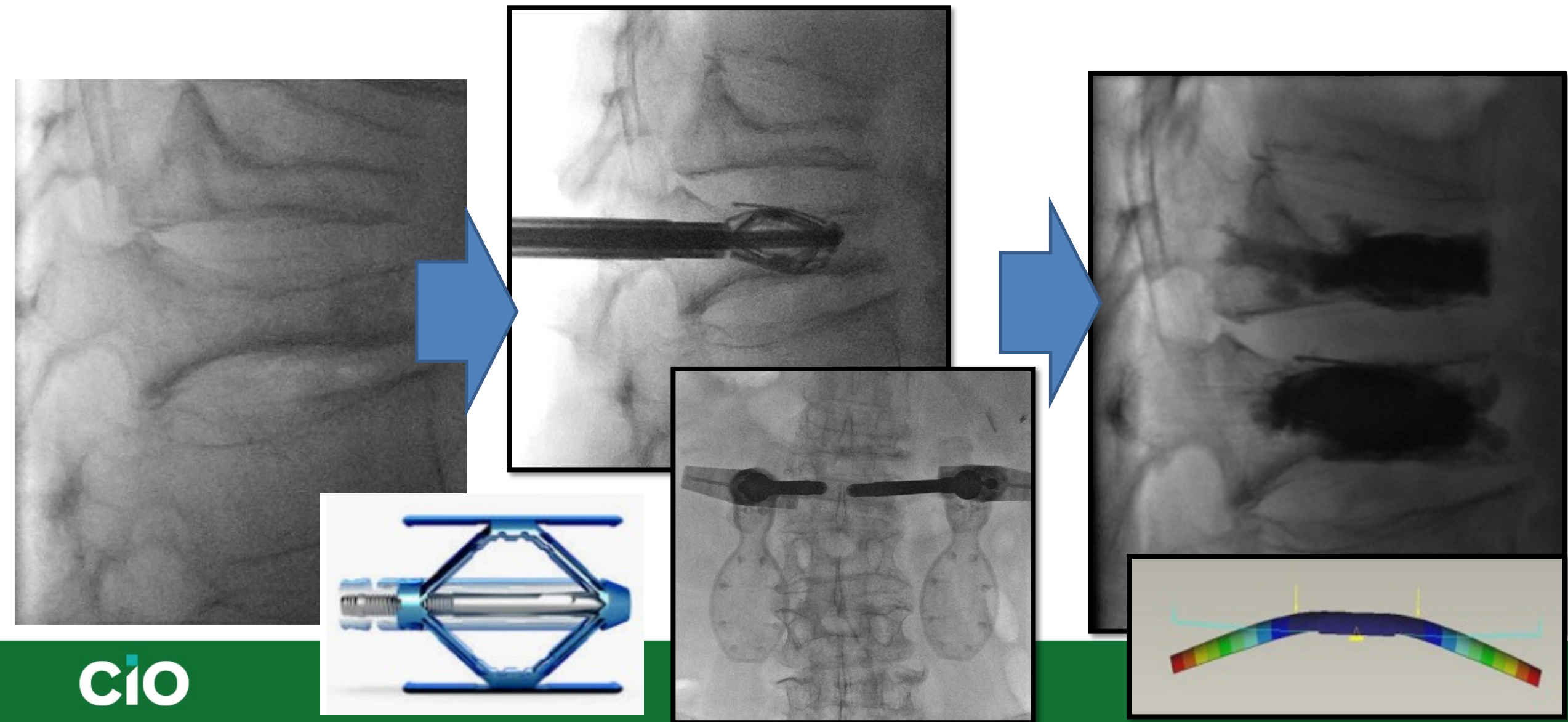


Metallic expansion devices

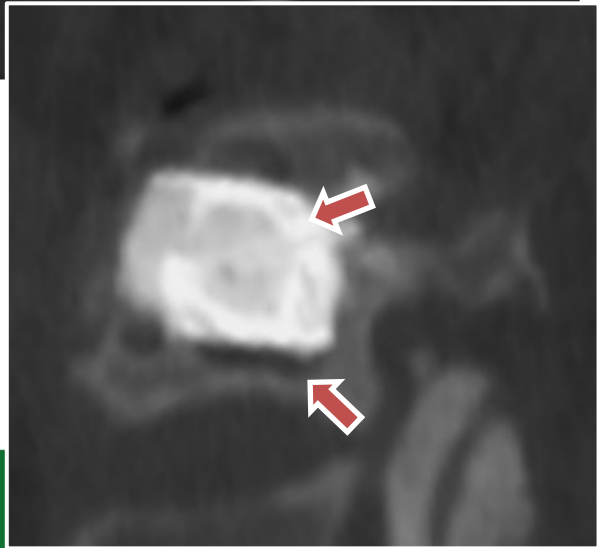
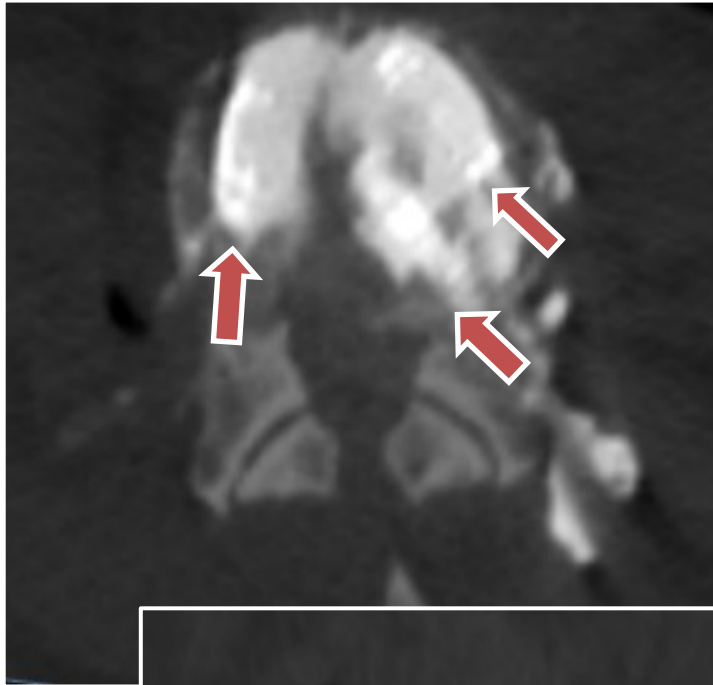
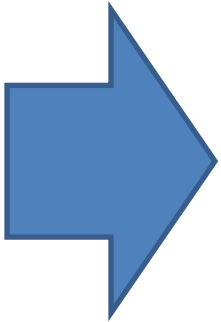
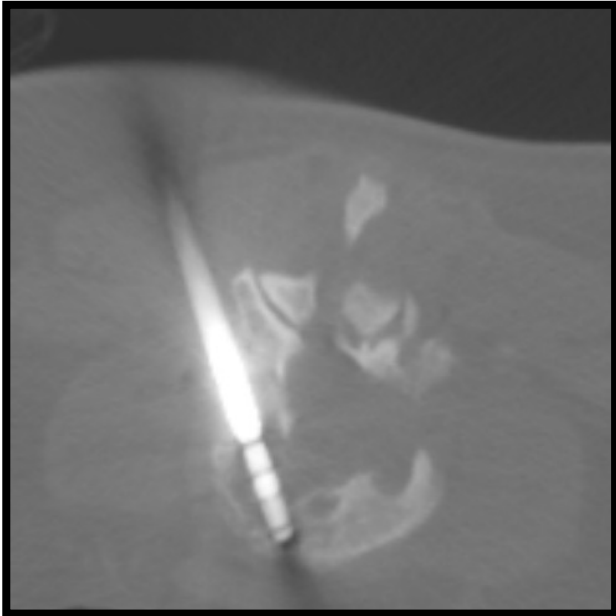
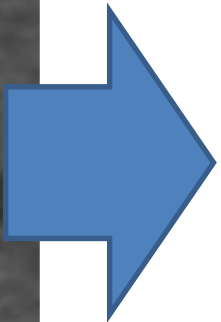
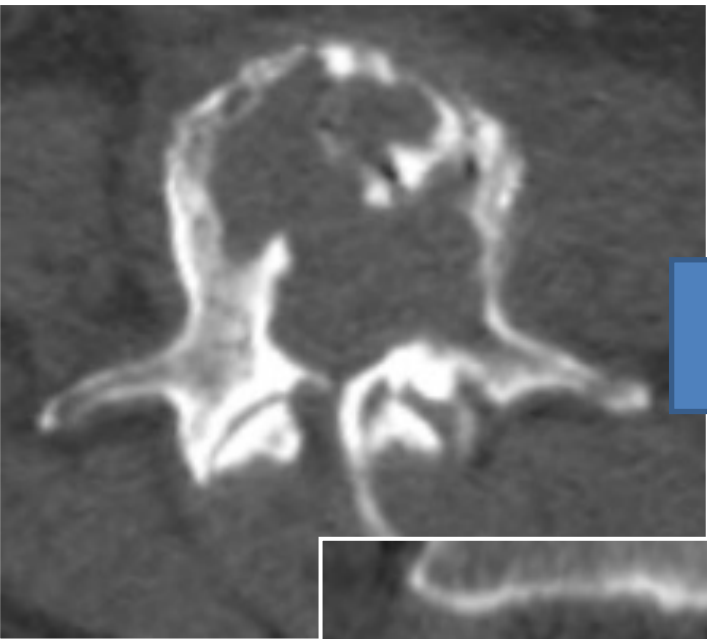
- Spine Jack
- Interspinous spacers



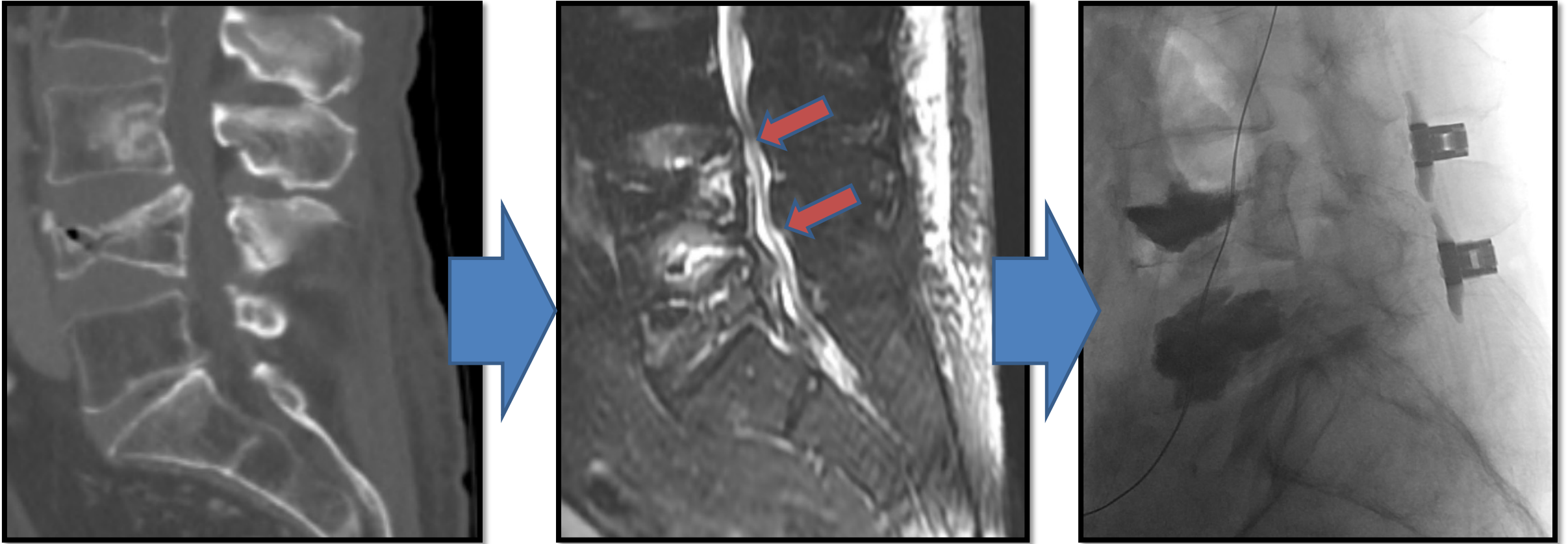
Spine Jack



Spine Jack deployment to minimize cement leakage

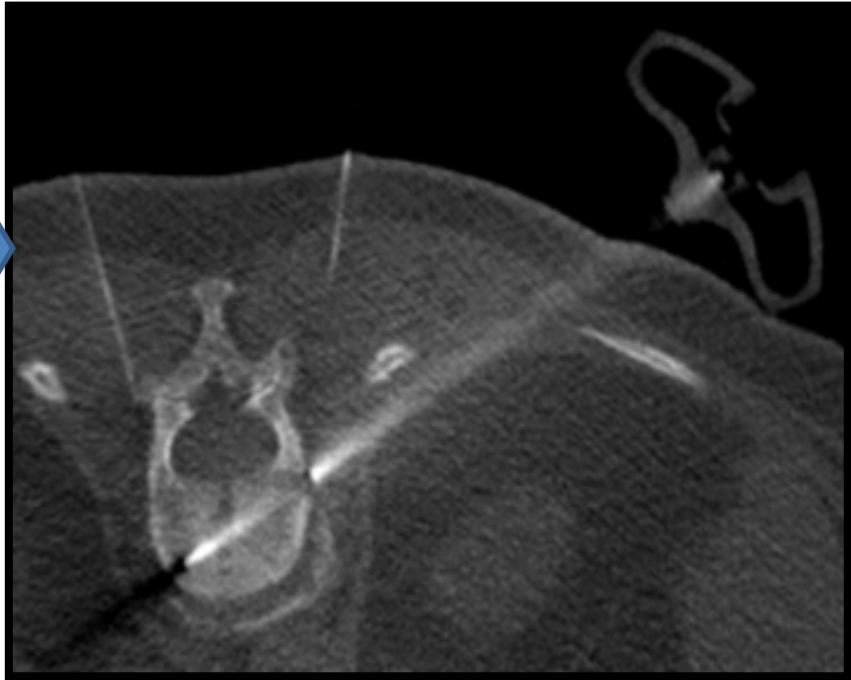
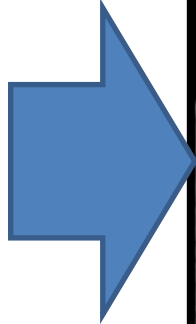


Interspinous spacers

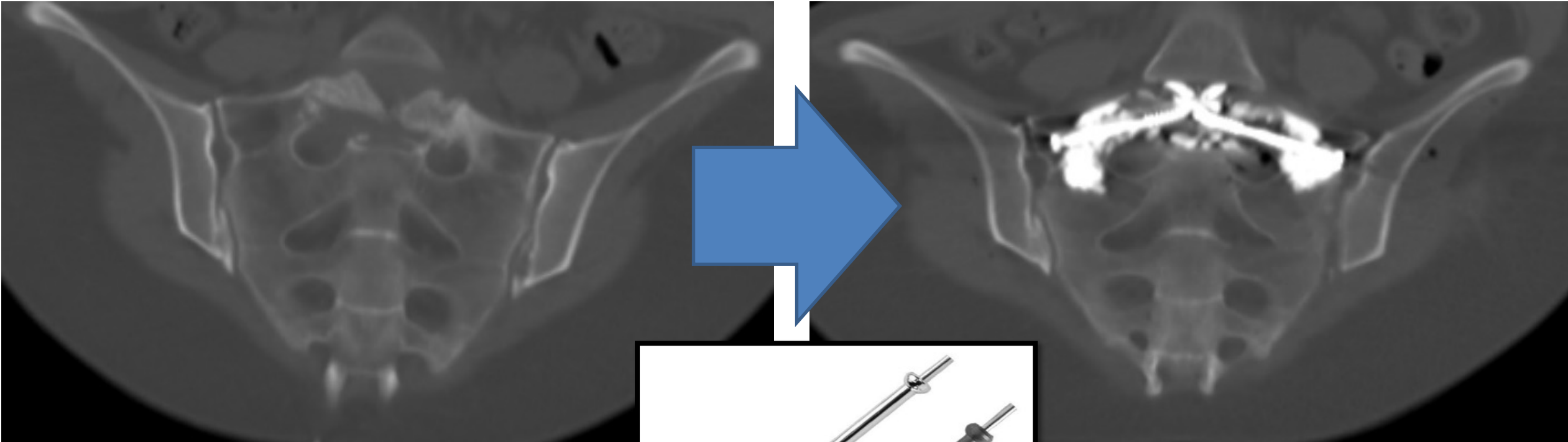


Metastatic prostate cancer with multiple thoracolumbar osteoporotic fractures like from a combination of cancer related (chemotherapy) and age factors

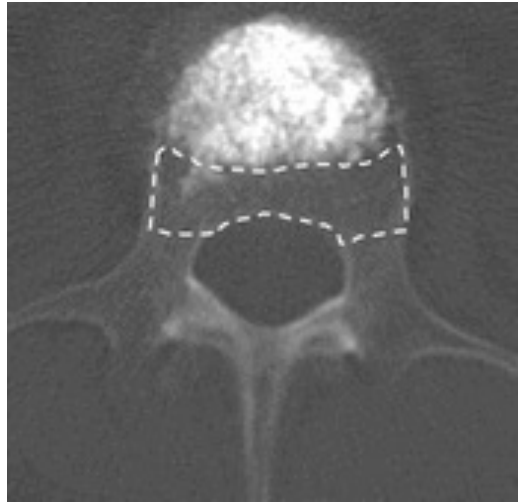
Cannulated screws



Cannulated screws



Stent-Screw-Assisted Internal Fixation (SAIF)



> [J Neurointerv Surg. 2021 Jan;13\(1\):63-68. doi: 10.1136/neurintsurg-2020-016597. Epub 2020 Sep 16.](#)


The 'armed concrete' approach: stent-screw-assisted internal fixation (SAIF) reconstructs and internally fixates the most severe osteoporotic vertebral fractures

Daniela Distefano ¹, Pietro Scarone ², Maurizio Isalberti ³, Luigi La Barbera ^{4 5 6}, Tomaso Villa ⁵, Giuseppe Bonaldi ⁷, Joshua A Hirsch ⁸, Alessandro Cianfoni ^{3 9}



- **80 severe vertebral compression fractures**
- **Treat both anterior**
- **Interspinous spacers**

Thank You



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**MD Anderson
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