71-year-old male presenting with neck and back pain from MVC

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Patient Presentation

HPI: 71-year-old male with PMHx of atrial fibrillation on Eliquis and HTN, presents to the ED after MVC. Complaining of back pain, neck pain, and chest pain. No loss of consciousness.

Vitals: BP 185/75, HR 60, RR 16, SaO2 93% on RA

PE: GCS 15. Inferior cervical and thoracic tenderness to palpation. No neurologic deficits noted.
What Imaging Should We Order?
Select the applicable ACR Appropriateness Criteria

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<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<td>CT cervical spine without IV contrast</td>
<td>Usually Appropriate</td>
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<td>Radiography cervical spine</td>
<td>May Be Appropriate</td>
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This imaging modality was ordered by the ER physician.
Findings (unlabeled)
Findings: (labeled)

Hyperdense material dorsally and ventrally within spinal canal resulting in thecal sac narrowing.

Circumferential high-density material in spinal canal concerning for epidural hematoma.

Sagittal Non-contrast CT

Axial Non-contrast CT
Findings (unlabeled)
Findings: (labled)

Type 2 dens fracture with approximately 2 mm posterior displacement of the dens

Acute C1 burst fracture involving the anterior tubercle, anterior arch, left anterior arch and lateral mass, left posterior arch, posterior arch, and right lateral arch

Sagittal Non-contrast CT

Axial Non-contrast CT
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Findings (unlabeled)
Findings (labeled)

Circumferential epidural hematoma (blue arrows) extending from approximately C1-T10 with associated moderate narrowing of the thecal sac within the cervical and thoracic spine.

Loss of fat suppression in epidural space due to blood products seen on T2 STIR (green arrows).
Final Dx:

Spinal Epidural Hematoma
Case Discussion

• Incidence of spinal epidural hematoma (SEH) is 1 per 1,000,000 per year

• 75% of spinal hematomas are epidural in origin, most commonly idiopathic (40% of cases)

• Initial clinical manifestation depends on level of spinal involvement however includes:
  • Acute onset back pain
  • Progressive neurologic symptoms (radicular pain, weakness, paraplegia, quadriplegia)
Imaging Recommendations

- MRI is the modality of choice for patient with acute back pain and concern for SEH
  - Allows for hematoma detection within epidural space
  - Delineation of exact levels
  - Evaluation of spinal cord compression
  - Other soft tissue injury

- CT is often done before MRI, particularly in trauma settings
  - Careful evaluation of the spinal canal on initial CT may lead to early identification, though occasionally a dilated epidural venous plexus may mimic hematoma
Management

• For symptomatic patients who are medically stable:
  • Urgent surgical decompression, most commonly decompressive laminectomy
  • Neurologic prognosis may be a function of degree of impairment at diagnosis
• In absence of neurologic deficit or uncontrollable pain, SEH can be managed conservatively
• In our patient, fractures along the cervical spine with associated SEH were managed non-operatively with halo vest providing stability.
References:


