


Case Image

Traumatic complete medulla/cervical spinal cord transection due to atlanto-occipital dislocation with atlanto-axial subluxation

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A 78-year-old woman was admitted to our emergency department after falling down the stairs. She presented with a Glasgow Coma Scale score of 3, bradypnea (respiratory rate, 8/min), and no pupillary reaction to light. Head computed tomography (CT) showed no obvious abnormality, but cervical CT showed atlanto-occipital dislocation (AOD) and atlanto-axial subluxation (AAS) characterized by widening the atlanto-occipital joint and the distance between C1 and C2 (Fig. 1A,B). Magnetic resonance imaging (MRI) revealed complete medulla/upper cervical cord transection. Additionally, it suggested tears in the tectorial membrane and transverse ligament, and the enlargement of supradental space (Fig. 1C). On day 2, the patient regained consciousness and was able to communicate using eye signals; however, she exhibited quadriplegia and no spontaneous breathing, making it difficult to wean her off the ventilator. She continued wearing a neck brace and was transferred to another hospital for rehabilitation on day 18.

This case highlights an important clinical issue: considering the possibility of neck injury, and not just brain injury, as a differential diagnosis for posttraumatic coma. It is important to evaluate cervical CT thoroughly for cervical dislocation, such as AOD and AAS, using the appropriate diagnostic parameters and, if needed, MRI should be performed.¹⁻³

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DISCLOSURE

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Registry and registration no. of the study/trial: N/A.

Animal studies: N/A.

Conflict of interest: None.

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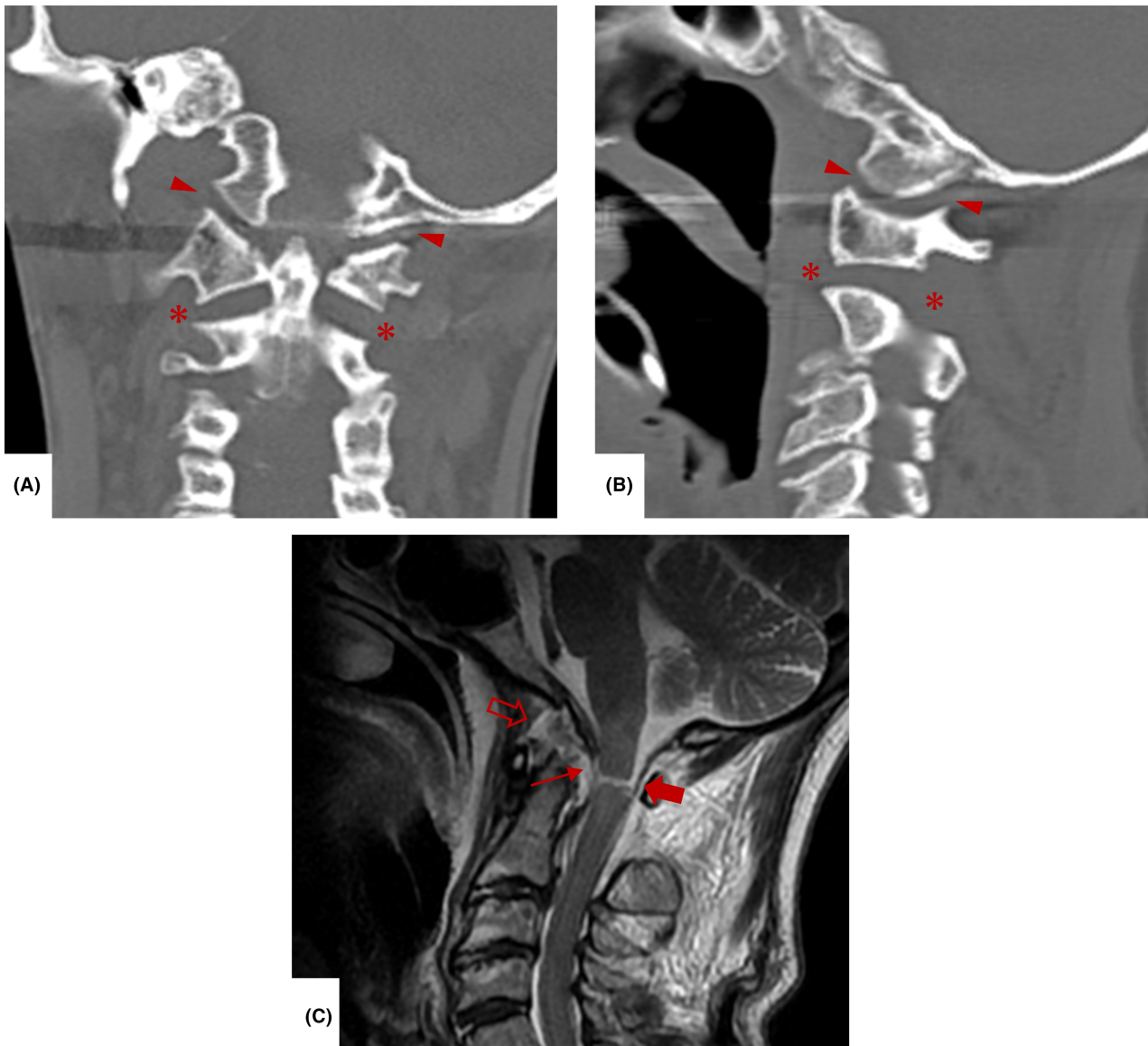


Fig. 1. (A,B) Sagittal and coronal computed tomography scans demonstrate diastasis of the occiput on C1 (arrowheads) and widening of the distance between C1 and C2 (asterisks). (C) Sagittal T2-weighted MRI sequence demonstrates complete transection of medulla/upper cervical spinal cord, enlargement of the supradental space (open arrow) and tears in the tectorial membrane and transverse ligament (thin arrow).