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IMAGES

Comparison of thoracic epidural hematoma visualized by computed tomography *versus* magnetic resonance imaging

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Epidural hematoma leading to spinal cord compression is a rare complication associated with epidural analgesia. Prompt diagnosis and intervention are critical to a favourable neurologic outcome. Magnetic resonance imaging (MRI) is currently the gold standard for diagnosis of spinal epidural hematoma. Nevertheless, prior to MRI, computed tomography (CT) was the predominant imaging modality. In this unusual case, both imaging techniques were utilized to diagnose a thoracic epidural hematoma, producing a side-by-side comparison of these two imaging techniques.

A patient complained of new onset lower extremity weakness two days following an uneventful epidural catheter insertion at the 8th vertebral level for analgesia following 5th-11th right-sided rib fractures. An MRI machine was not immediately available, so the patient underwent a CT scan revealing a thoracic epidural hematoma extending from the T5 to T9 vertebral levels (Figure A and B). An operating room and surgeon were not immediately available for hematoma evacuation, but an MRI scanner had become available, so the patient underwent thoracic spine MRI to further characterize the hematoma and spinal cord compression (Figure C–F). The patient subsequently underwent hematoma evacuation with complete resolution of symptoms.

In this case, CT permitted diagnosis of an epidural hematoma; however, the improved clarity of the MRI image is a good example of why this modality is currently preferred. When comparing the MRI to CT imaging, the boundaries of the hematoma are much more easily visualized, which may facilitate surgical planning. Additionally, ischemia secondary to compression in the spinal cord can be detected on MRI but not CT, and such ischemic changes portend a worse prognosis. Finally, the improved clarity associated with MRI may also lead to diagnosis of a smaller hematoma that could easily be overlooked on CT imaging. These images show that, when MRI is not available, CT may be a viable alternative.

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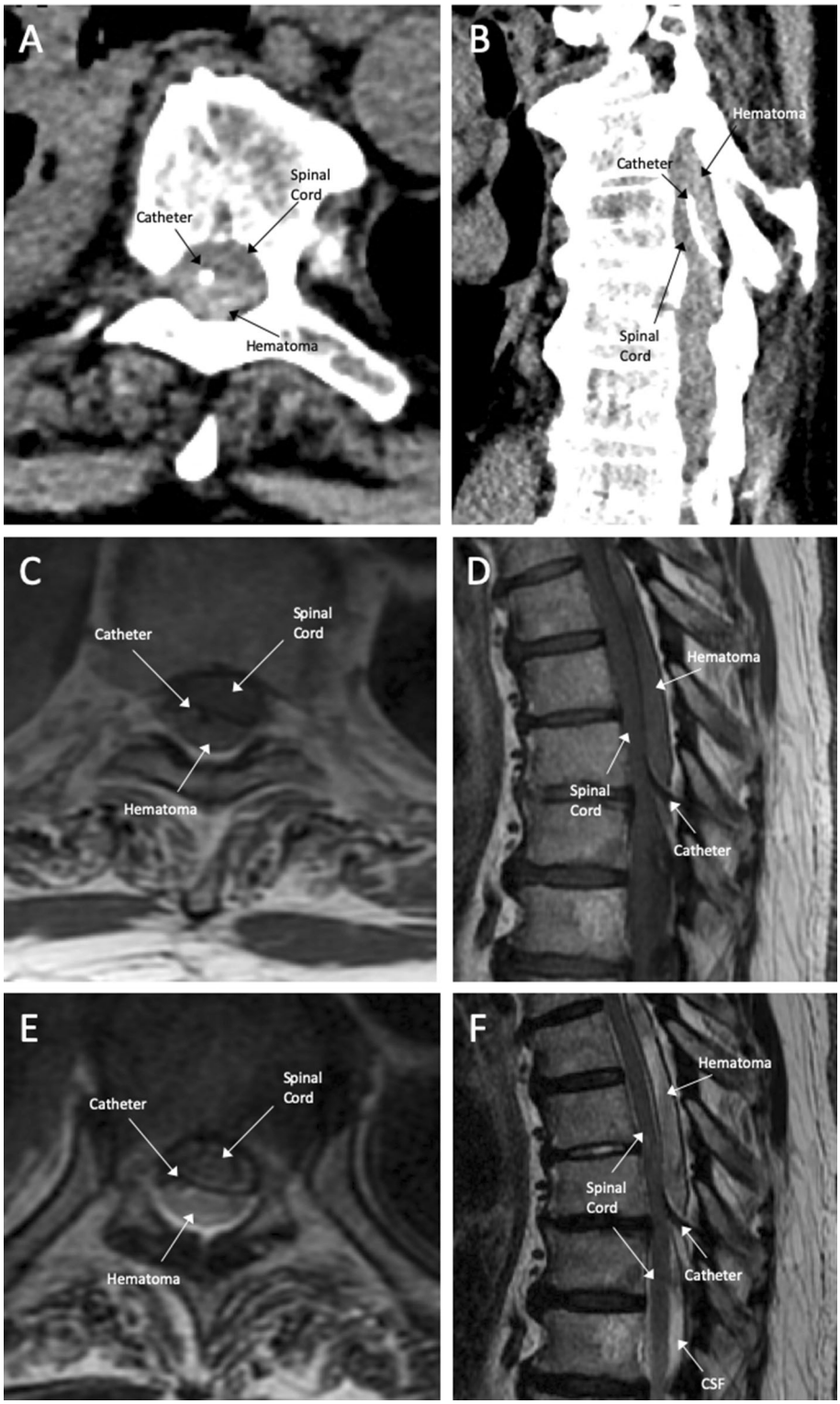

Figure Epidural hematoma in the same patient visualized by computed tomography *versus* magnetic resonance imaging. (A) axial and (B) sagittal computed tomography planes show the epidural hematoma as a slightly more radiopaque structure within the spinal canal compared to the spinal cord. Comparing the epidural hematoma visualization using magnetic resonance T1-weighted (C) axial and (D) sagittal images to T2-weighted (E) axial and (F) sagittal images, the T2-weighted images show greater discrimination between the hematoma and spinal cord. The epidural hematoma, spinal cord, and epidural catheter are labeled in all images. Cerebrospinal fluid (CSF) is labeled in the T2-weighted sagittal image.

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