2026
WORK RELATED
Injuries Workshop

“Back” to Square One: Lumbar Spine Session

Chairperson: Eduard Vaynberg, MD

Tuesday, March 24th, 2026

10:00 – 11:00 am

2026
WORK RELATED
Injuries Workshop

Is it the Back or the Hip?

Chadi Tannoury, MD, FAOA, FAAOS

Associate Professor, Orthopedic Surgery

Medical Director, Orthopedic Ambulatory Clinic

Director, Spine Research

Boston University – Boston Medical Center

Disclosures

Consultant: DePuy Synthes

Royalties:

- DePuy Synthes
- Wolters-Kluwer Publisher

Stocks: 4Web Medical

Disclaimer

Expectations:

Not a Comprehensive Review

3 Main Conditions

3 Highlights per condition

Common Scenario

A heavy laborer “David”

Was lifting a heavy stone

Injured himself

On evaluation…

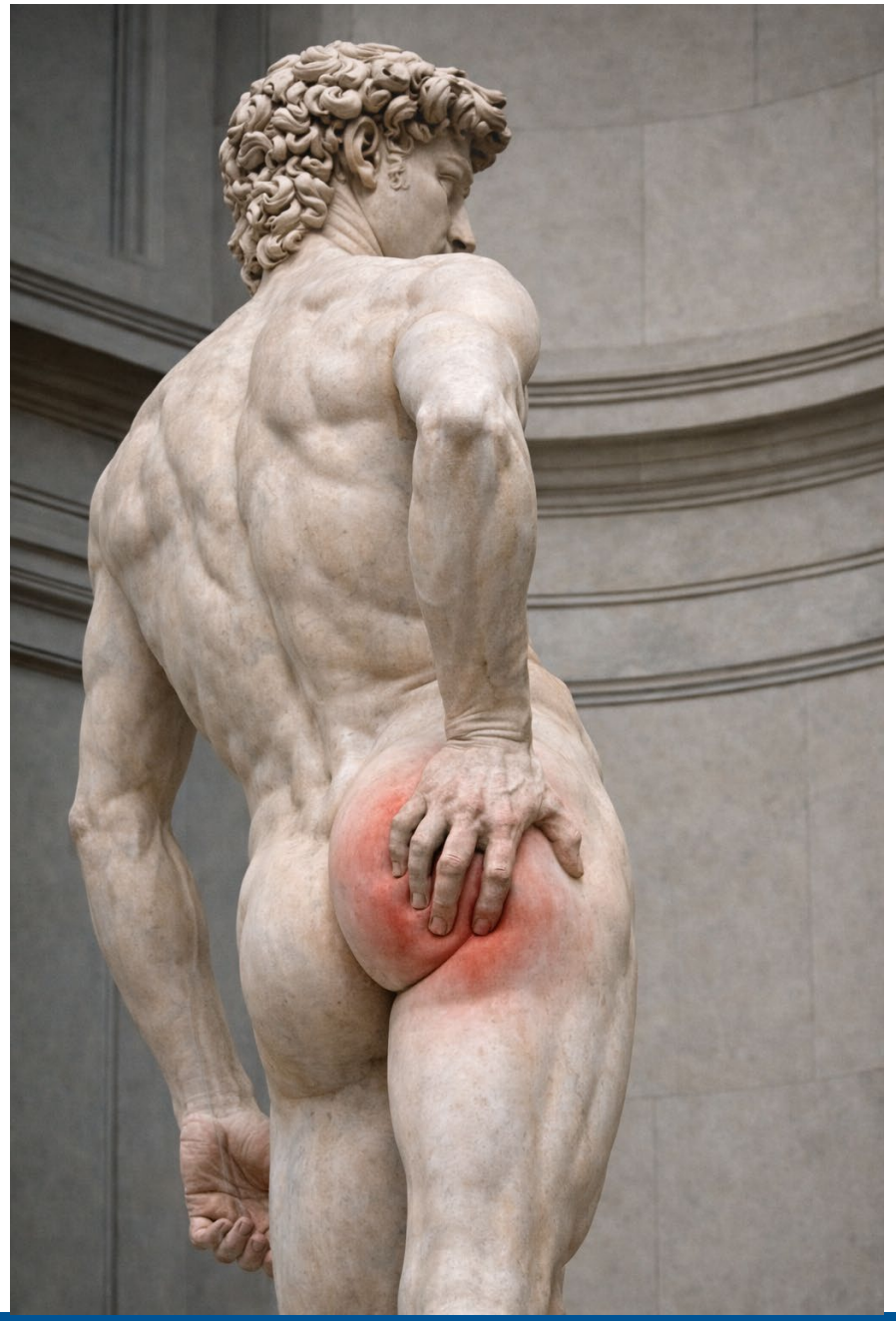
What can cause David’s pain?

1-

2-

3-

GOLIATH

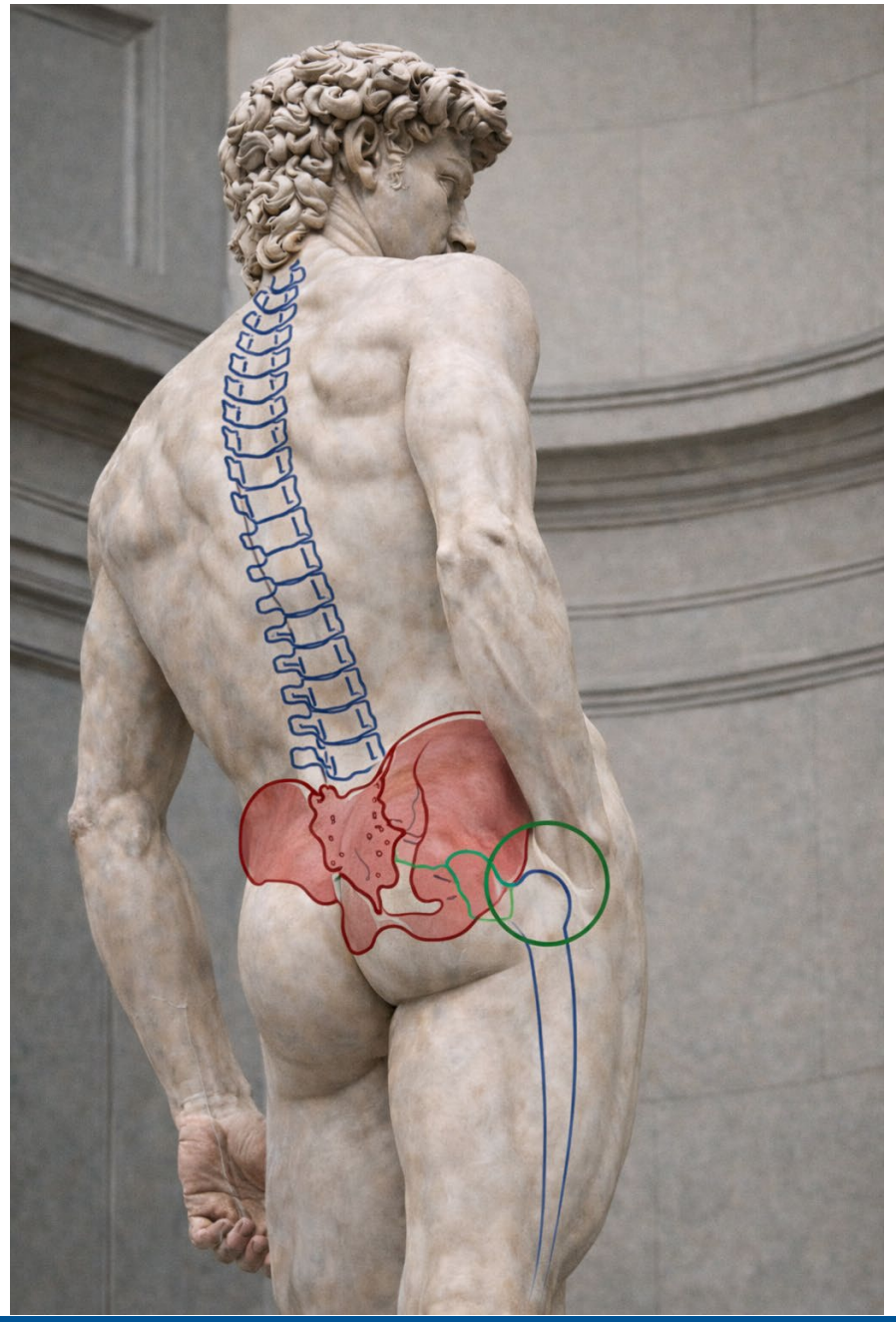


What can cause David’s pain?

1- Spine

2- Pelvis

3- Hip



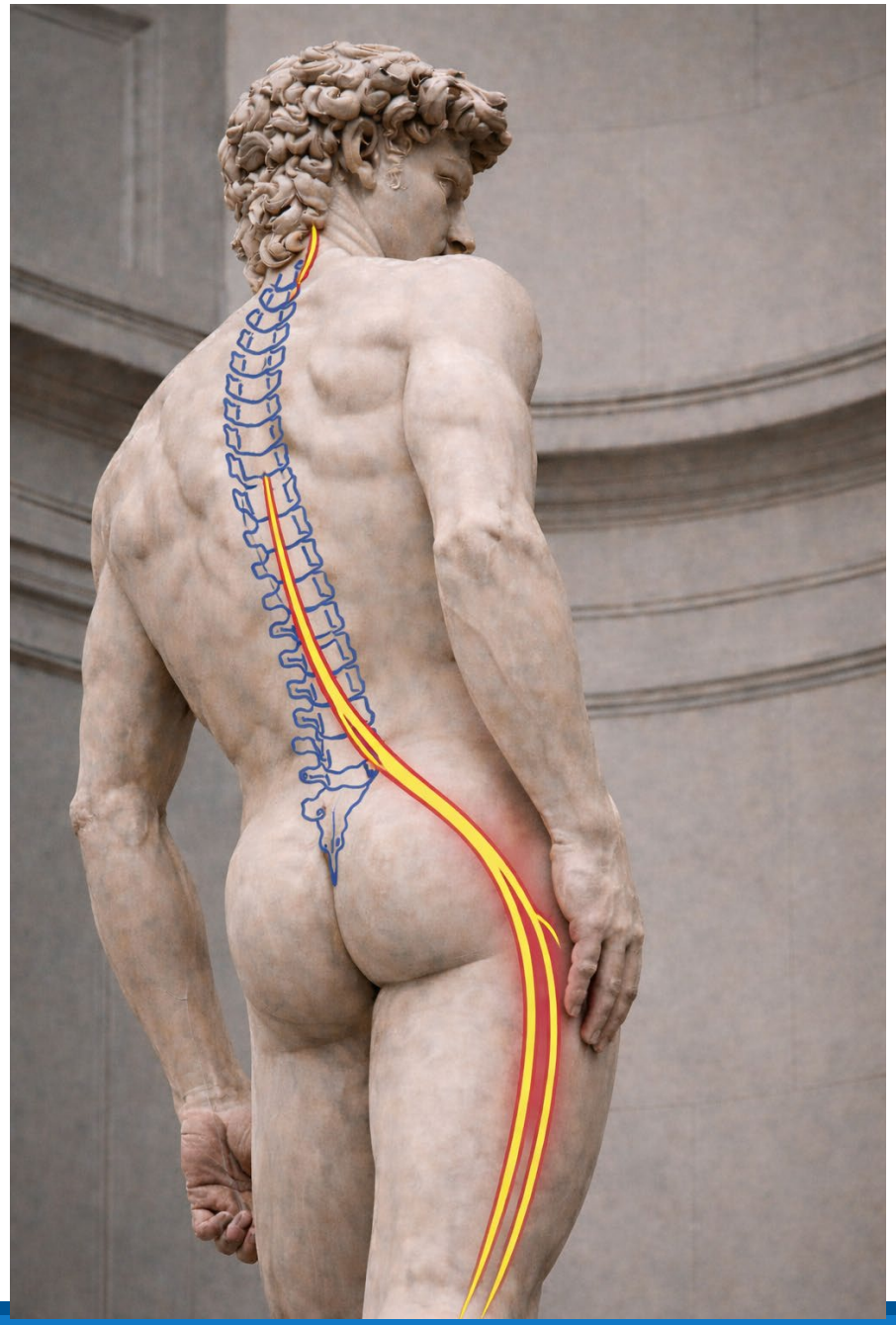
SPINE

What can cause David’s pain?

1- Spine

2-

3-



What can cause David’s pain?

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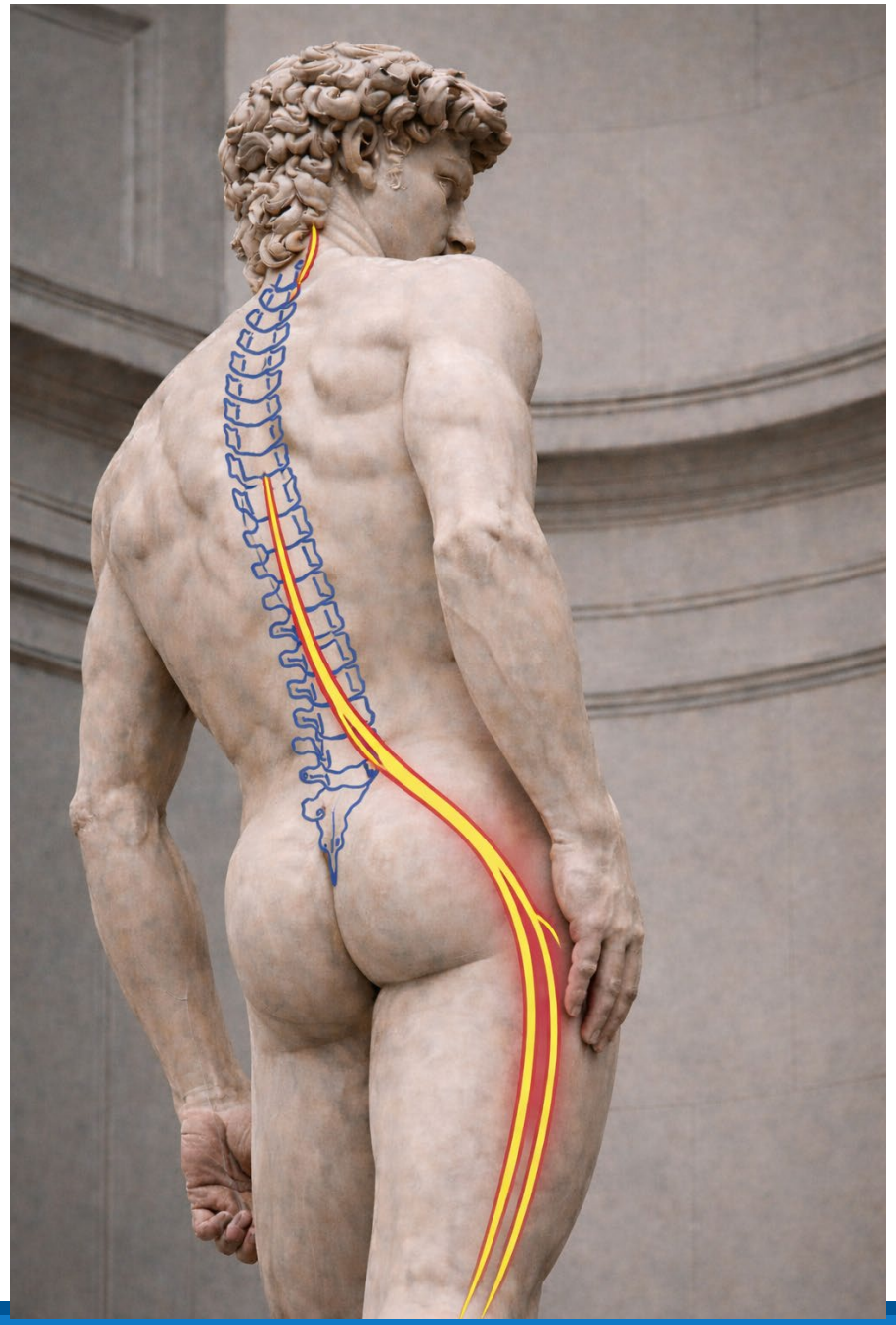
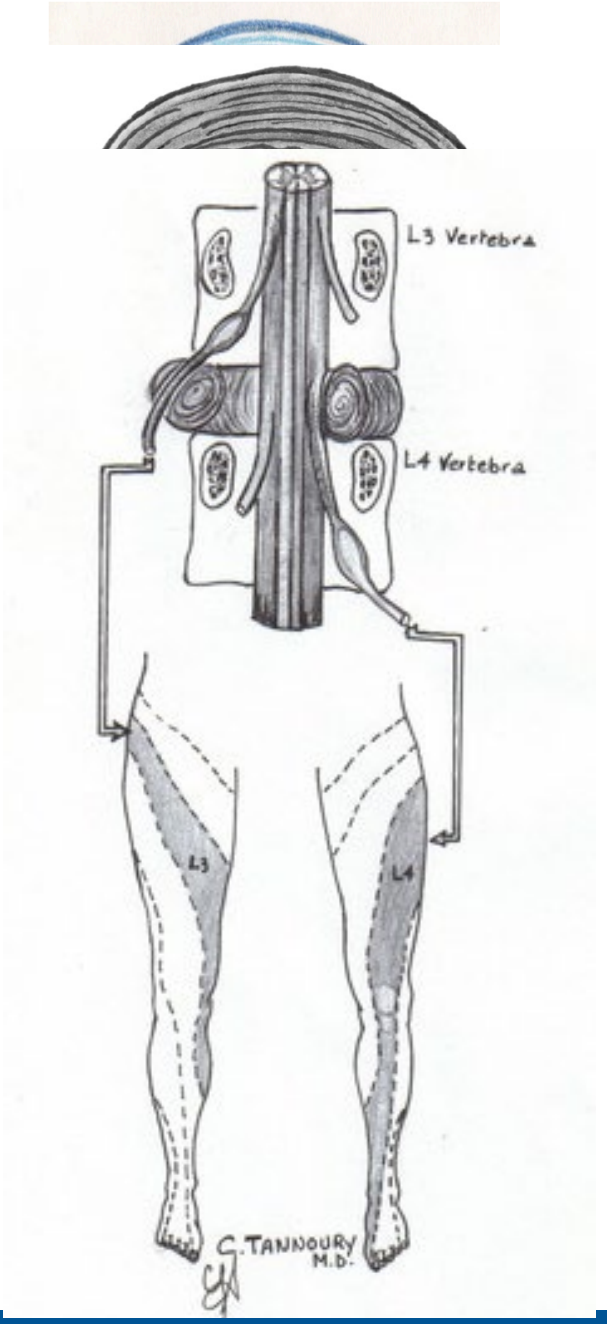
2-

3-





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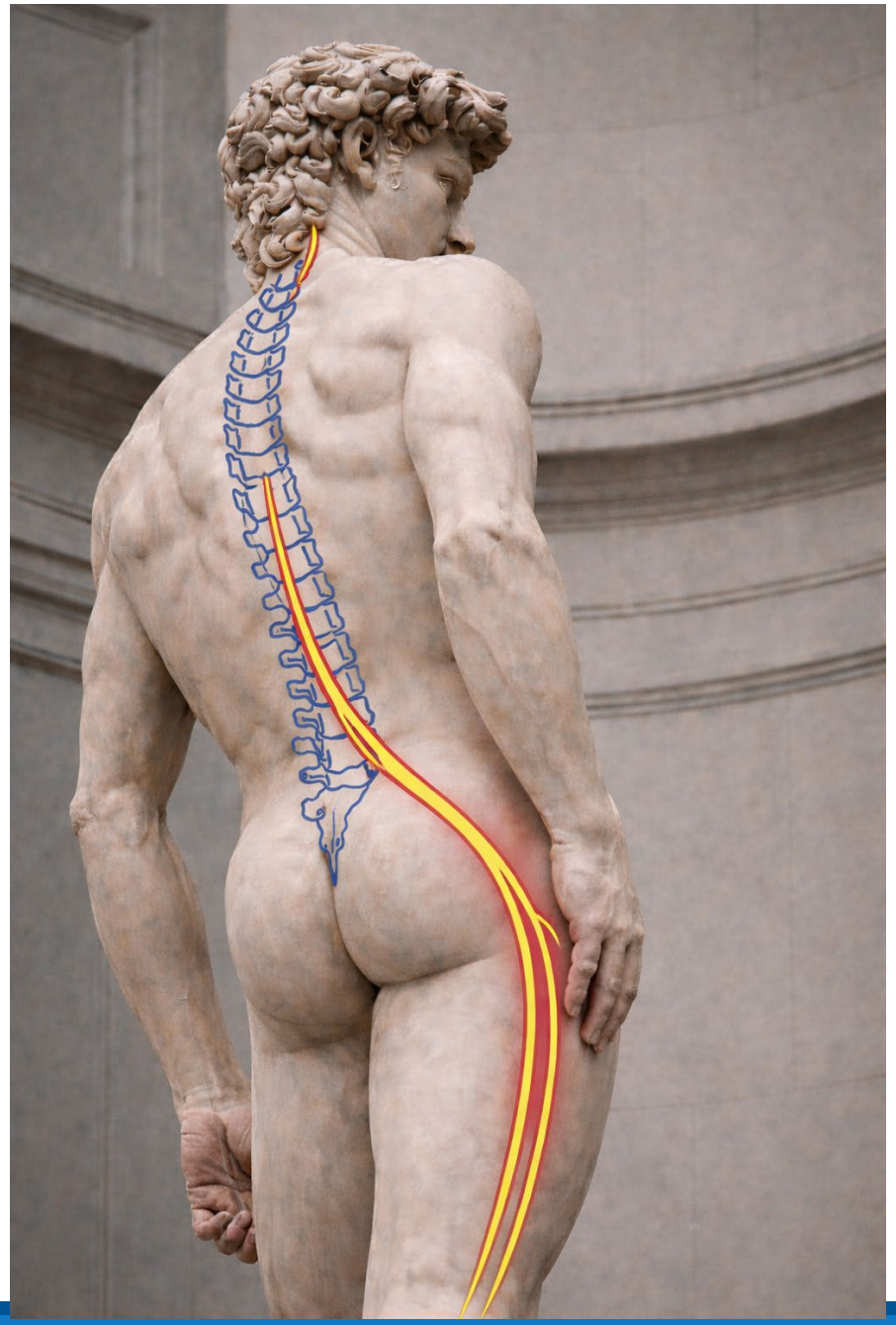


3S for SPINE

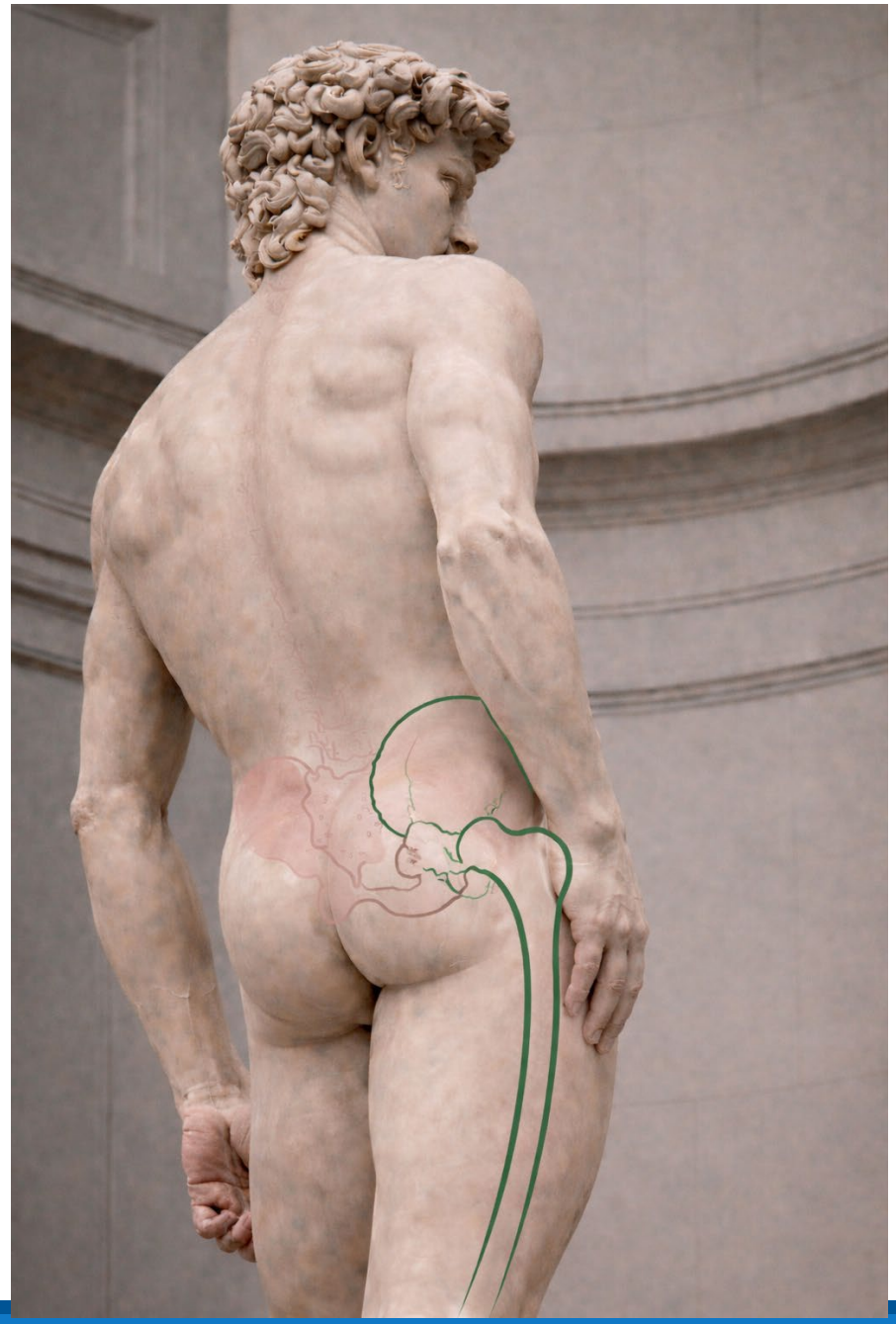
- Sharp
- Shooting (below knee)
- Sciatic (course)

What can cause David’s pain?

1-

2-

3- Hip



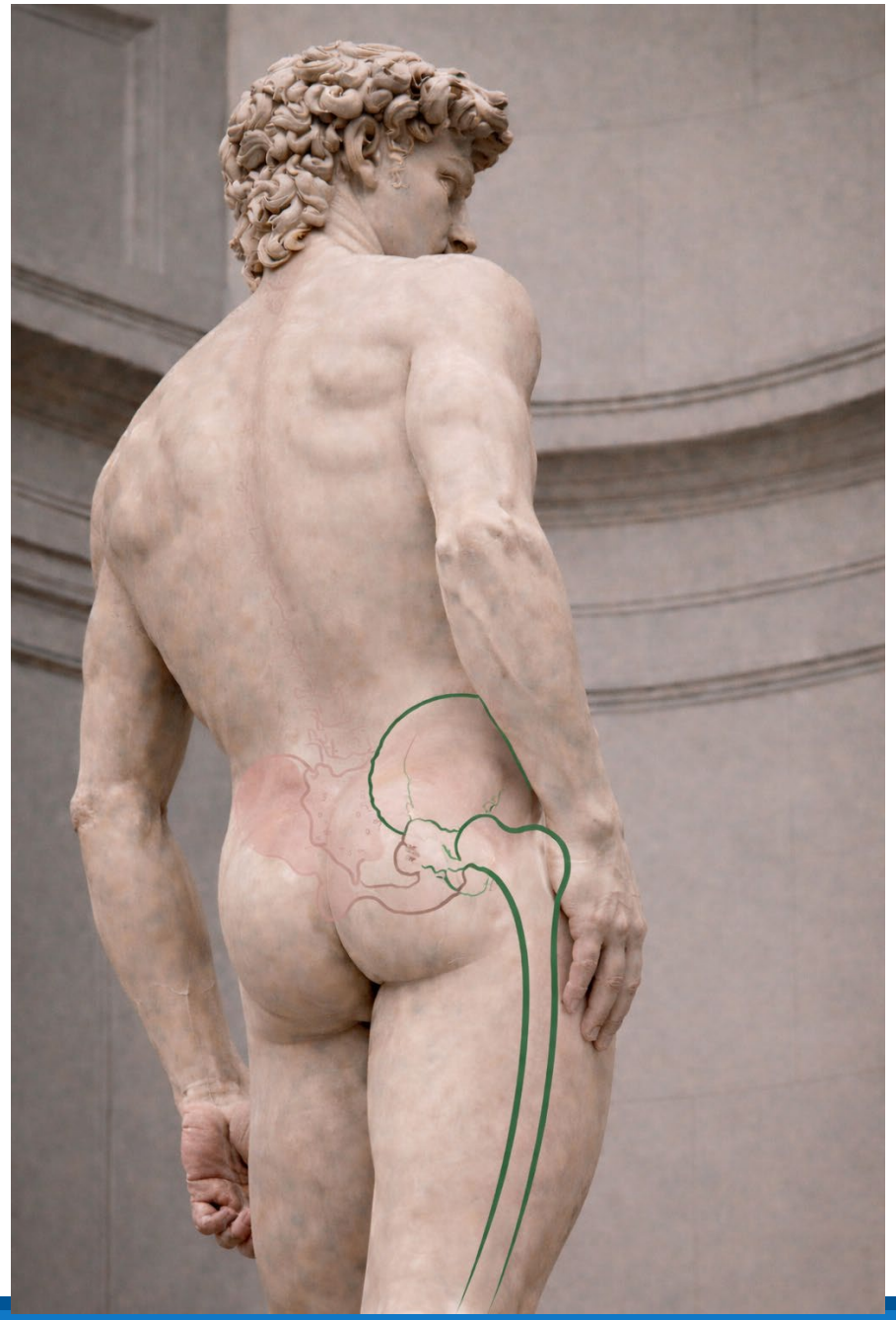
HIP

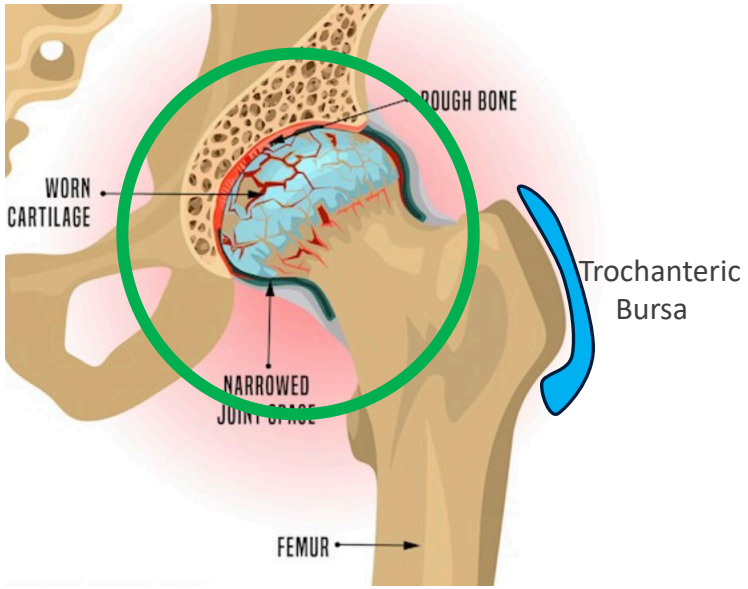
What can cause David’s pain?

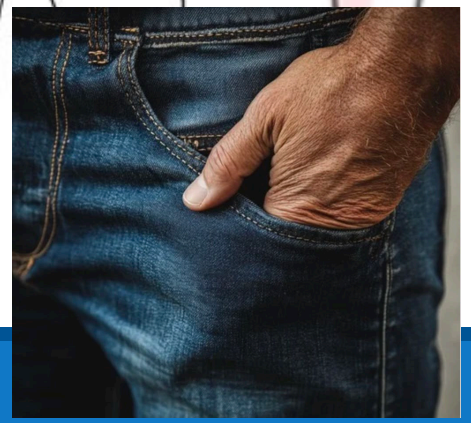
1-

2-

3- Hip







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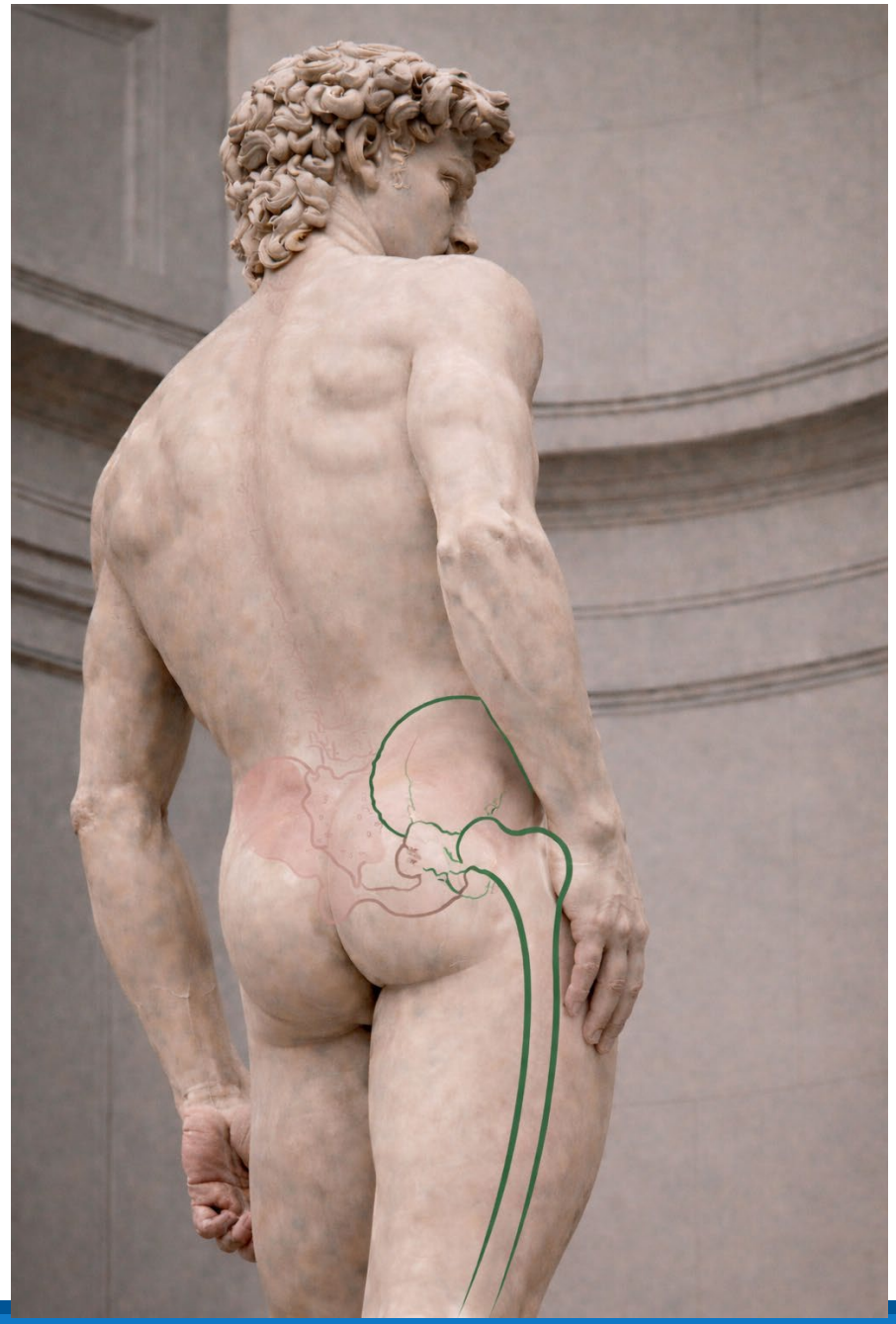


3S for SPINE

- Sharp
- Shooting (below knee)
- Sciatic (course)

(Hand in Pocket) for HIP

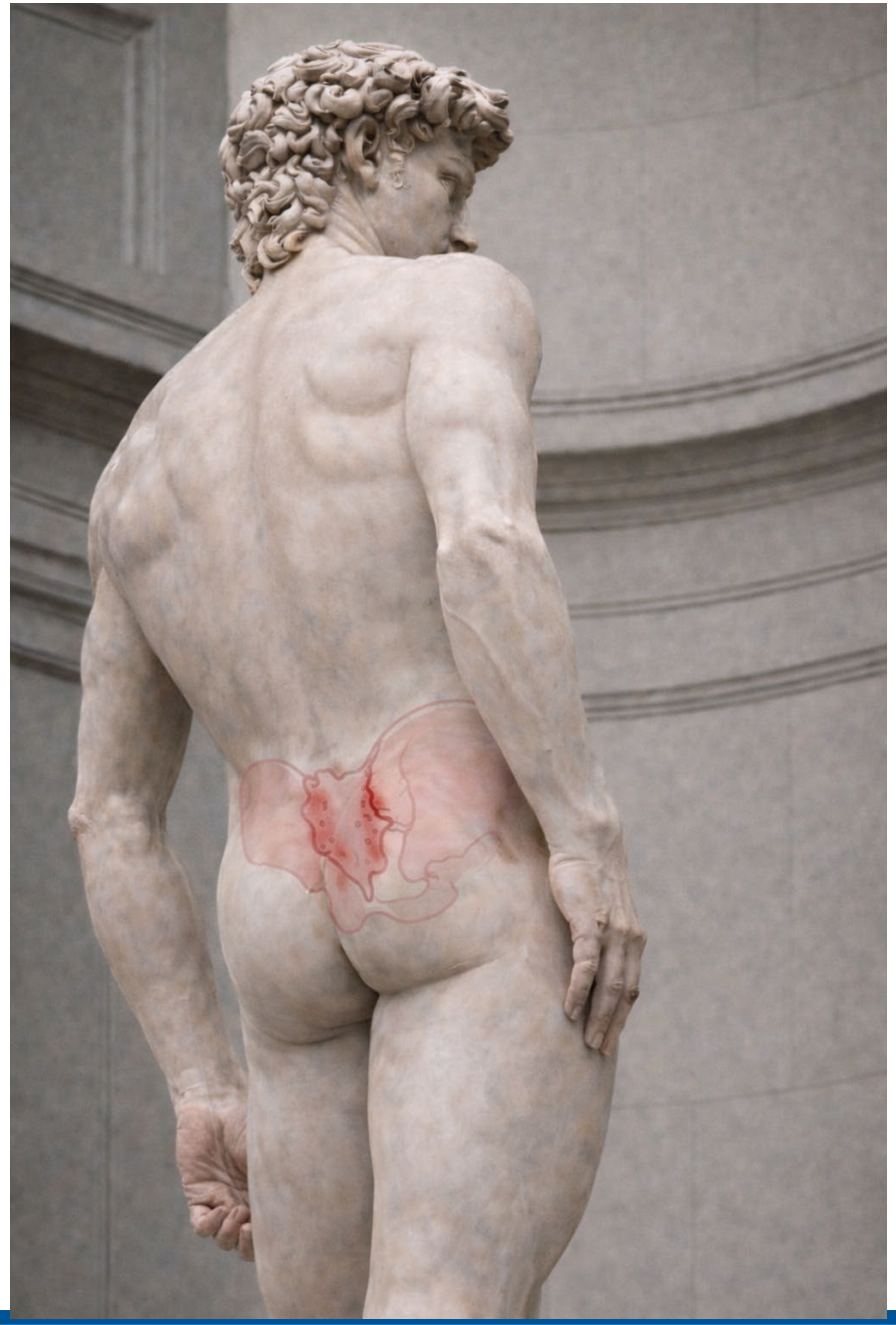
- Anterior Groin – HIP
- Limited hip Flexion-Rotation
- Latera Hip – Bursitis

What can cause David's pain?

1- Spine

2- Pelvis / SI Joint

3- Hip



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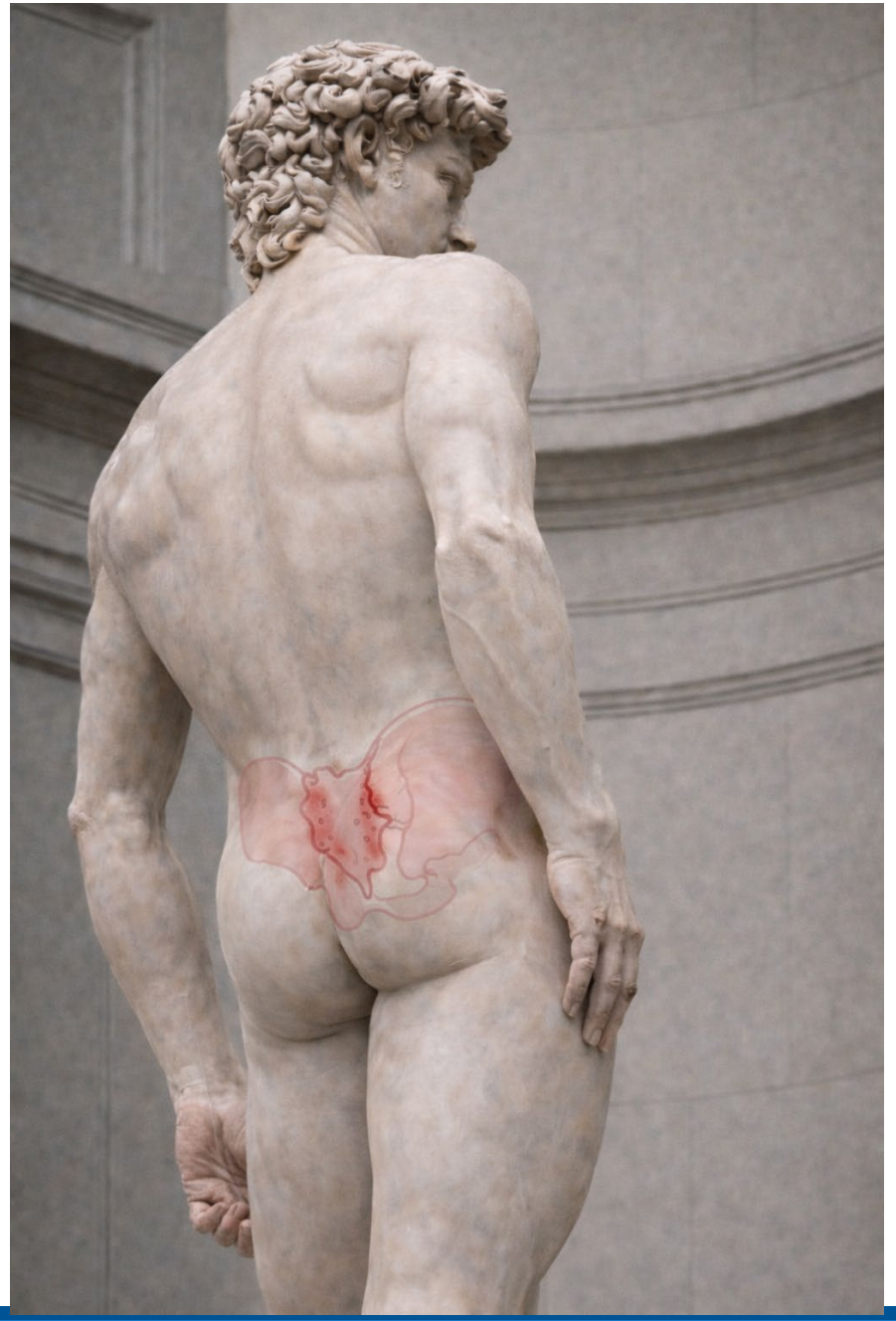

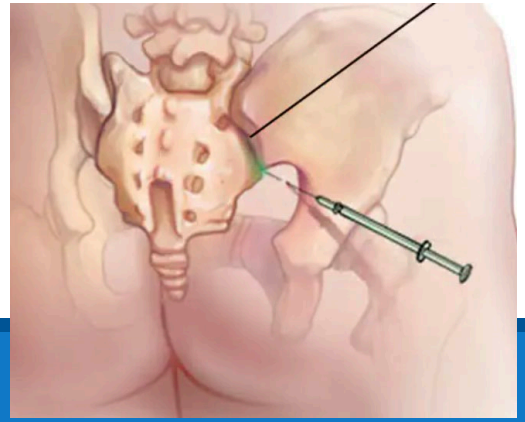

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2- Pelvis / SI Joint

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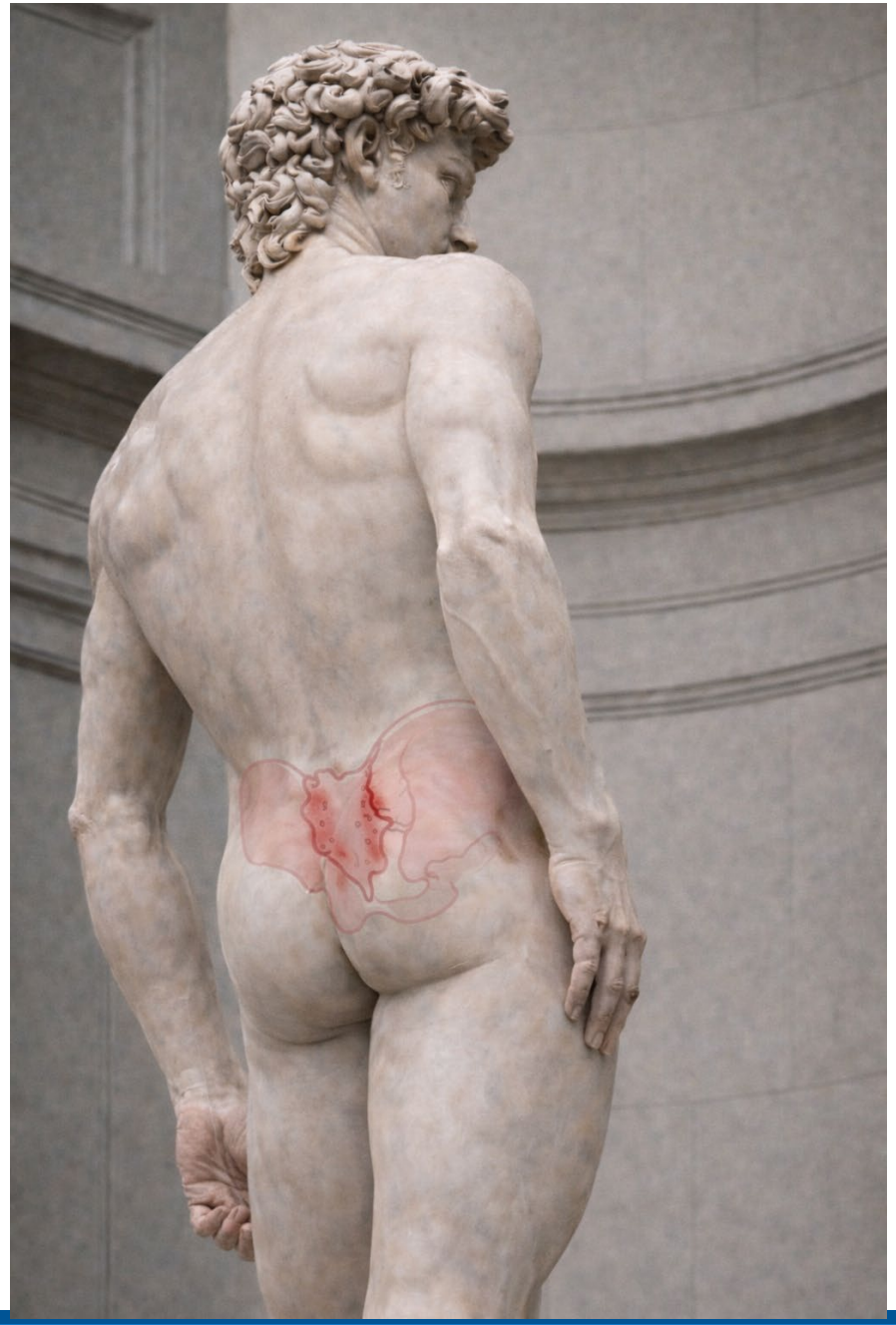

SI (Fake) Joint

Finger – Fortin Test

Injection: 3x provocative

What can cause David's pain?

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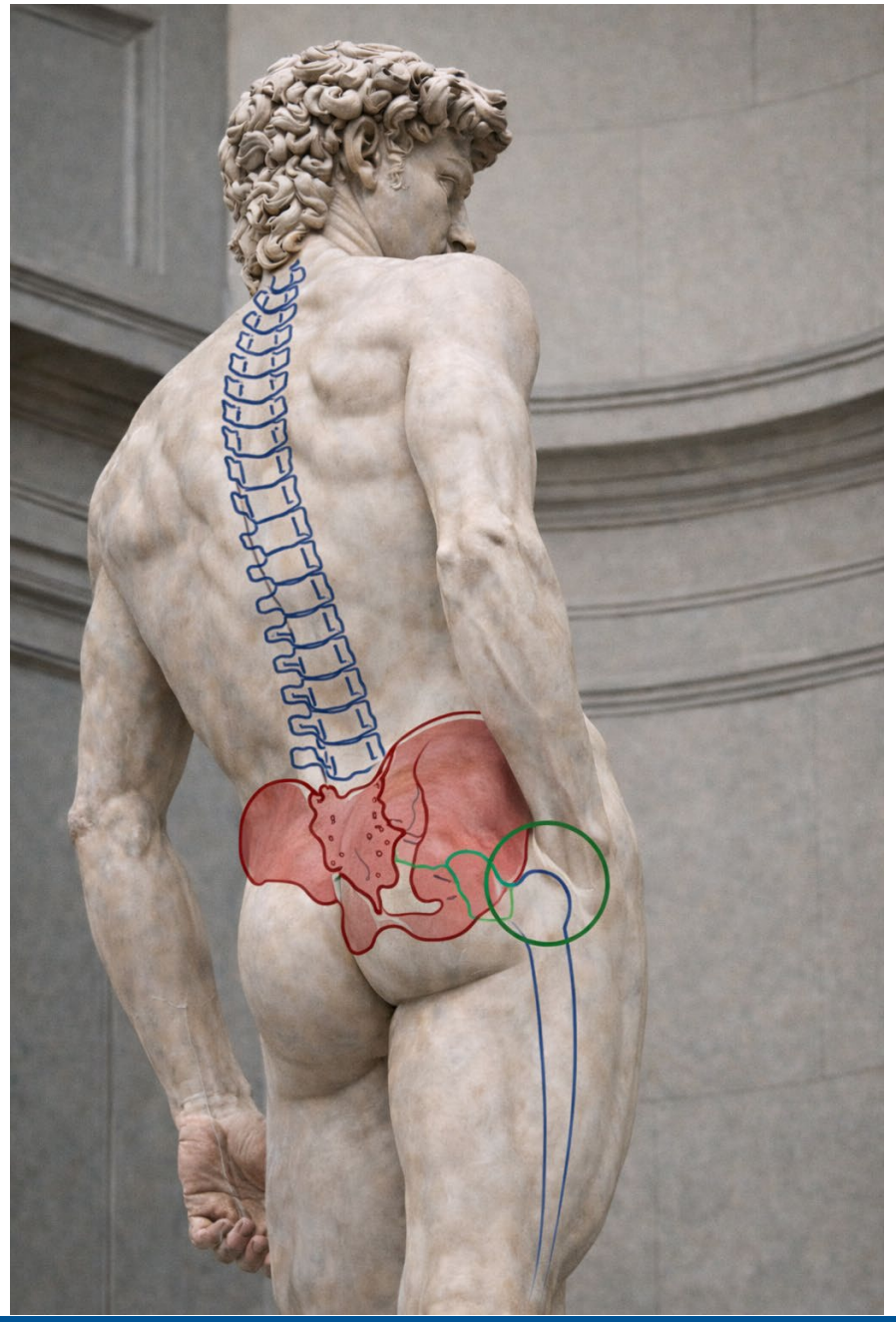

3S for SPINE

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SI (Fake) Joint

Finger – Fortin Test

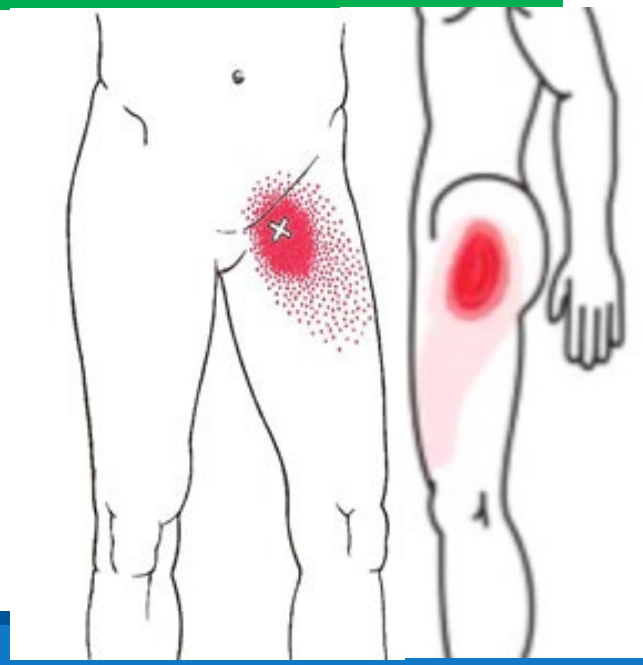
Injection: 3x provocative

(Hand in Pocket) for HIP

- Anterior Groin – HIP
- Limited hip Flexion-Rotation
- Latera Hip – Bursitis

To Sum it up

Characteristics	Spine	Sacro-Iliac Joint	Hip
3 Characteristics	**3S for SPINE** Sharp Shooting (below knee) Sciatic (course)	**SI (Fake) Joint** Finger – Fortin Test Injection: 3x provocative	**(Hand in Pocket) for HIP** Anterior Groin – HIP Limited hip ROM Latera Hip – Bursitis



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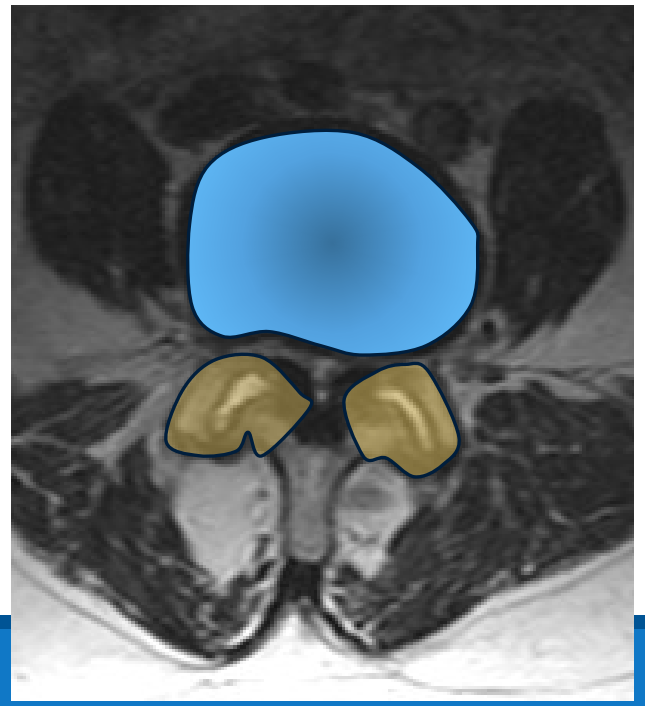
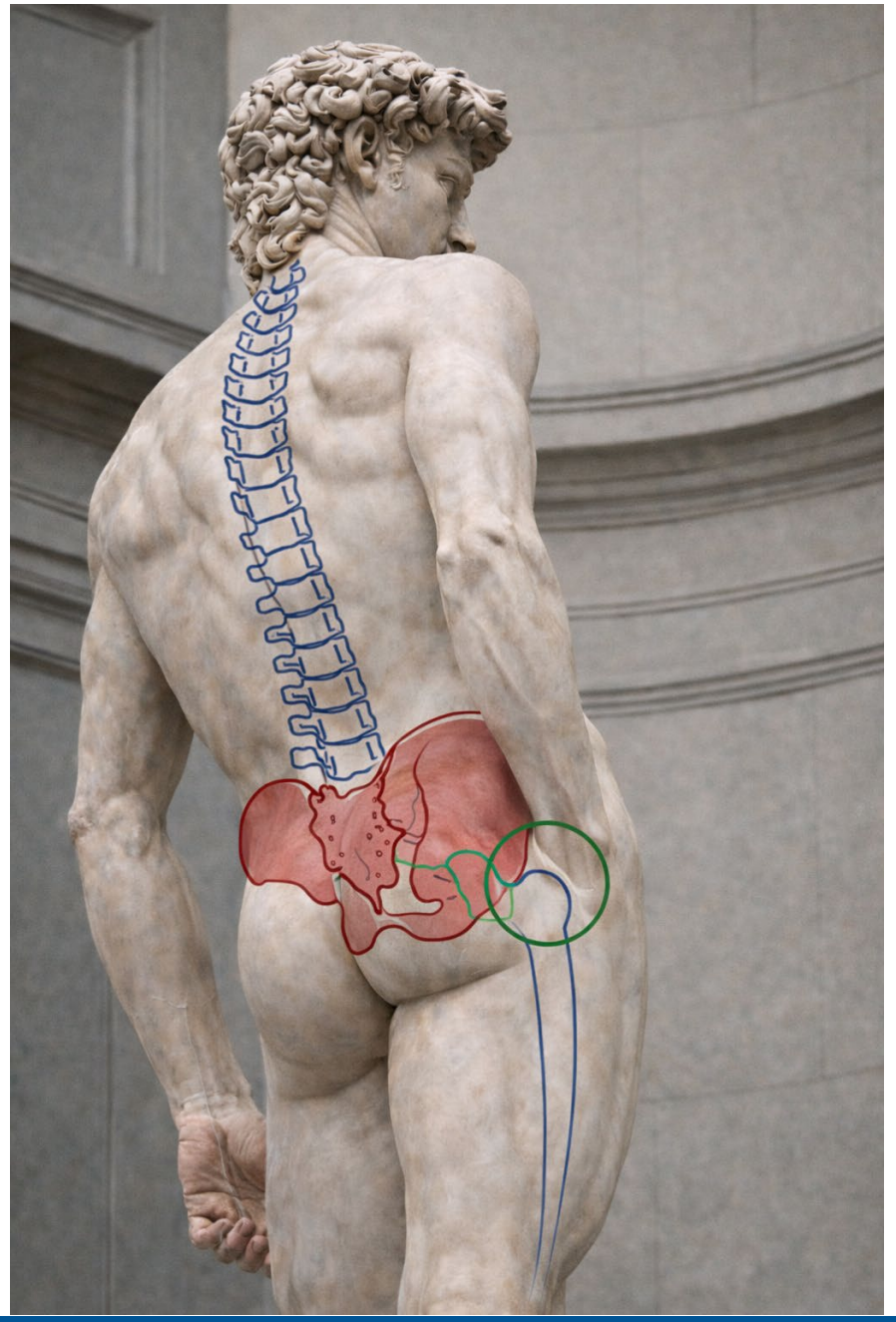




!BAD ACTORS!

SPINE

- Disc related pain
- Facet related pain

Sacro-iliac Pain

- L4-S1 disc related
- L4-S1 facet related

HIP

- Anterior Groin: L2-3 disc
- Latera Hip: L4-S1 disc

Thank you!

Most Educational Thoraco-Lumbar Spine Workers' Comp Case of the Year

March 24, 2026

Jason Pittman, MD, PhD, FAAOS
Division Chief of Orthopedic Spine Surgery

Disclosures

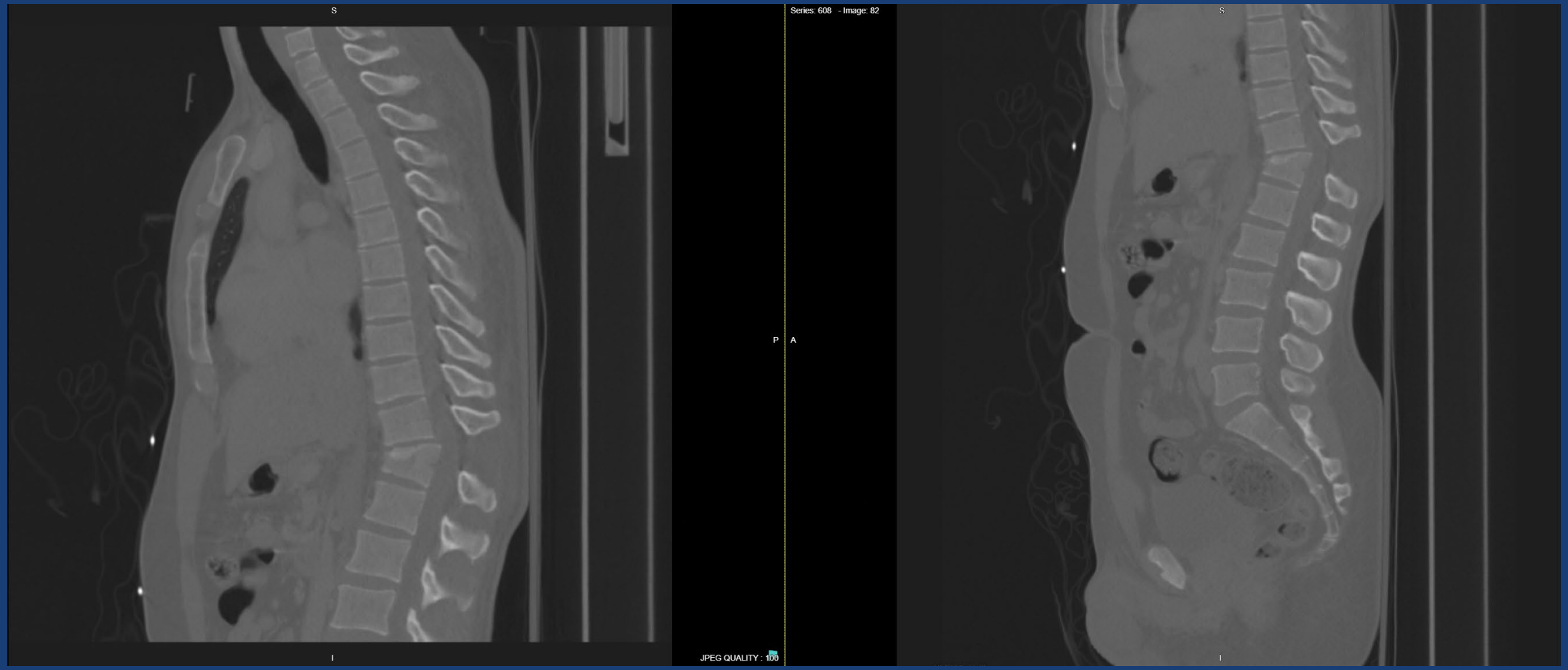
- DePuy/Synthes (Consulting)
- BrainLab (Consulting)
- ZSFab (Consulting)
- Amplify Surgical (Speaking)
- ROM Tech (Stock)

Patient Presentation

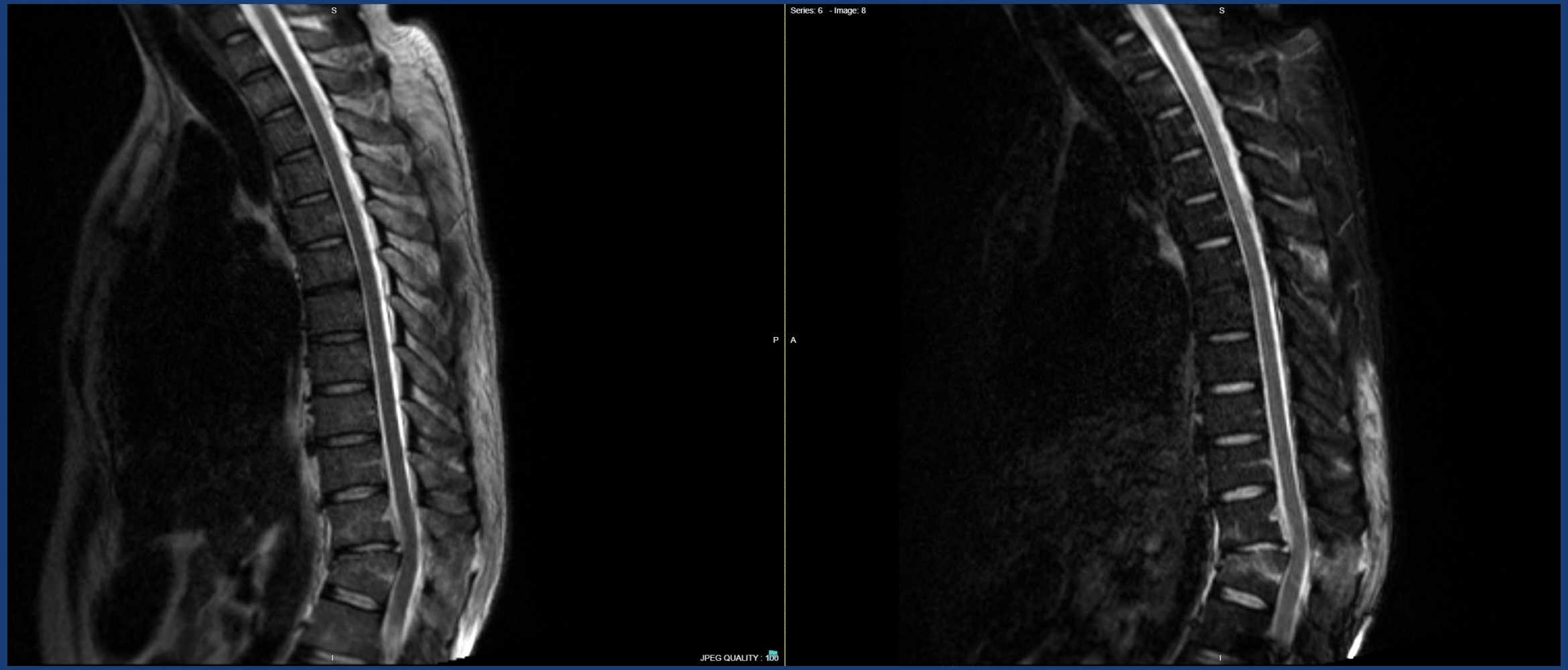
- 26 year-old male
- Presented to BIDMC as a trauma activation
- States that he was driving an excavator when he lost control and ran into a brick wall and had several bricks fall onto his head
- He was wearing a hard hat at the time
- He reported immediate back pain and pain with breathing

Initial Imaging (CT)

Initial Imaging (CT)

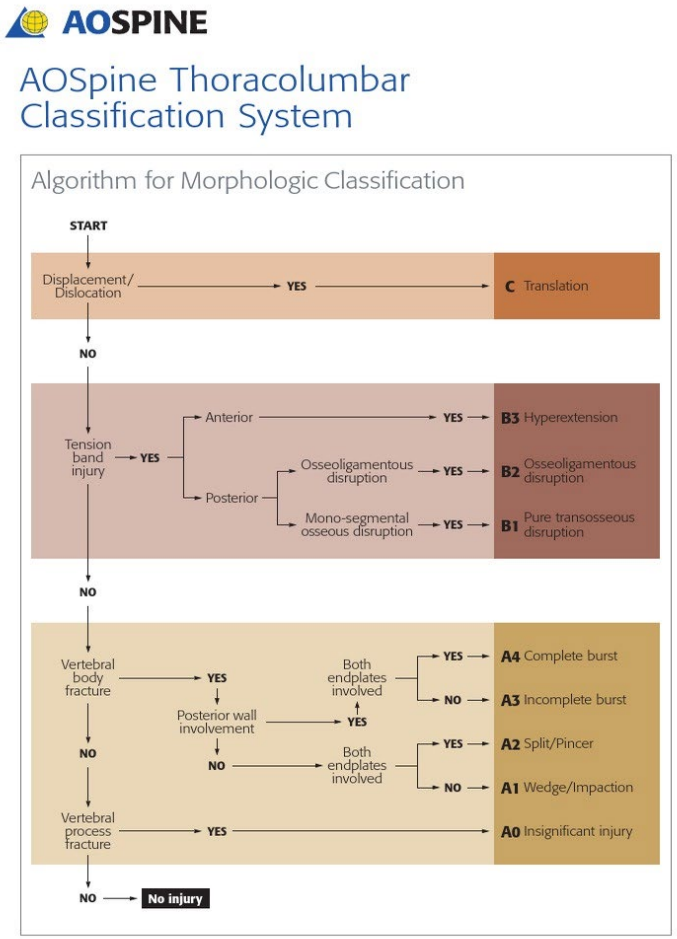


Initial Imaging (MRI)



Epidemiology and Decision Making

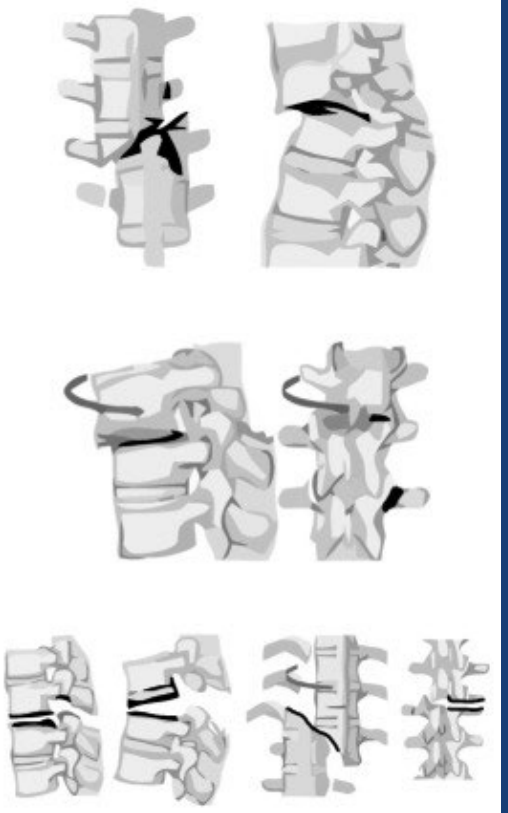
- 6% of all fractures involve the spine
- 30-60% of spine fractures involve the thoracolumbar spine
- Fracture pattern, stability and neurologic injury are used to guide clinical and treatment decision making



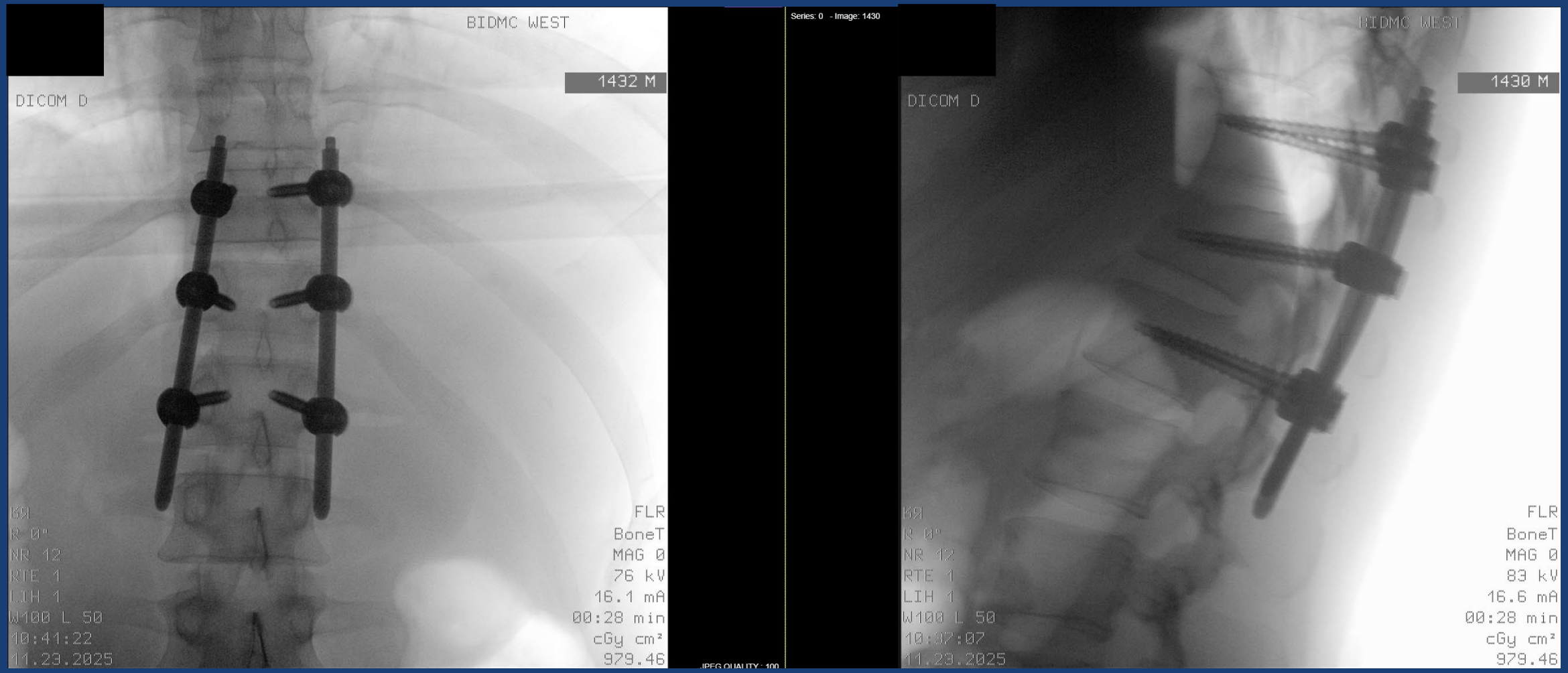
Fracture Pattern

C

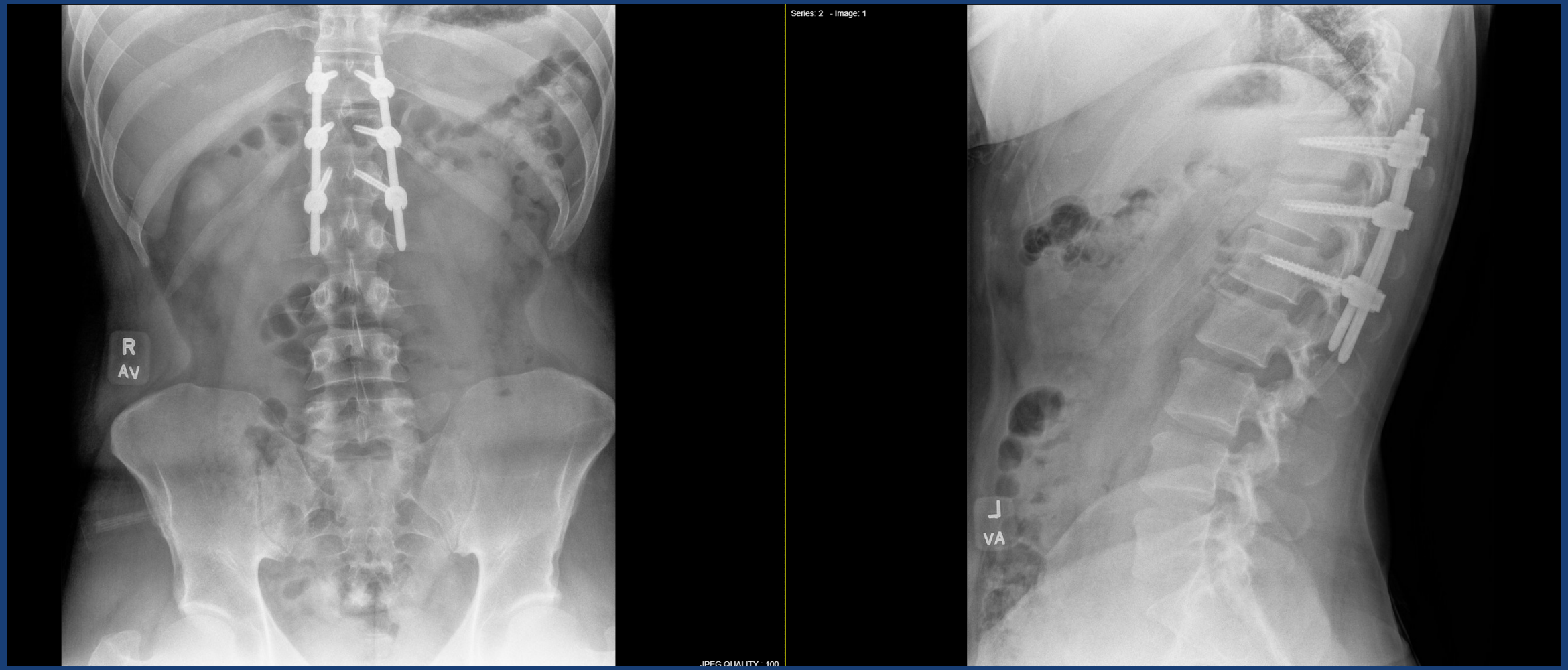
- Displacement/translation injury
- Disruption of anterior and posterior structures



Intraoperative Imaging



6-month Follow-up X-Rays



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Work Injuries in NY vs. MA Lumbar Case of the Year

Neil V. Shah, MD, MS

Attending Orthopaedic Surgeon

BronxCare Health System, Bronx, NY

Disclosures

No financial disclosures to report.

New York State

- Any business with employees must purchase coverage
- Worker types coverage might exclude
  - Clergy members
  - Some City, some domestic, and some casual employees
  - Longshoremen and harbor workers, Railroad employees
- Reporting deadline: 30 days
- Waiting period – 7 days (retroactive if disability >14 days)

New York State

- Compensation Calculation via Statutory Schedule:
  - Permanent total – 2/3 average weekly wages
  - Temporary total – 2/3 average weekly wages during disability period
  - Permanent partial – 2/3 difference between average weekly wage and wage-earning capacity thereafter
  - Temporary partial – 2/3 difference between avg weekly wages before accident and wage-earning capacity after

Workers' Compensation Guidelines for Determining Impairment

First Edition, November 22, 2017

New York State Guidelines for Determining Permanent Impairment and Loss of Wage Earning Capacity

December 2012

Chapter 11: Spine and Pelvis

11.1 : Soft Tissue Spine Conditions

NEW YORK STATE OF OPPORTUNITY. Workers' Compensation Board

11.3 : Supplementary Tables: Radiculopathy Criteria[9]

Table S11.4: Radiculopathy Criteria

Residual radicular pain >6 months after surgery is usually investigated with post-operative imaging.

Table S11.4: Radiculopathy Criteria

Objective Testing	Documented Objective Findings at the Time of Rating	Score
Imaging	Findings of: • significant disc abnormalities that displace nerve tissue **and/or** • bony/mechanical nerve root encroachment evident on imaging. These imaging findings must correlate with the clinical picture.	Yes/No Yes = 16 No=0
EMG Abnormalities	Findings of: • fibrillation potentials **and/or** • positive sharp waves • seen in at least 2 muscles in the distribution of the involved nerve root(s).*	Yes/No Yes = 6 No=0

Table S11.4: Radiculopathy Criteria

Objective Testing	Documented Objective Findings at the Time of Rating	Score
Reflex Changes	Requires: • loss of/or significantly diminished deep tendon reflexes (biceps-tricepsbrachioradialis-patellar-or ankle jerk) as compared to the reactive non-affected side. • a difference of one or more grades in the reflex response between the two sides is significant. Reflexes: • 0 Absent • + Present but diminished • ++ Normal • +++ Increased but not necessarily pathological	Reflexes (0 to +++) Absent = 6 Present but diminished = 4 Normal = 0 (++, +++)
Tension-Compression Signs	• Spurling's Sign** • Straight Leg Raise*** • Femoral Stretch****	Yes/No Yes = 4

Table S11.4: Radiculopathy Criteria

Objective Testing	Documented Objective Findings at the Time of Rating	Score
Muscle Involvement	Findings of: • objective muscle weakness **and/or** • muscle atrophy. Unilateral muscle atrophy shown: • by obtaining bilateral circumferential measurements of the calf, thigh, arm or forearm or by inspection of the hand or foot muscles; • with a recording at a specified distance from bony landmarks (such as medial malleolus, anterior superior iliac spine, medial or lateral epicondyle). • differences of less than 2 centimeters in measurement of the two limbs at the same level can be a normal variation, especially if the lesser measurement is on the non-dominant side. • symmetric muscle bulk and strength are expected unless the patient has a relatively long-standing neurologic impairment or disorder of the extremity muscle or joint. An alternative method for detecting atrophy can be sequential measurements over time, providing measurements are taken at the same distance from bony landmarks as above.	Yes/No ***Yes*** = 6-20. See Table 11.4(a) to determine value within range. ***No***=0 ***For muscle atrophy, Yes/No.*** ***Yes*** = 6. ***No***=0.
Sensory Involvement	Findings, as determined by the clinical examination, imaging studies and/or electrodiagnostic testing, of: • reproducible alteration of sensation (sharp/dull, light touch) consistent with specific dermatomal distribution; **and** • dermatomal distribution of sensory disturbances consistent with the location of the spinal lesion.	Yes/No Yes = 4-6 See Table 11.4(b) to determine value within range) No=0

Table S11.4(a). Motor Deficits: Categories for Determining Impairment Due To Loss of Function Resulting From Nerve Disorders (Upper or Lower Extremity Value)[11] [12]

Grade	Description of Muscle Function	Motor Deficit
0	No contractions	20
1	Slight contraction and no movement	20
2	Active movement (range of motion as determined by passive measurement) with gravity eliminated	18
3	Active movement (range of motion as determined by passive measurement) against gravity (without resistance)	6
4	Active movement (range of motion as determined by passive measurement) against gravity with some resistance	0
5	Active movement (range of motion as determined by passive measurement) against gravity with full resistance (no deficit)	0

Table S11.4(b): Sensory Deficits: Categories For Determining Impairment Due To Nerve Root Disorders (Severity Multiplier)[13]

The dermatomal distribution of sensory disturbances should be consistent with the location of the spinal lesion as determined by clinical examination, imaging studies and/or electrodiagnostic testing.

	Description of Sensory Loss	Sensory Deficit
Anesthesia	Total sensory loss	6
Compromised	Diminished or altered sensation	4
Normal	No loss of sensation	0

Note: For each additional root in the same spinal region (cervical or thoracic or lumbar), the Severity Ranking shall be increased by one letter per level, up to a maximum of 3 letters.

For root avulsion established by history, physical exam and proper imaging, the Severity Class shall be L for the non-dominant side and M for the dominant side; and for a flail limb (complete lower motor neuron paralysis of a limb), P for the non-dominant side and Q for the dominant side.

Table S11.5: Spinal Nerve Root Impairment Affecting the Upper Extremity

Nerve Root Impaired	Sensory Deficit	Weakness
C5	0	10
C6	6	10
C7	6	10
C8	4	12
T1	0	12

Table S11.6: Spinal Nerve Root Impairment Affecting the Lower Extremity

Nerve Root Impaired	Sensory Deficit	Weakness
L3	0	12
L4	4	24
L5	4	16
S1	6	18

Table S11.7: Radiculopathy Severity Rankings

To determine placement within the range of severity rankings for radiculopathy, follow these steps:

1. Determine the number of points from Tables S11.4(a), S11.4(b), S11.5 and S11.6, asapplicable.
   a. Cervical: Tables S11.4(a), S11.4(b) and S11.5
   b. Thoracic: Tables S11.4(a) and S11.4(b)
   c. Lumbar: Tables S11.4(a), S11.4(b) and S11.6

2. From either Table S11.7(a) (for cervical or thoracic injury) or Table S11.7(b) (for lumbar injury) below, determine the letter that corresponds to the number of points. This letter is the severity ranking.

Table S11.7(a): Points for Cervical and Thoracic Radiculopathy

Severity Ranking	Cervical	Thoracic
C	0	0
D	4-16	4-16
E	17-32	17-32
F	33-48	33-48
G	49-64	49-64
H	65-80	-

Table S11.7(b): Points for Lumbar Radiculopathy

Severity Ranking	Lumbar
D	0
E	4-16
F	17-32
G	33-48
H	49-64
I	65-80
J	81-92

Lumbar Case of the Year

HPI

- 57F – low back pain + bilateral lower extremity pain (R>L), difficulty ambulating since fall in June 2025; no neck pain

  - Ground-level slip and fall at work (July 12 2018) → surgeries:
    - June 2019 – C4-C6 ACDF
    - Nov 2019 – L4-S1 posterior spinal fusion
    - July 2020 – revision anterior-posterior L4-S1 instrumented interbody fusion for pseudarthrosis

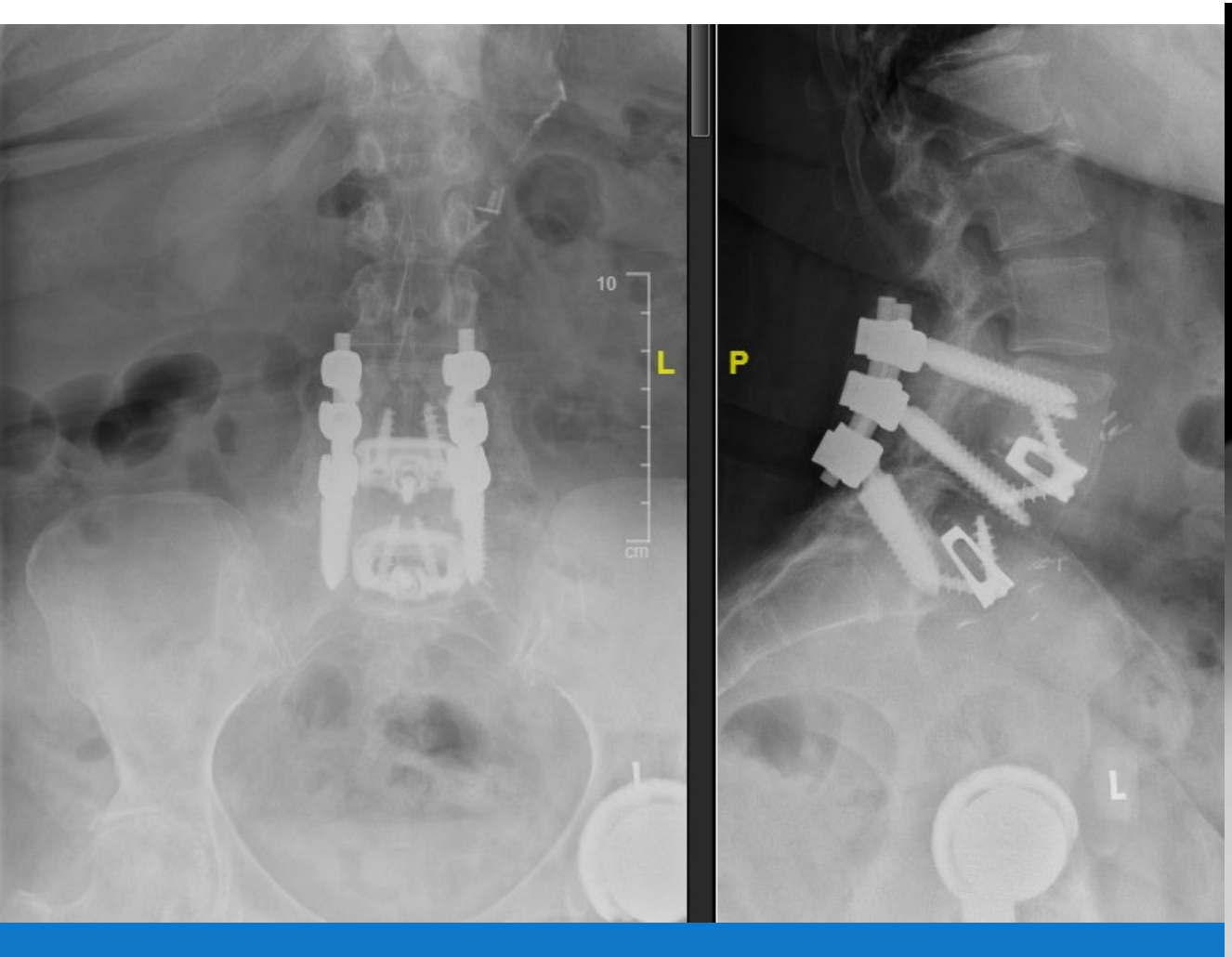
  - Fell in June 2025 → above symptoms
    - Low back pain, VAS: 10/10
    - Bilateral LE pain, VAS, R>L: 10/10

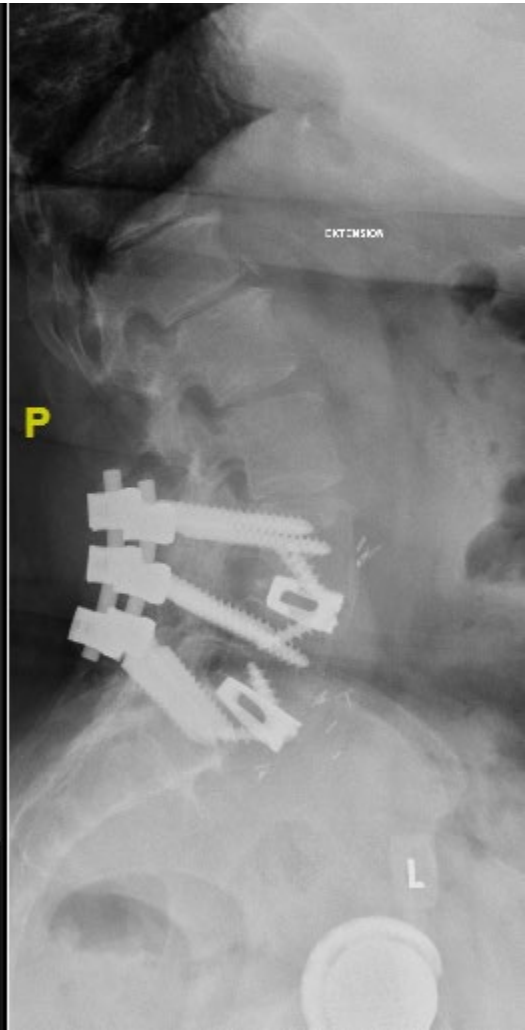
Recent Treatment & Exam

- PT/Chiro – multiple courses >2-3 months – minimal lasting relief
- ESI: multiple, including Aug 2025 with 2 weeks of relief
- Medications: Tylenol, NSAIDs, gabapentin, cyclobenzaprine

- Uses walker, morbidly obese (BMI 36), thoracic hyperkyphosis
- Lower Extremity Exam
  - 5/5 motor strength throughout except 4/5 at Ilio-Psoas (due to pain)
  - 2/2 sensation intact to light touch (L2-S1)
  - Positive bilateral straight leg raise at 50 degrees

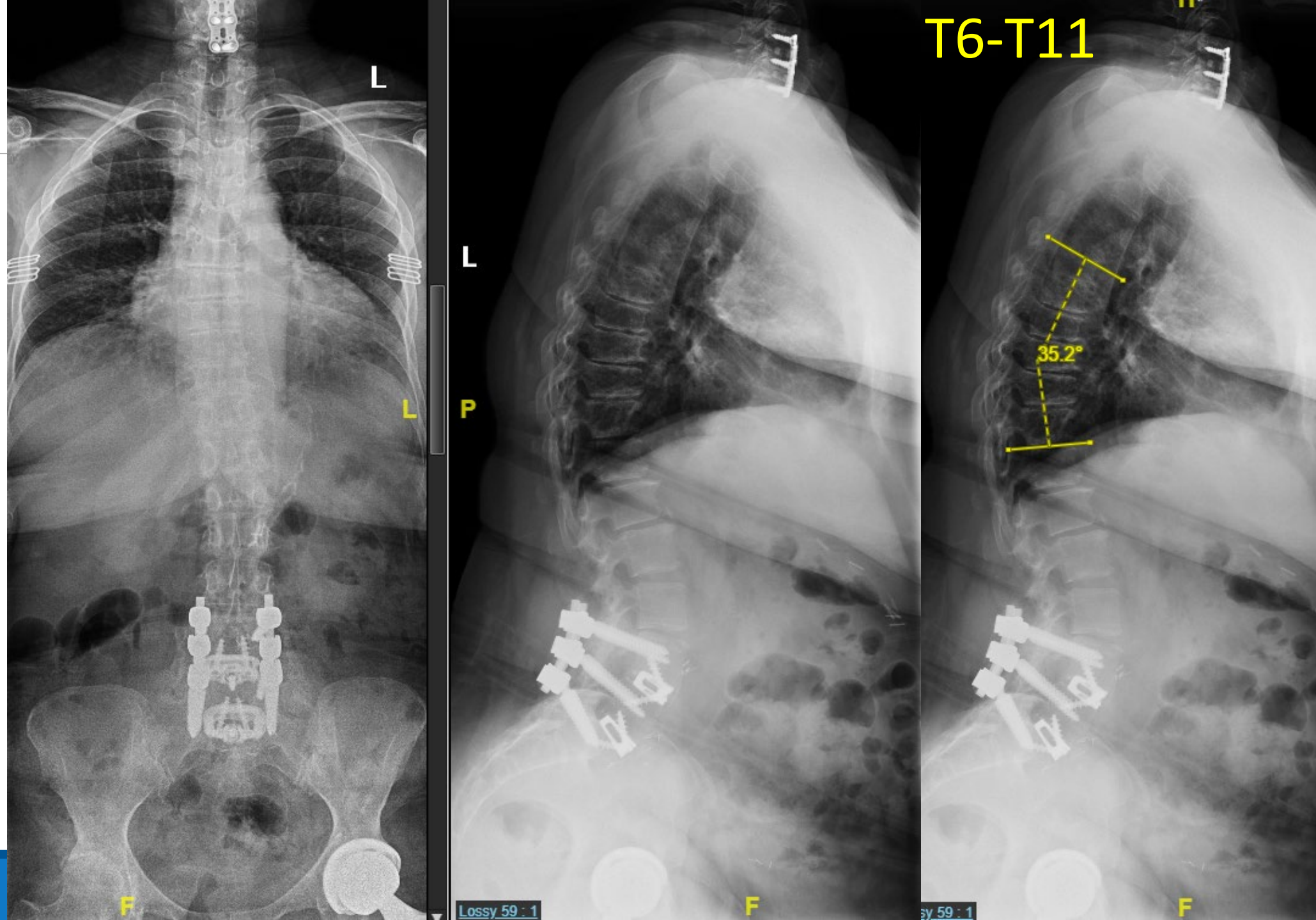
Imaging





Imaging

CT:
T4-T11: 38 degrees hyperkyphosis; anterior osteophytes with near-complete bridging across T8-T11



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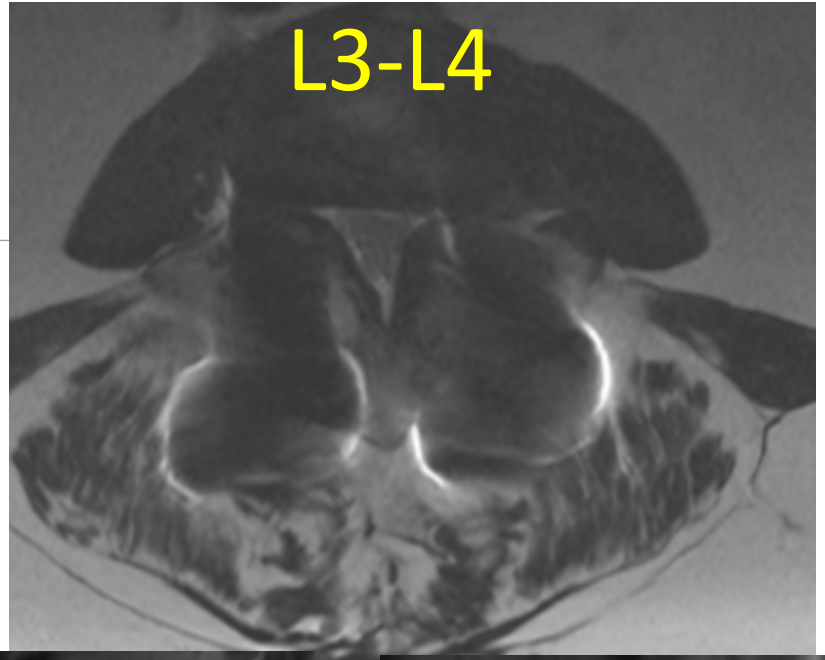

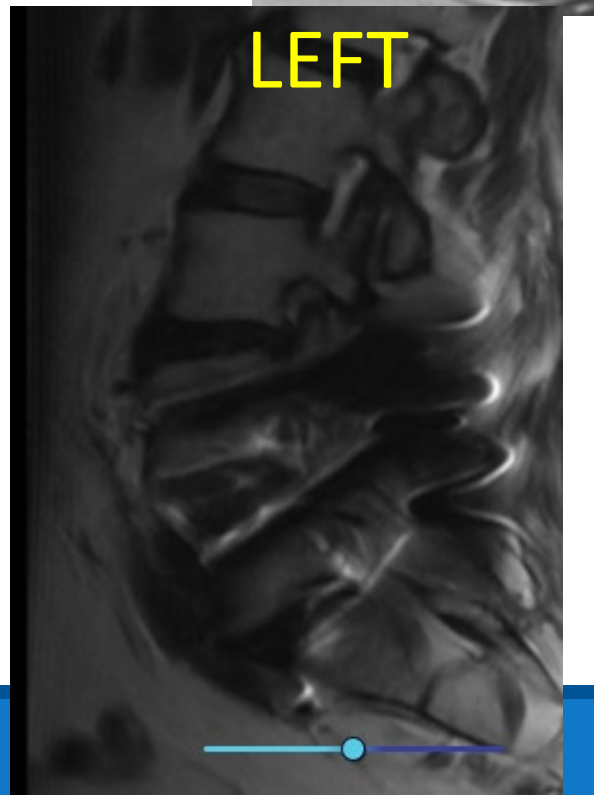

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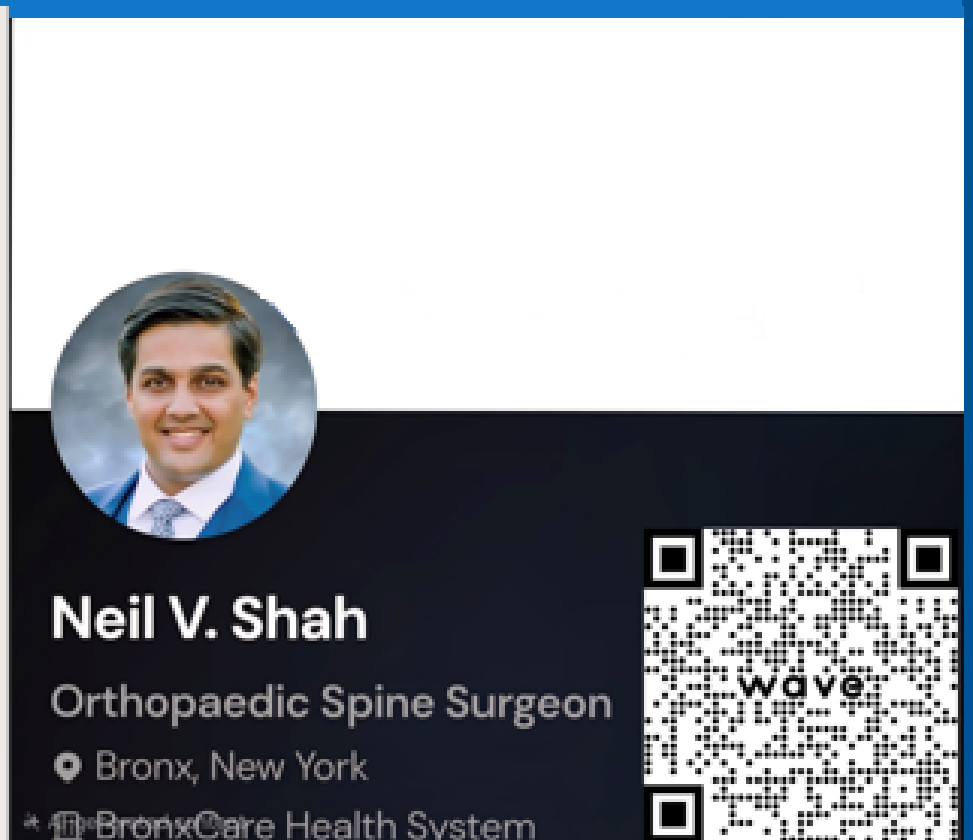

Thank you!