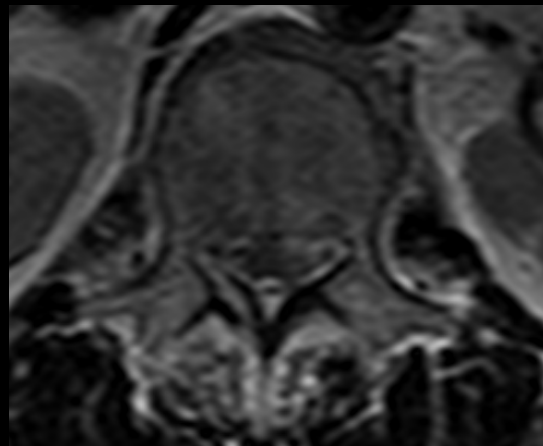
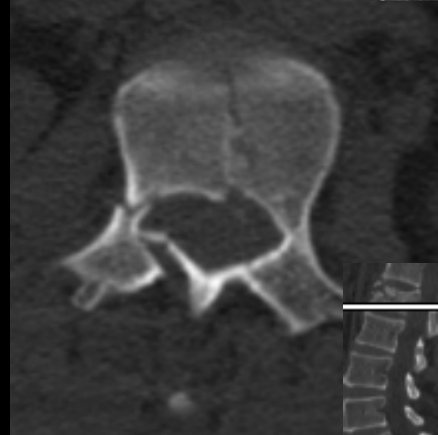
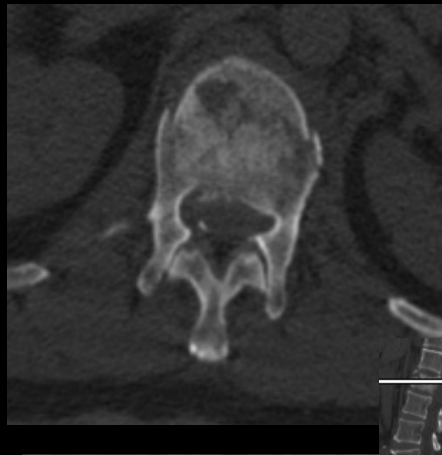


# Torakolomber Patlama Kırığı

(korpektomi yaparım)

Dr.Hakan BOZKUŞ

# Torakolomber Bileşke

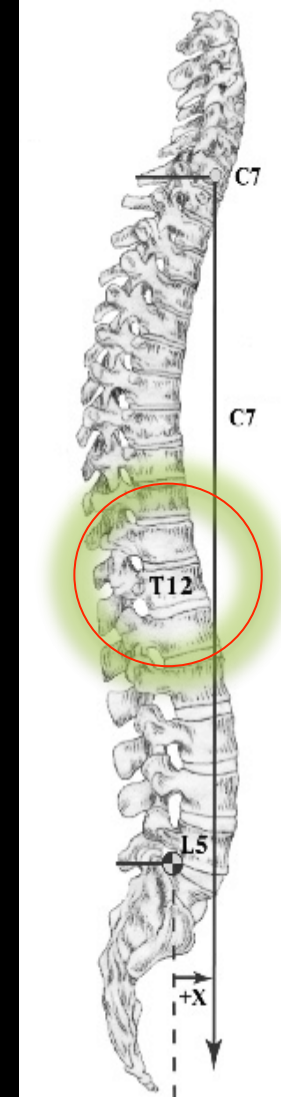


# Torakolomber Bileşke Stabilizasyonu

- Göğüs kafesi (zayıf)
- Kostavertebral eklem (zayıf)
- Anterior/Posterior longitudinal ligaman (kuvvetli)
- Anulus (kuvvetli)
- Kapsuler ligaman (zayıf)
- İnterspinöz ligaman (zayıf)
- Supraspinöz ligaman (zayıf)

Kifoz

Lordoz



Rijit

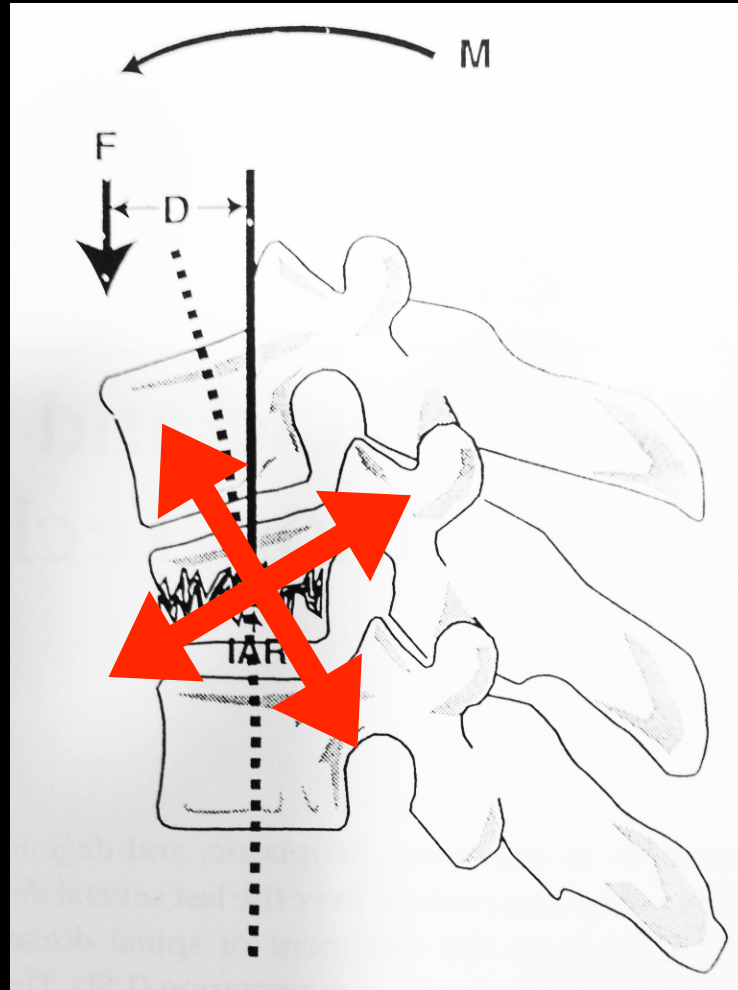
Hareketli

# Hareket Aralığı (ROM)

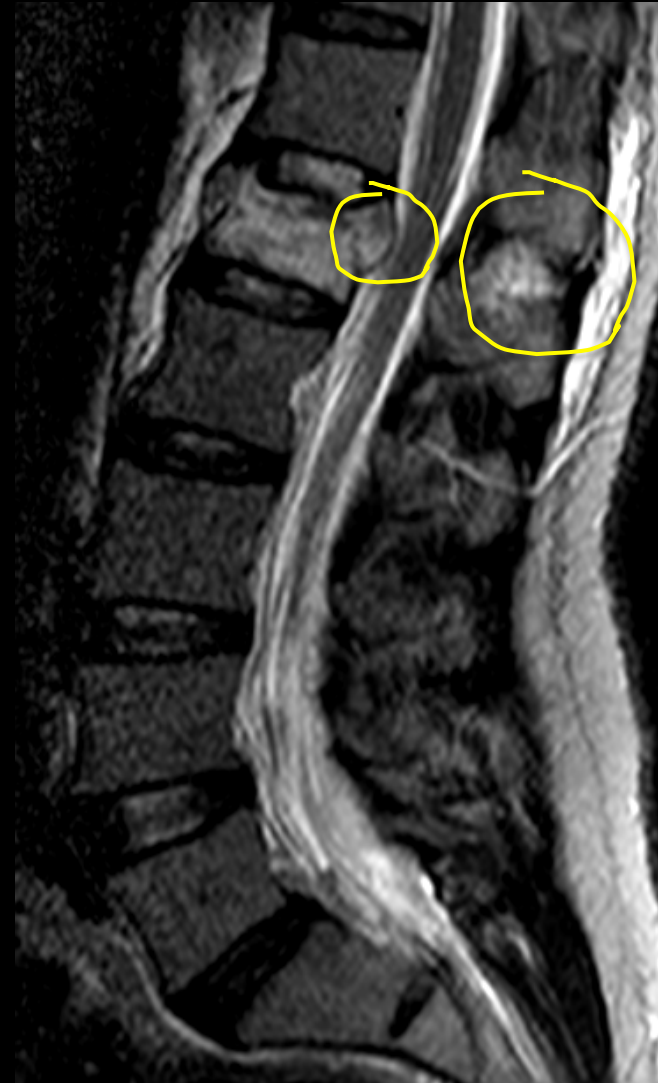
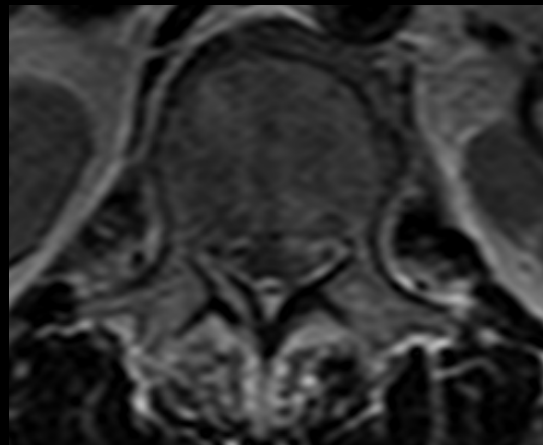
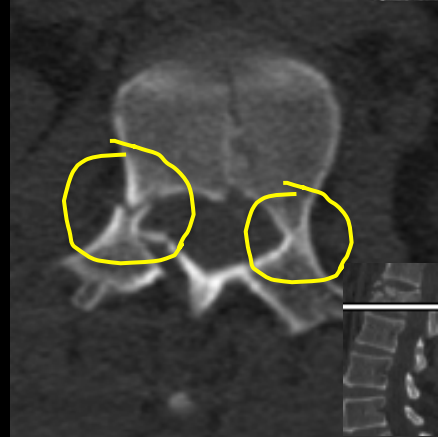
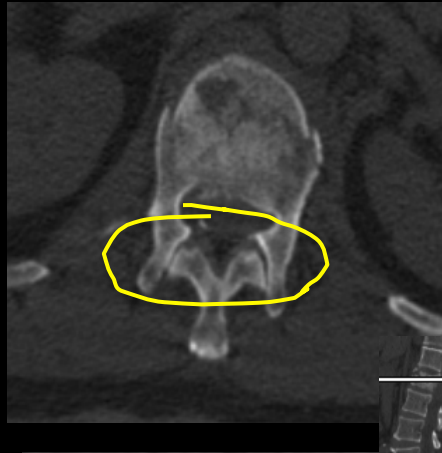
- Faset eklemleri sagittal plan oryantasyonunda
  - Fleksiyon-ekstansiyon (fazla)
  - Aksiyal rotasyon (kısıtlı)

	T11-12	T12-L1	
Fleks/Eks	10	12	(22)
Lat. Bend.	7	9	(16)
Aks. Rot.	4	4	(8)

# Rotasyonun Anlık Ekseni (RAE)



# Torakolomber Bileşke



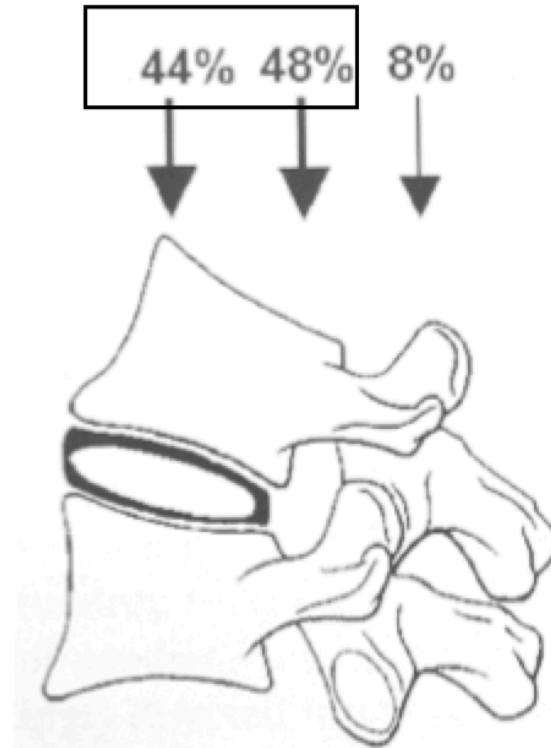
# FSU Yük Dağılımı

Journal of Biomechanics 38 (2005) 1972–1983

Perspective

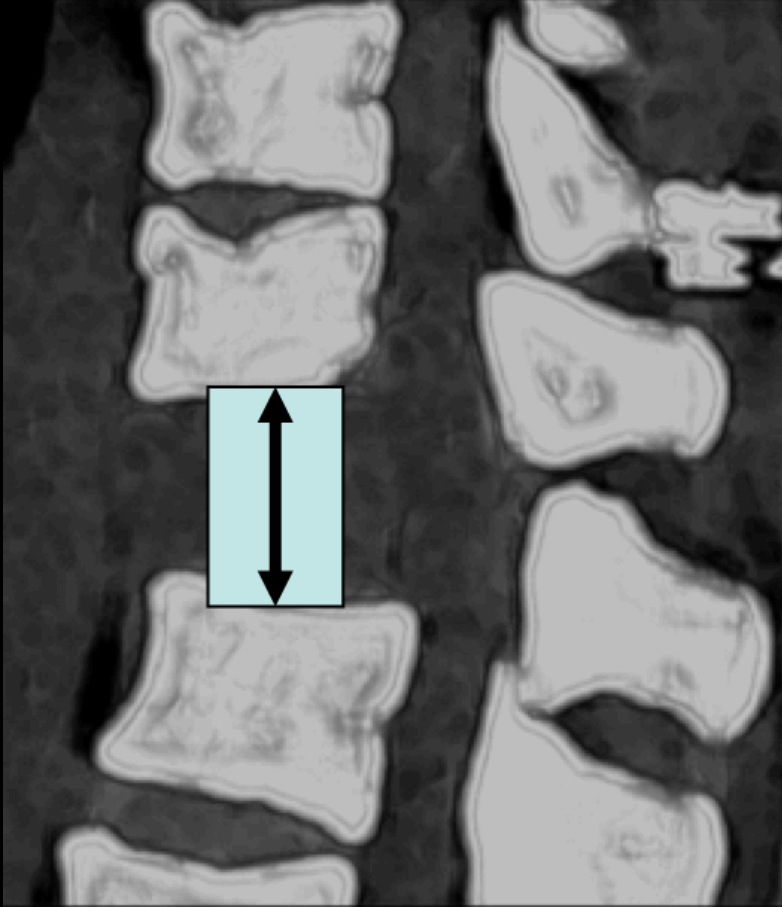
Spine biomechanics ☆

Michael A. Adams\*, Patricia Dolan



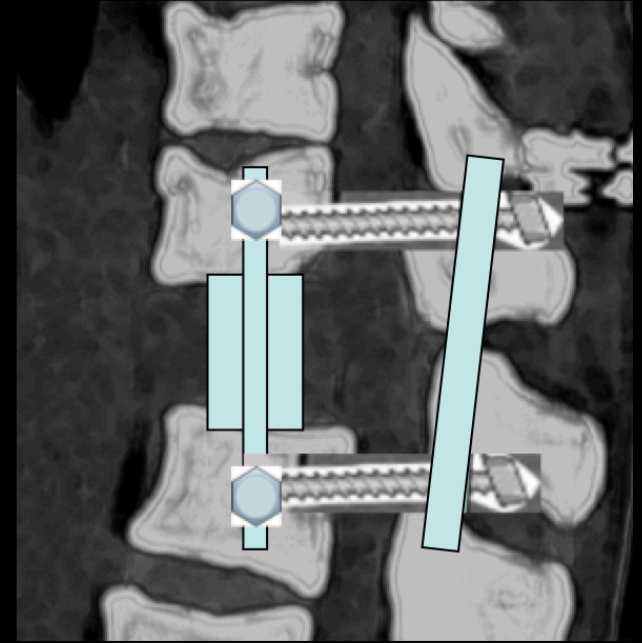
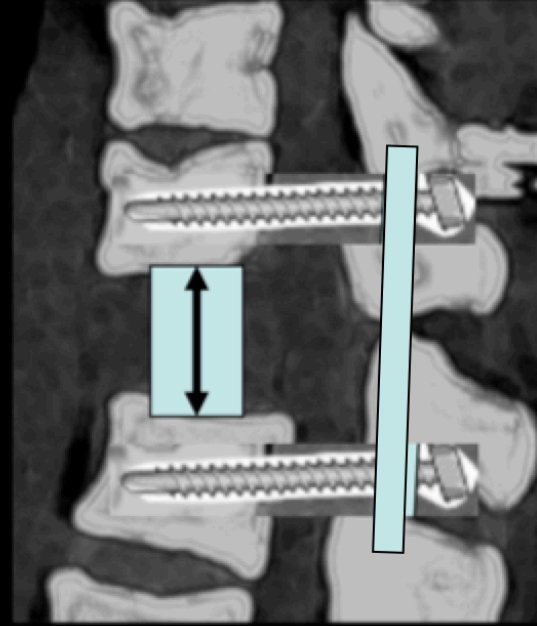
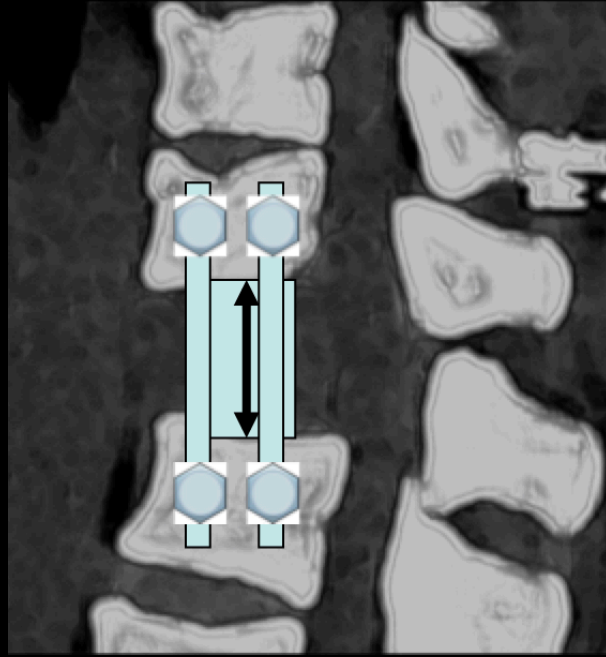
# Neden anterior destek ?

## Greft/ kafes



- RAE'nin tamiri
- Segmental yük dağılımının sağlanması
- Distraksiyon ile segmental kifozun önlenmesi



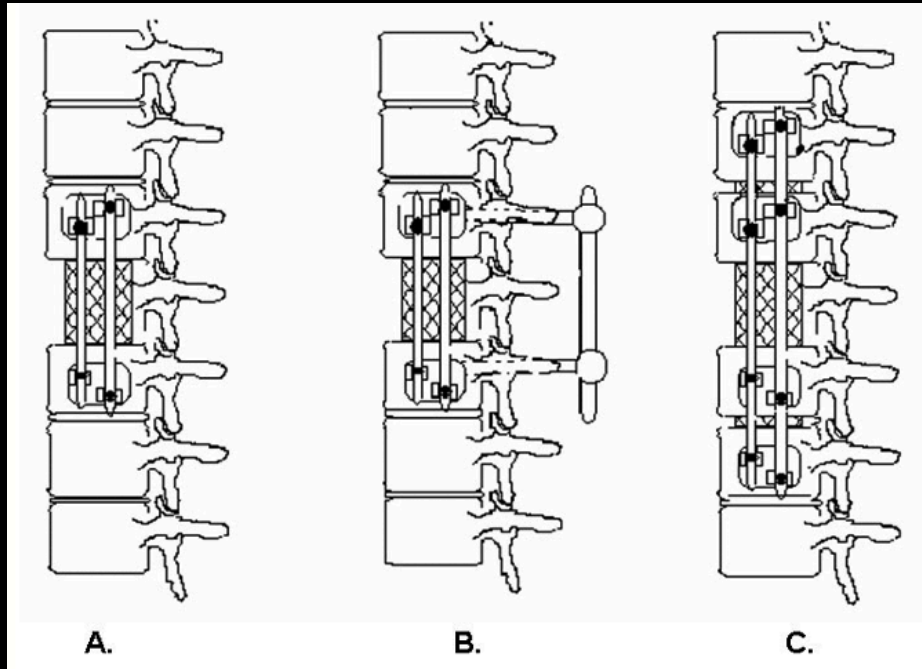


- Hareket aralığının max. korunması
- Komşu segment hastalığı riskinin azaltılması
- Kanal dekompresyonunun daha etkin sağlanması

## Biomechanical comparison of three fixation techniques for unstable thoracolumbar burst fractures

Laboratory investigation

FRANK L. ACOSTA JR., M.D.,<sup>1,2</sup> JENNI M. BUCKLEY, PH.D.,<sup>2</sup> ZHENG XU, B.S.,<sup>2</sup>  
JEFFREY C. LOTZ, PH.D.,<sup>2</sup> AND CHRISTOPHER P. AMES, M.D.<sup>1</sup>



Hepsi yeterli stabilizasyon sağlıyor



ELSEVIER



CrossMark

The Spine Journal 15 (2015) 2247–2253

THE  
SPINE  
JOURNAL

Basic Science

## Is lateral stabilization enough in thoracolumbar burst fracture reconstruction? A biomechanical investigation

Ripul R. Panchal, DO<sup>a</sup>, Erika A. Matheis, MS<sup>b,\*</sup>, Manasa Gudipally, MS<sup>b</sup>, Mir M. Hussain, BS<sup>b</sup>,  
Kee D. Kim, MD<sup>a</sup>, Brandon S. Bucklen, PhD<sup>b</sup>

	$F_{i21 \times 23}$	$F_{21 \times 23} + LP$	$F_{22 \times 40-50} + PI + LP$	$F_{i22 \times 40-50} + PI$
Lateral				

Kombine fix. > anterior kafes (özellikle FE/ LB)



ELSEVIER

Journal of Orthopaedic Science

Volume 14, Issue 4, July 2009, Pages 443-449



Original article

## Biomechanical comparison of instrumentation techniques in treatment of thoracolumbar burst fractures: a finite element analysis

Won Man Park <sup>1</sup>, Ye-Soo Park <sup>2</sup>, Kyungsoo Kim <sup>3</sup>, Yoon Hyuk Kim <sup>1</sup>

Anterior iki rod ile stabilizasyon yeterli

Anterior tek rod + posterior stabilizasyon daha güçlü stabilizasyon sağlıyor

# Biomechanical Evaluation of Short-Segment Posterior Instrumentation With and Without Crosslinks in a Human Cadaveric Unstable Thoracolumbar Burst Fracture Model

Wahba, George M. MD\*; Bhatia, Nitin MD\*; Bui, Christopher N. H. BS+; Lee, Kenneth H. BS+; Lee, Thay Q. PhD\*†

Spine:

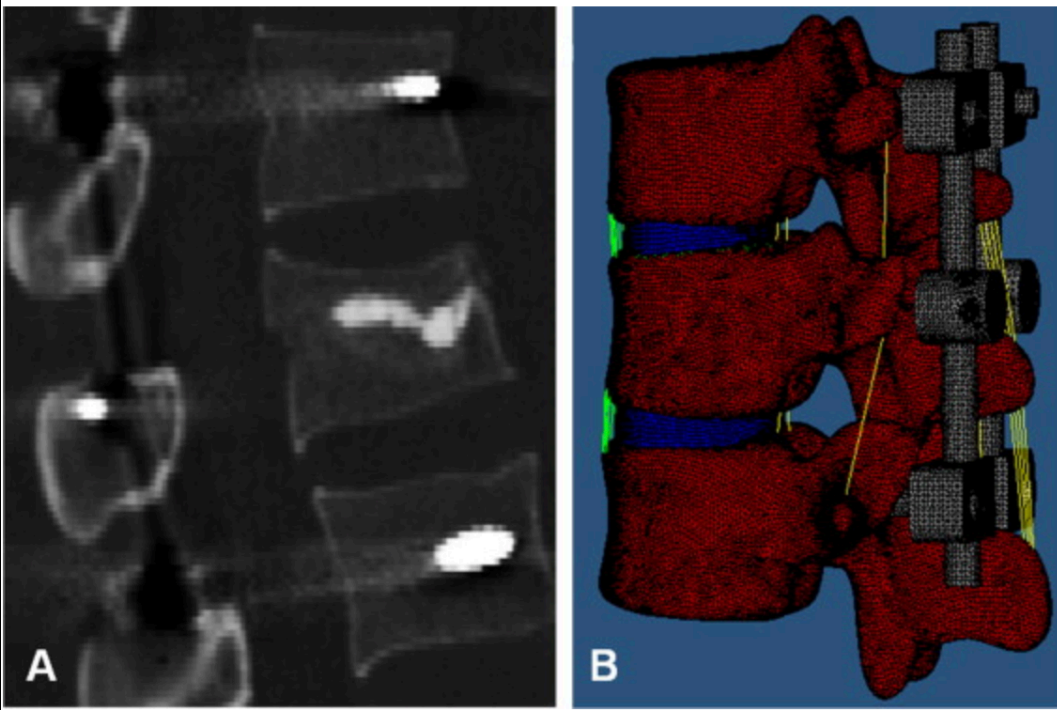
1 February 2010 - Volume 35 - Issue 3 - pp 278-285

- Kısa segment enstrumantasyon ara bağlantı konulsa bile hiçbir hareket yönünde yeterli stabilizasyon sağlamıyor

Original article

## Biomechanical effects of vertebroplasty on thoracolumbar burst fracture with transpedicular fixation: A finite element model analysis

G. Xu <sup>a</sup>, X. Fu <sup>a</sup>, C. Du <sup>c</sup>, J. Ma <sup>a</sup>, Z. Li <sup>b, d</sup>, X. Ma <sup>a</sup> 



Kırık omura  
vertebraplasti, komşu  
son-plaklarda ve  
posterior  
stabilizasyondaki gerilimi  
%40-50 azaltıyor

**Vertebraplasti  
komplasyonu !**

# Bileşkede Yalnız Posterior Yaklaşım

- Uzun dönem riskleri
  - İmplant yetersizliği
  - Kifotik deformite riski
  - Sagittal indeksin bozulma olasılığı
  - Yalancı füzyon riski
  - Komşu segment hastalığı riski

Hitchon PW ve ark., J Neurosurg Spine 2006  
Sasso RC ve ark., J spinal Disord Tech 2006

REVIEW

## **Anterior versus posterior approach for treatment of thoracolumbar burst fractures: a meta-analysis**

Gui Jun Xu · Zhi Jun Li · Jian Xiong Ma ·  
Tao Zhang · Xin Fu · Xin Long Ma

- Nörolojik düzelme
- İşe dönüş
- Komplikasyon
- Cobb açısı karşılaştırması aynı
- Anterior yaklaşımda; cerrahi süre, kan kaybı daha fazla ?



Konuřmanın Slaytları

[www.hakanbozkus.com.tr](http://www.hakanbozkus.com.tr)

Teřekkür Ederim