

IMAGES IN EMERGENCY MEDICINE

Trauma

Hypotension after a motor vehicle accident

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1 | PATIENT PRESENTATION

A 54-year-old man was involved in a high-speed motor vehicle collision where the patient was struck on the driver's side. The patient was found unresponsive and without pulses by emergency medical services who started advanced cardiac life support (ACLS) and placed a supraglottic airway. The patient arrived at the emergency department in pulseless electrical activity arrest, and ACLS was resumed. Multiple rounds of cardiopulmonary resuscitation were performed, multiple rounds of epinephrine were administered, and bilateral chest tubes were placed. Return of spontaneous circulation was obtained after \approx 25 minutes. The secondary survey was notable for edema and mottling of the skin of the face, a hematoma over the left side of the neck with accompanying seatbelt signs, absence of cervical spine step-offs or deformities, and absence of sphincter tone. Computed tomography pan scan was notable for complete dissociation of C6 from C7 with severe distraction measuring 3.6 cm craniocaudally (Figures 1–3), a large C2 to C3 spinal cord intraparenchymal hematoma with presumed complete cord traction–transection, and a transected and occluded left vertebral artery at the level of the first rib with largely associated hematoma formation within the deep neck at this level with active extravasation (Figure 3).

2 | DIAGNOSIS

2.1 | Traumatic subaxial C6 to C7 complete vertical dislocation and C2 to C3 cord transection with intraparenchymal hematoma

In the United States, a plurality of spinal cord injuries are attributed to motor vehicle collisions, with life expectancies for patients who sus-

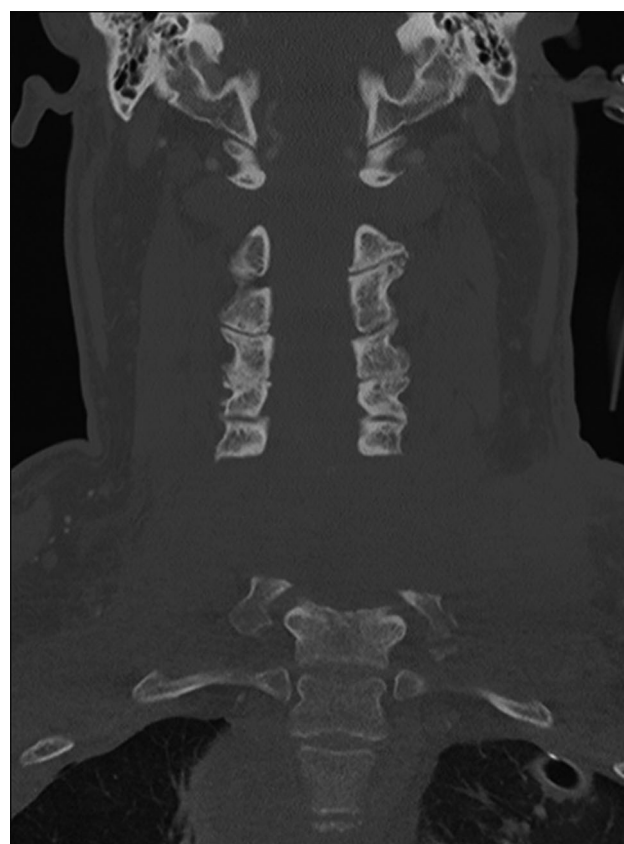


FIGURE 1 Coronal computed tomography scan of the cervical spine without contrast showing severe subaxial cervical distraction injury, C6 from C7, measuring 3.6 cm

tain these injuries being significantly lower than that of the general population.¹ Vertical cervical distraction injuries of the spine are rare

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FIGURE 2 Sagittal computed tomography scan of the cervical spine without contrast showing severe subaxial cervical distraction injury, C6 from C7, measuring 3.6 cm

but can be devastating, resulting in death, paralysis, spinal cord injury, and vascular injury.^{2,3} This patient suffered multiple traumatic injuries, including profound neck injuries, and was admitted to the trauma surgical intensive care unit. Neurosurgery, orthopedic spine surgery, and vascular surgery were all consulted and agreed that there was no role for surgical intervention. After discussion with the family, the patient was transitioned to comfort care and terminally extubated.

REFERENCES

1. Stein DM, Knight WA. Emergency neurological life support: traumatic spine injury. *Neurocrit Care*. 2017;27:170-180.



FIGURE 3 Coronal computed tomography (CT) scan of the CT angiography of the neck with contrast showing severe subaxial cervical distraction injury, C6 from C7, measuring 3.6 cm

2. Miao DC, Wang F, Shen Y. Immediate reduction under general anesthesia and combined anterior and posterior fusion in the treatment of distraction-flexion injury in the lower cervical spine. *J Orthop Surg Res*. 2018;13:126.
3. Sharma M, Sieg E. Traumatic vertical cervical distraction injury. *World Neurosurg*. 2019;130:339-340.

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