

IMAGES IN EMERGENCY MEDICINE

Nontrauma and Medical

Woman with agonal breathing

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1 | PATIENT PRESENTATION

A 42-year-old healthy woman with cerebral palsy, oriented consciousness, and partial dependence in daily activities at baseline reported gradual decrease in muscle strength in all her limbs for 6 months. The patient became comatose with agonal breathing unexpectedly during the night hours without any warning. Initial clinical presentation showed a very slow respiratory rate of 8 times/min and $SpO_2 = 92\%$ under non-rebreathing mask covering. Atrial blood gas test revealed hypercapnic respiratory acidosis (pH, 6.9; $PCO_2 > 200$ mmHg). Intubation was performed immediately. Chest radiography showed no active lesions (Figure 1). Her consciousness returned to baseline a few hours after intubation, but she developed quadriplegia. Brain computed tomography showed no obvious lesions.

2 | DIAGNOSIS: Non-traumatic odontoid fracture with cord indentation

Brain magnetic resonance imaging (MRI) revealed no obvious lesion but incidentally revealed C2 odontoid process fracture with cord indentation (Figure 2). Cervical MRI showed displaced odontoid process fracture with cord compression, causing myelopathy at C2–C4 levels (Figure 3).

It is challenging to diagnose spinal cord injury (SCI) in the absence of trauma history.¹ Non-traumatic SCI is a rare neurological emergency.² There are few case reports of spontaneous atraumatic cervical fracture due to tuberculosis or rheumatoid arthritis.^{3,4} High-level SCI causes impairment of respiratory muscles and reduces vital capacity and chest wall compliance. It also influences the respiratory drive, lead-



FIGURE 1 Chest radiograph showing proper endotracheal tube insertion site without active lung patch.

ing to hypercapnia.^{5,6} SCI is an often forgotten but important cause of central nervous system depression in patients with hypercapnic respiratory failure in emergency settings. We present a case of atraumatic odontoid fracture, resulting in myelopathy and hypercapnic respiratory failure.

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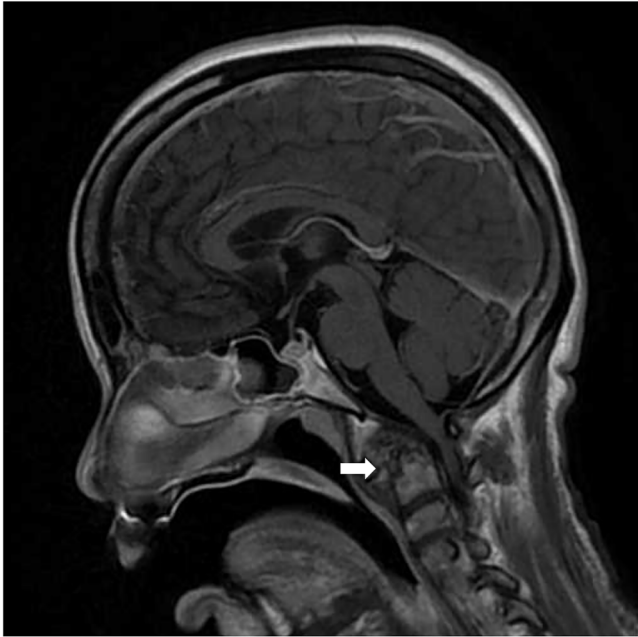


FIGURE 2 Brain T1 flair sagittal magnetic resonance imaging incidentally revealed C2 odontoid process fracture (arrow).

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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FIGURE 3 Cervical T2 weighted sagittal magnetic resonance imaging revealed displaced odontoid process fracture (asterisk), with indentation of the spinal cord, causing C2–C4 myelopathy (arrowheads).

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