

# AMSER Case of the Month

## November 2025

65 y/o man s/p mechanical fall

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# Patient Presentation

- 65 y/o male patient who presented as a level 2 trauma activation
- Mechanical fall down a flight of stairs

# Pertinent Labs

- None

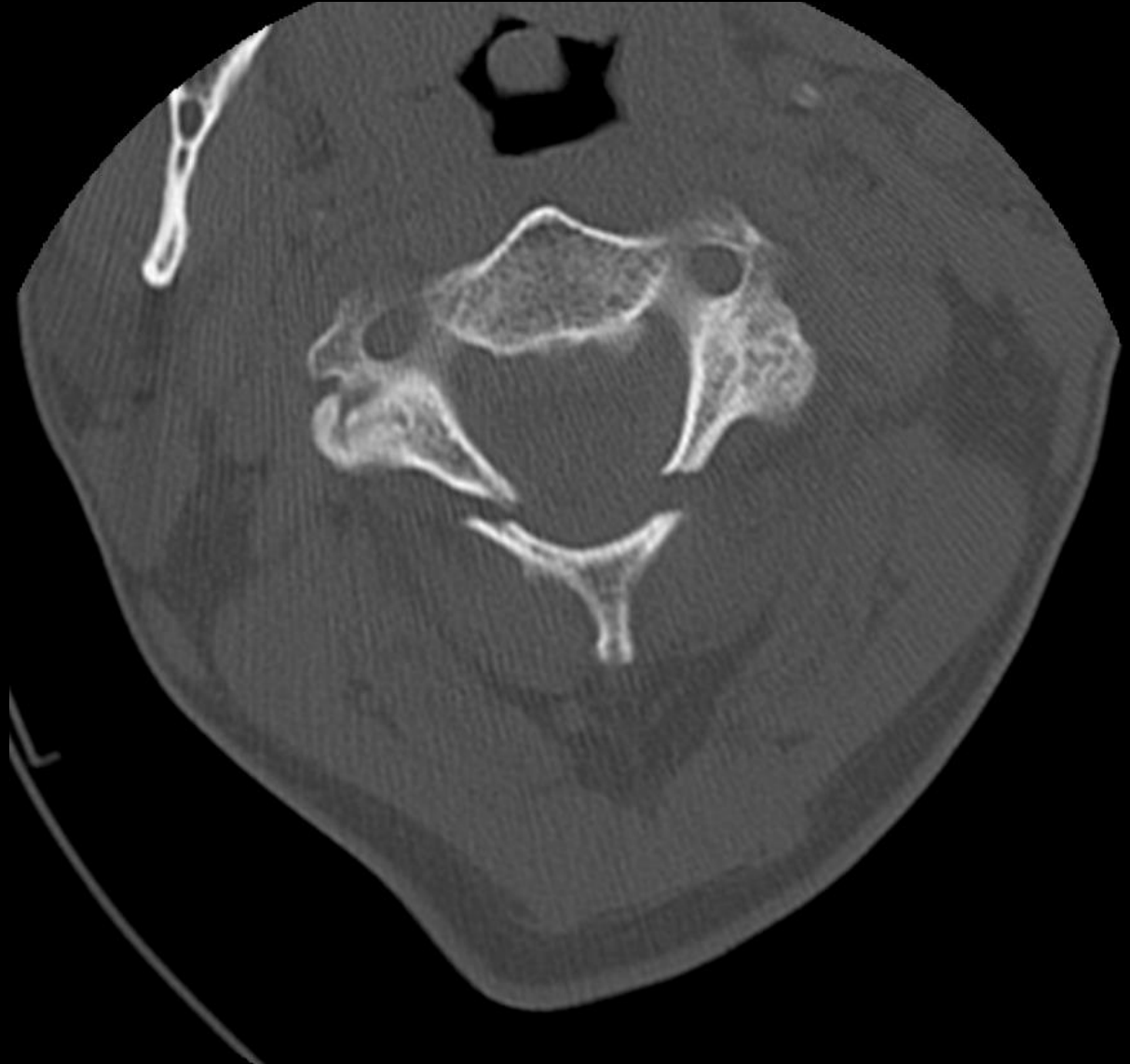
What Imaging Should We Order?

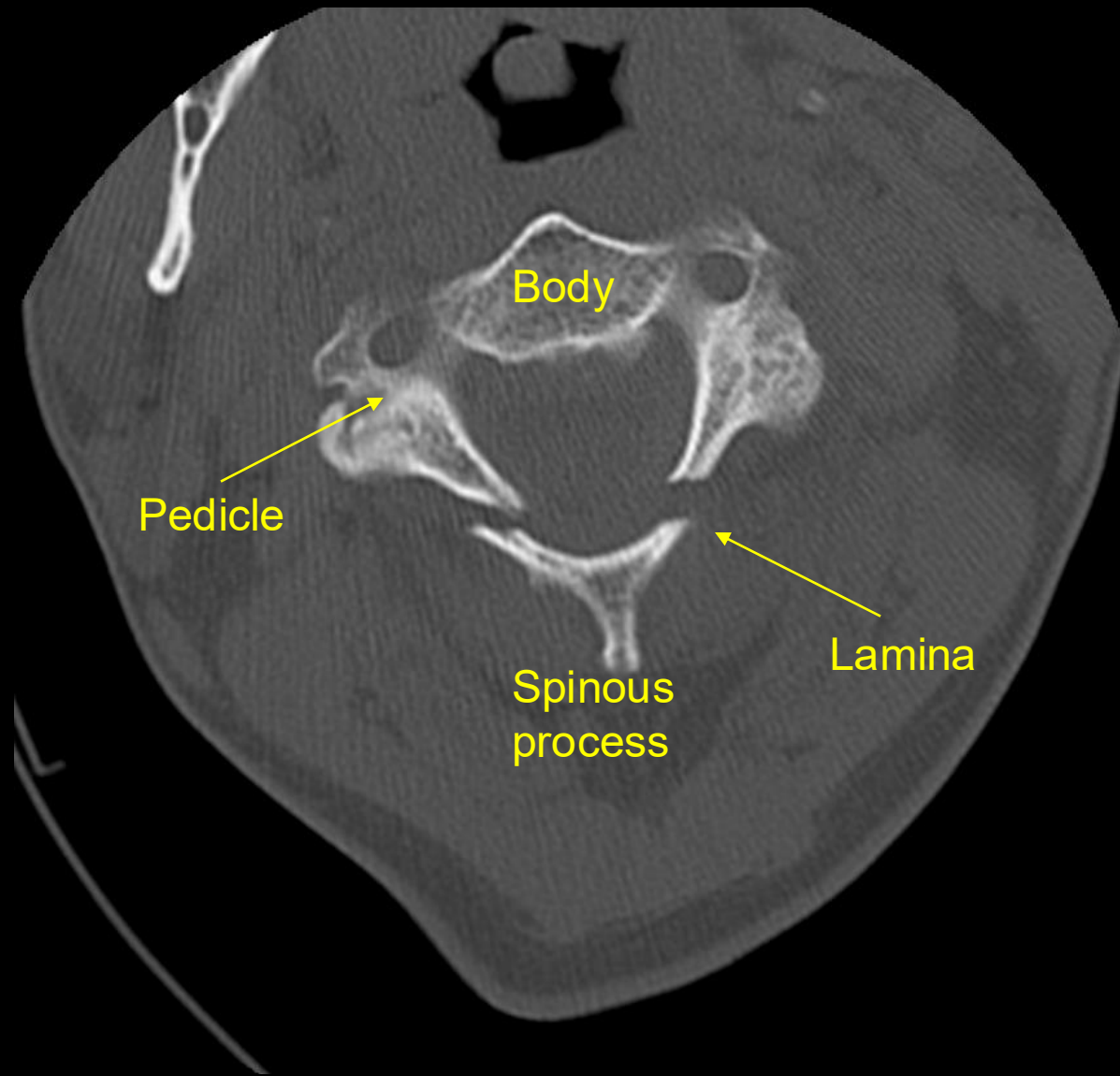
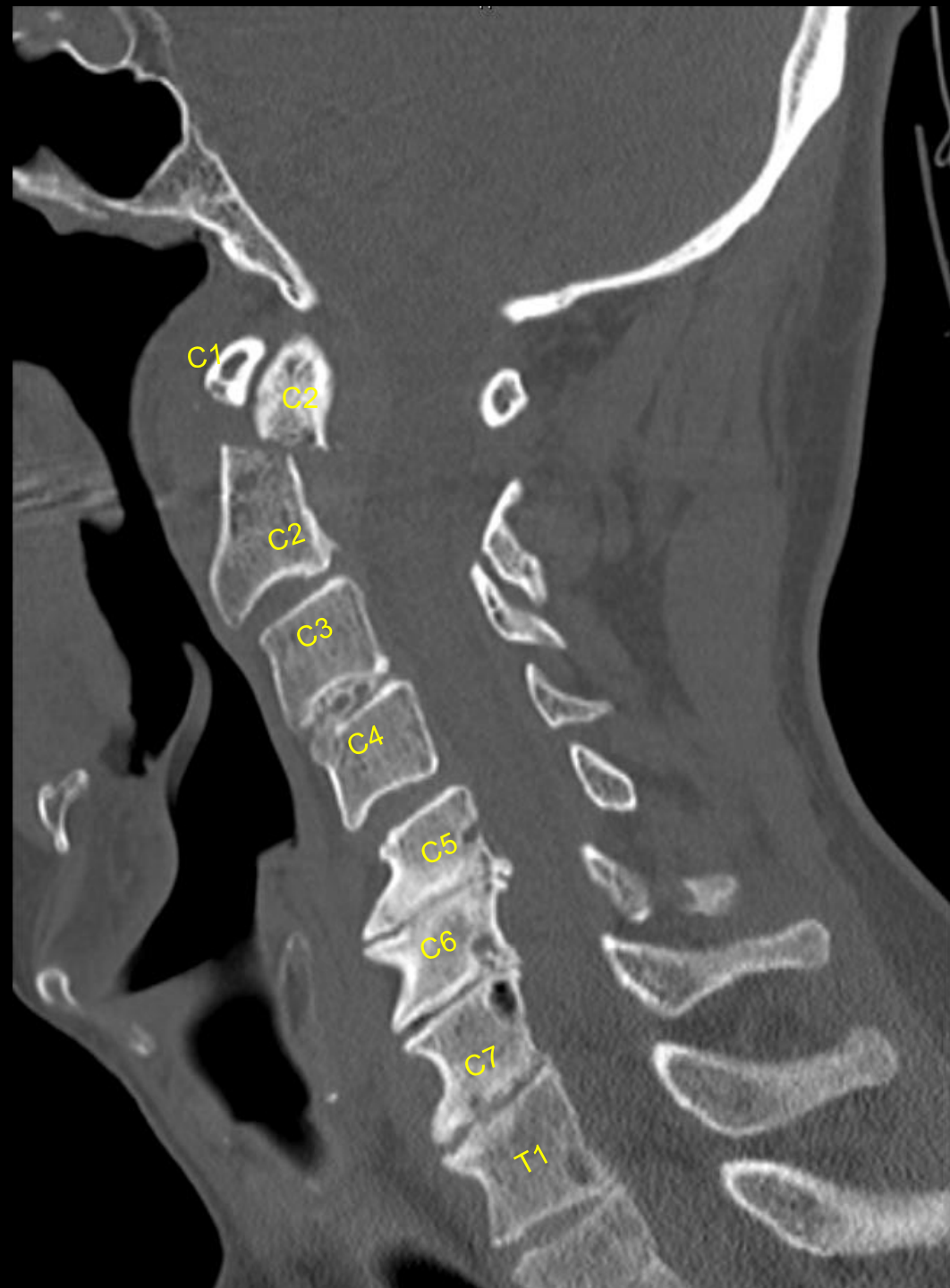
# Select the applicable ACR Appropriateness Criteria

Variants		Documents			
1. Age 16 years or older. Acute cervical spine blunt trauma. Imaging indicated by CCR or NEXUS clinical criteria. Initial imaging.		Documents			
		<a href="#">Narrative</a> <a href="#">Evidence Table</a> <a href="#">Lit Search</a> <a href="#">Appendix</a>			
Scenario	Scenario ID	Procedure	Adult RRL	Peds RRL	Appropriateness Category
Cervical spine trauma, acute, blunt, falls from ≥3 feet or 5 stairs, initial imaging	3198847	● CT cervical spine without IV contrast	1-10 mSv ☼☼☼	3-10 mSv [ped] ☼☼☼☼	Usually appropriate
		● Radiography cervical spine	0.1-1mSv ☼☼	0.03-0.3 mSv [ped] ☼☼	Usually not appropriate
		● Arteriography cervicocerebral	1-10 mSv ☼☼☼	3-10 mSv [ped] ☼☼☼☼	Usually not appropriate
		● MRA neck with IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● MRA neck without and with IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● MRA neck without IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● MRI cervical spine with IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate

This imaging modality was ordered by the ER physician







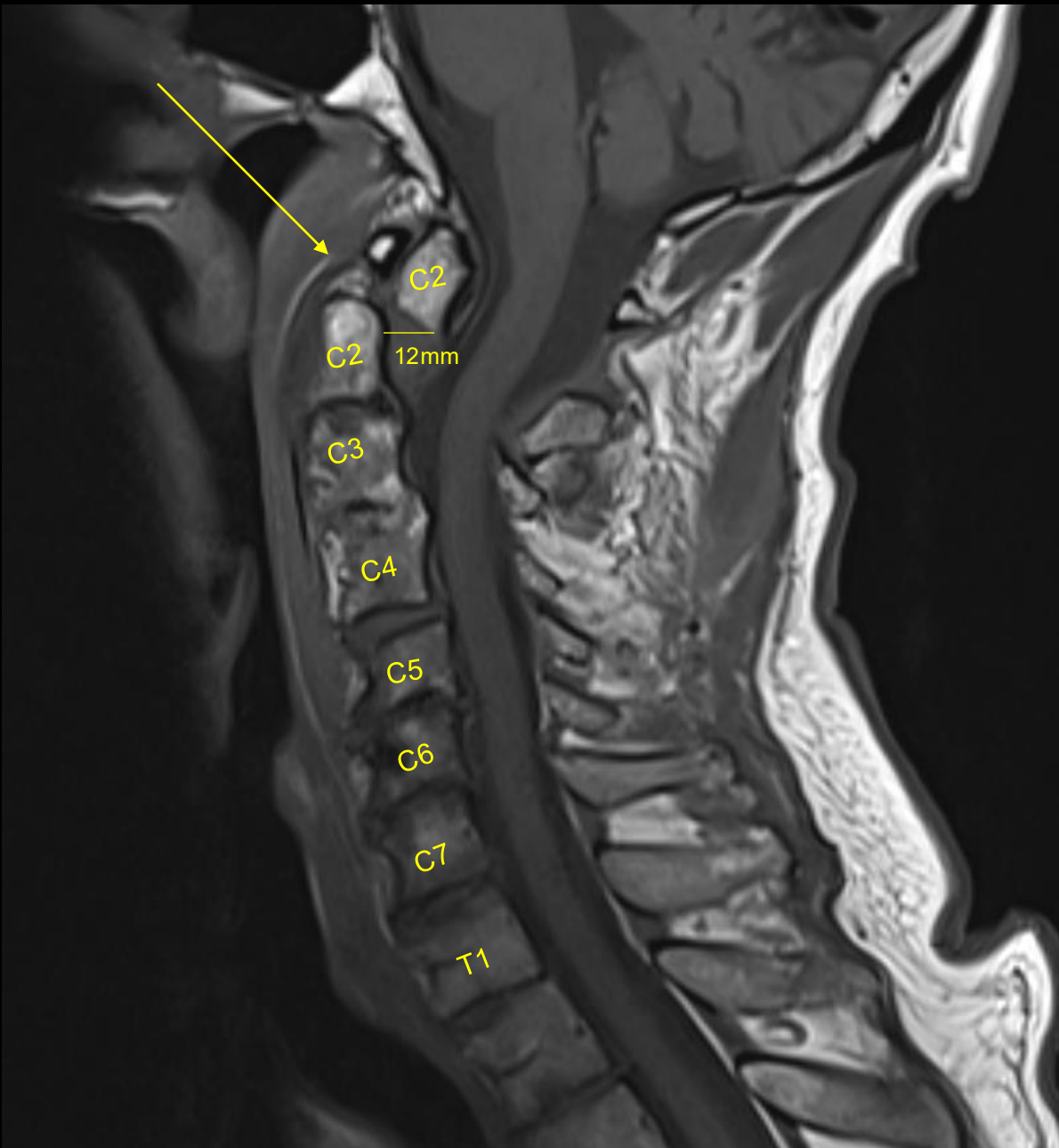
# Select the applicable ACR Appropriateness Criteria

Variants		Documents			
1. Age 16 years or older. Acute cervical, thoracic or lumbar spine blunt trauma. Suspected or confirmed ligamentous, spinal cord or nerve root injury, with or without trauma identified on CT. Next imaging study.		<a href="#">Documents</a>			
		<a href="#">Narrative</a>			
		<a href="#">Evidence Table</a>			
		<a href="#">Lit Search</a>			
		<a href="#">Appendix</a>			
Scenario	Scenario ID	Procedure	Adult RRL	Peds RRL	Appropriateness Category
		● MRI cervical spine without IV contrast	0 mSv 0	0 mSv [ped] 0	Usually appropriate
		● MRI complete spine without IV contrast	0 mSv 0	0 mSv [ped] 0	Usually appropriate

This imaging modality was ordered by the ER physician







T1



T2 shows normal cord signal (\*)

## Final Dx:

Angulated and displaced type 2 acute odontoid process fracture with bilateral c2 lamina fractures with no imaging evidence of acute spinal cord injury on MRI

# Anderson and D'Alonzo classification of odontoid process fracture

- **Type I**

- rare
- fracture of the upper part of the odontoid (generally oblique)
- above the level of the transverse band of the cruciform ligament
- typically stable

- **Type II**

- most common
- transverse course fracture at the base of the odontoid
- below the level of the transverse band of the cruciform ligament
- **unstable**
- high risk of non-union

- **Type III**

- through the odontoid and into the lateral masses of C2
- relatively stable if not excessively displaced
- best prognosis because of the larger surface area

# Instability Criteria

- Dens displacement  $\geq 6\text{mm}$
- Fracture age  $\geq 6$  months
- Comminuted fracture
- Rupture of the transverse ligament
- Nonreducible or maligned fracture pattern
- Angulation  $\geq 10$  degrees
- Fracture gap  $\geq 2\text{mm}$
- Lateral mass gap  $\geq 2\text{mm}$
- Tx is early surgical fixation in order to prevent spinal cord injury

# XR s/p stabilization



# References:

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<https://gravitas.acr.org/ACPortal/GetDataForOneScenario?senariold=8070>

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