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

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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

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<th>Radiologic Procedure</th>
<th>Rating</th>
<th>Comments</th>
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<td>X-ray chest</td>
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<td>Chest x-ray and CT/CTA are complementary examinations.</td>
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<td>Ideally, this procedure should be performed with CTA. Chest x-ray and</td>
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<td>CT chest without IV contrast</td>
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<td>US chest</td>
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<td>CT chest without and with IV contrast</td>
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Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate

https://acsearch.acr.org/docs/3082590/Narrative/
Initial Radiographic Findings
Initial Radiographic Findings

Large right pleural effusion and partial right lung collapse.
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/
