

AMSER Case of the Month

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75 year old with back pain and
shortness of breath after fall

LECOM



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Allegheny
Health Network

AMSER

Patient Presentation

- HPI: 75 yo F with shortness of breath, back pain, and chest pain two days after a fall down the stairs. Babinski sign is negative, and motor and sensation are intact in all extremities.
- Past medical Hx: Asthma, benign brain tumor, diabetes mellitus, diverticulitis, hypertension, neurogenic bladder
- Past surgical Hx: Nothing pertinent

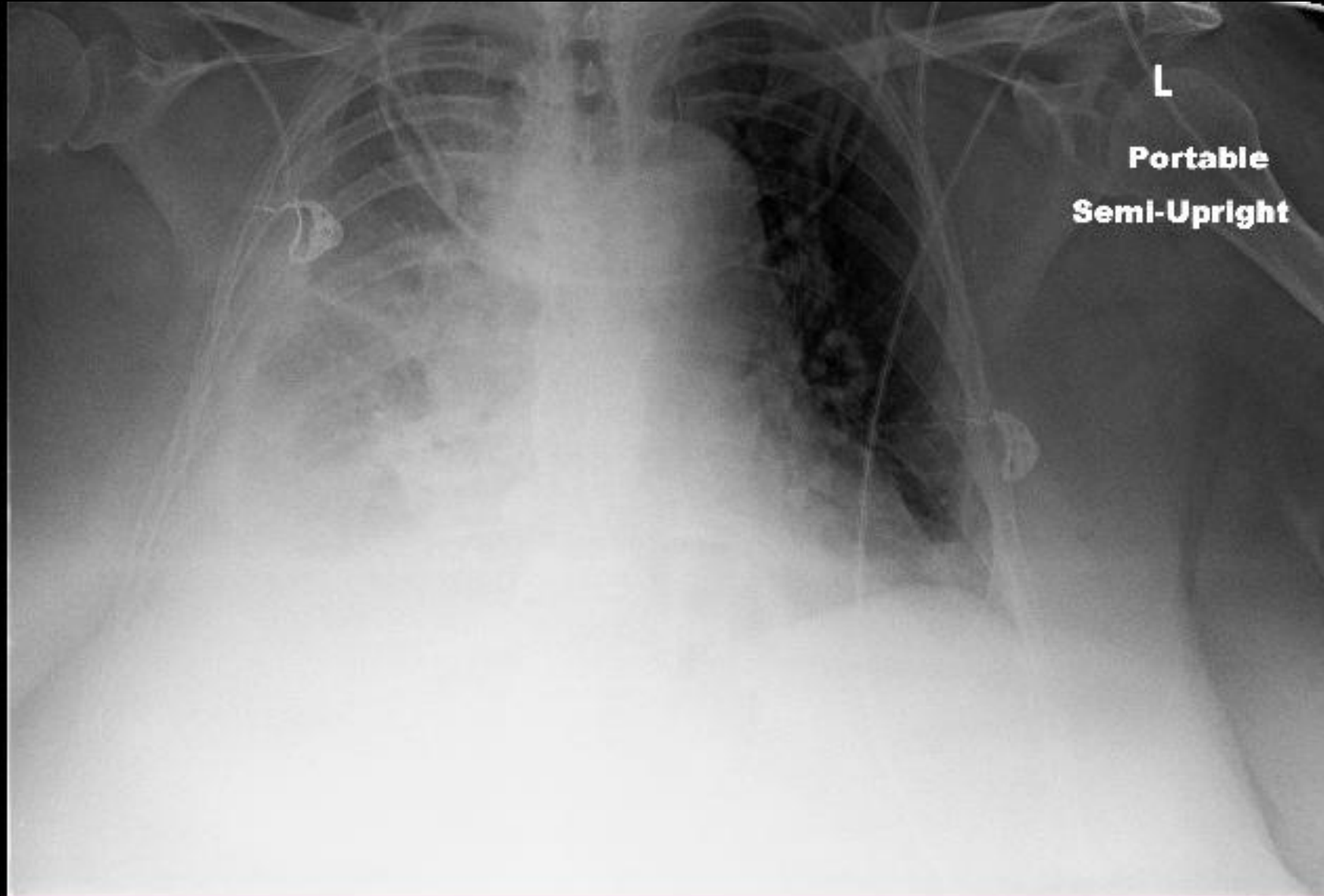
What Imaging Should We Order?

Appropriate initial imaging for blunt chest trauma with high energy mechanism

Imaging modality ordered

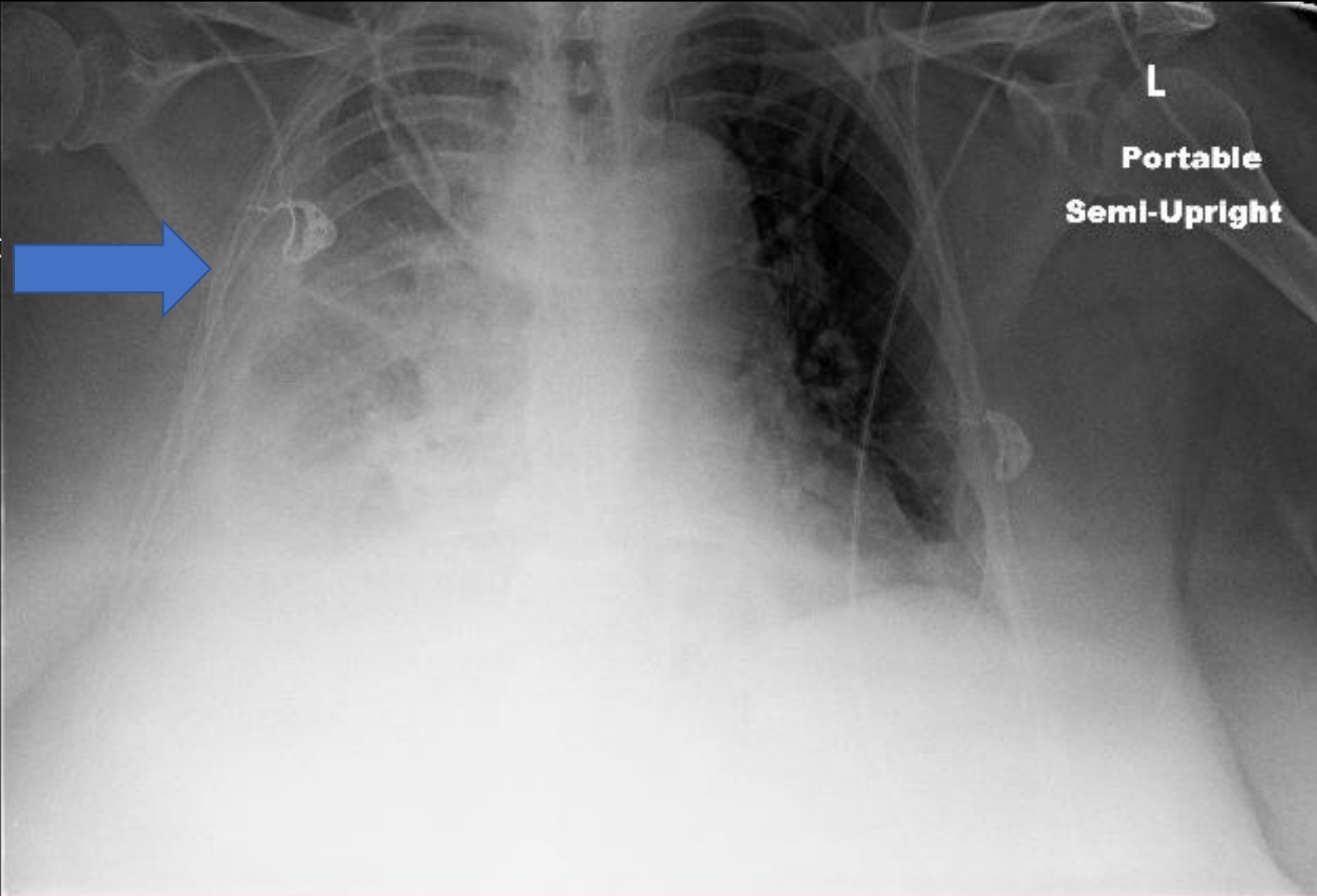
Radiologic Procedure	Rating	Comments	RRL*
X-ray chest	9	Chest x-ray and CT/CTA are complementary examinations.	⊗
CT chest with IV contrast	9	Ideally, this procedure should be performed with CTA. Chest x-ray and CT/CTA are complementary examinations.	⊗ ⊗ ⊗
CTA chest with IV contrast	9	Chest x-ray and CT/CTA are complementary examinations.	⊗ ⊗ ⊗
CT chest without IV contrast	5		⊗ ⊗ ⊗
US chest	5		○
CT chest without and with IV contrast	2		⊗ ⊗ ⊗
MRI chest without and with IV contrast	2		○
MRI chest without IV contrast	1		○
Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level

Initial Radiographic Findings



Initial Radiographic Findings

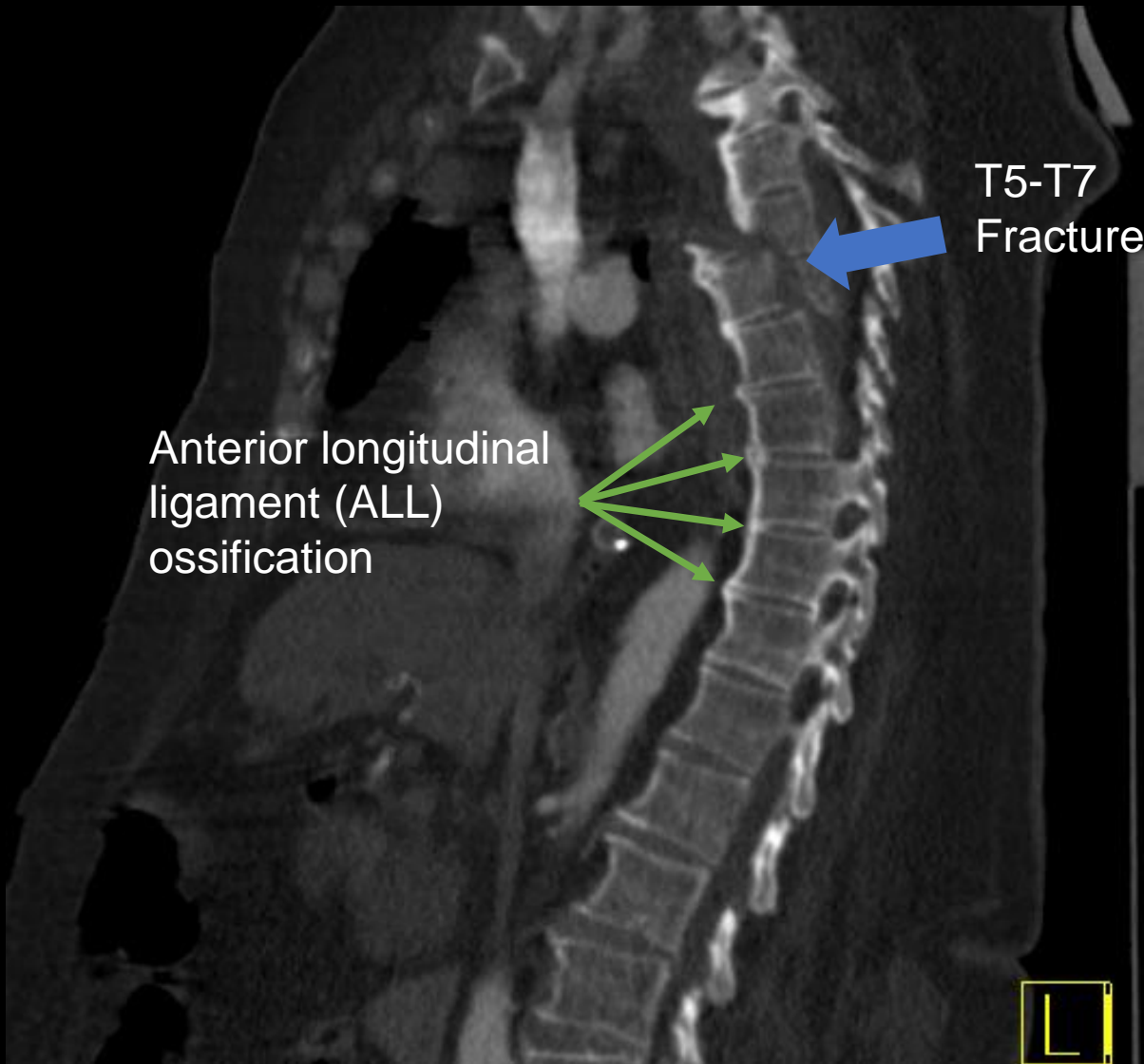
Large right
pleural effusion
and partial right
lung collapse



CT Findings



CT Findings



T5-T7
Fracture

Anterior longitudinal
ligament (ALL)
ossification

Oblique/horizontal fracture extending through the ossified anterior longitudinal ligament, T5, T6, as well as the posterosuperior aspect of the T7 vertebral bodies

Significant fracture displacement

3 column involvement is diagnostic of an unstable fracture

Initial Radiographic Findings



Initial Radiographic Findings

Hemorrhagic pleural effusion (*) with small focus of air (arrow).
Fracture of ribs 5-9 not shown



Final Dx:

T5-T7 Chalk stick fracture
secondary to trauma
and DISH (diffuse idiopathic skeletal hyperostosis)

Diffuse Idiopathic Skeletal Hyperostosis: Forestier Disease

- Diffuse idiopathic skeletal hyperostosis (DISH) is a common skeletal disorder where there is new bone formation at tendon and ligament osseous attachments
- Most common in the spine, but can occur in any part of the skeleton
- Mostly asymptomatic, but some patients may experience pain, stiffness, and reduced range of motion
- Etiology: Unknown - possible genetic, mechanical, and environmental contributions
- Epidemiology: Men > Women, incidence increases with age

Diffuse Idiopathic Skeletal Hyperostosis: Forestier Disease

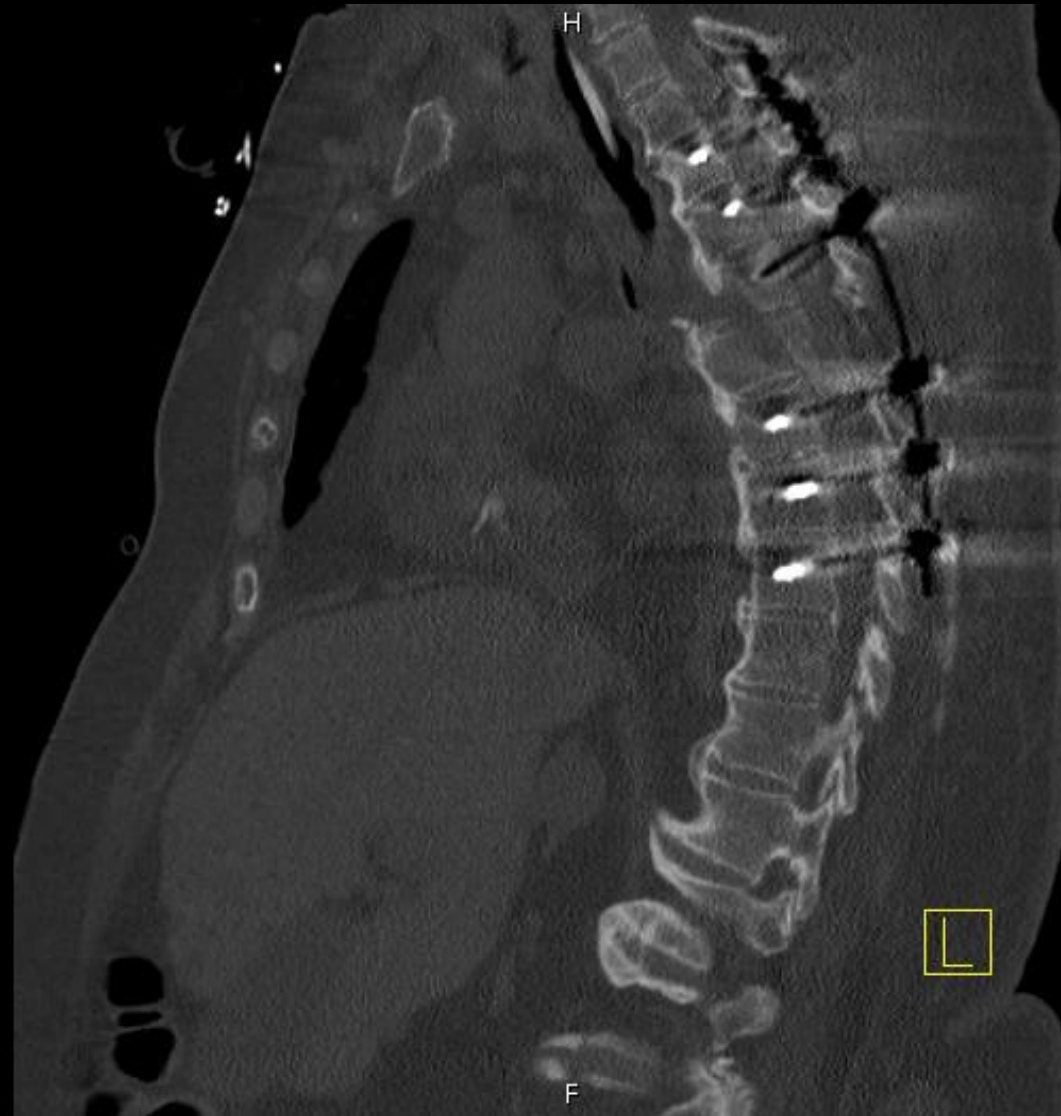
- Key diagnostic features: flowing anterior ossifications over 4 continuous vertebral bodies and relative preservation of disc height
- Increased risk of spine fractures, even with minor trauma
- Differential Diagnosis: Spondylosis, ankylosing spondylitis
 - Spondylosis – disc centric disease, anterior ossifications are rarely continuous across 4 vertebral bodies
 - Ankylosing spondylitis – thin syndesmophytes rather than bulky anterior ossifications, SI joint erosion/ankylosis
- Treatment: conservative, symptom management

DISH (Chalk Stick) Fracture

- DISH (chalk stick) fracture- traumatic unstable fracture of a fused spine, most common in the lower cervical and upper thoracic spine
- Fused spine disorders include – DISH, ankylosing spondylitis, ossification of posterior longitudinal ligament, and ligamentum flavum ossification
- Fused segment acts as a lever arm that applies greater force on the spine resulting in an increased likelihood of fracture
- Treatment- surgical consultation for assessment of neurologic injury and stabilization



Patient after surgical fixation



Posterior instrumented fusion of T3-T9, resulting in improved alignment and stabilization of T5-T7.

References:

ACR Criteria of Appropriateness: <https://acsearch.acr.org/docs/3082590/Narrative/>

Nascimento, Fábio A. et al. “Diffuse Idiopathic Skeletal Hyperostosis: A Review.” *Surgical Neurology International* 5.Suppl 3 (2014): S122–S125. PMC. Web. 6 July 2018.

Tomar, Suryapratap Singh. “Chalkstick Fracture: A Catastrophic Injury.” *Asian Journal of Neurosurgery* 13.2 (2018): 383–385. PMC. Web. 6 July 2018.