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Figure 1. Computed tomographic scan scout image.

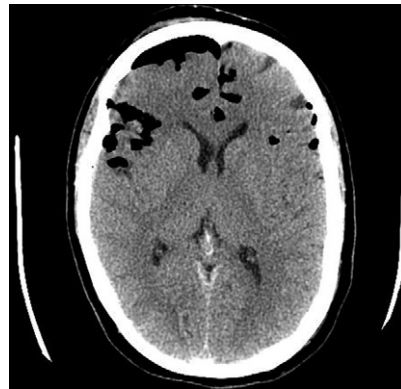


Figure 2. Computed tomographic scan axial image.



Figure 3. Computed tomographic scan scout image.

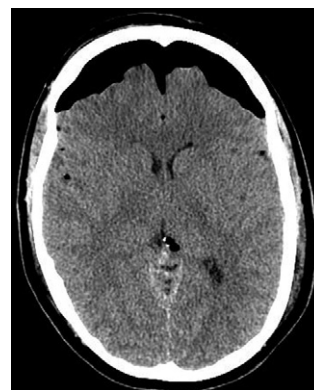


Figure 4. Computed tomographic scan axial image. Used with permission of James C. Suozzi, DO, University of Connecticut/Hartford Hospital, Department of Emergency Medicine, Hartford, CT.

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A 45-year-old female helmeted motorcyclist struck a guardrail, sustaining loss of consciousness. On arrival, she had a respiratory rate of 18 breaths/min, pulse rate of 96 beats/min, blood pressure of 131/84 mm Hg, and an oxygen saturation of 99%. She was confused, with a Glasgow Coma Scale score of 14, and complained of neck and left-sided chest pain. On examination, she had tenderness of the cervical spine and left chest wall. A head computed tomographic (CT) scan (Figures 1 and 2) was performed. After transfer to the ICU, her confusion progressed to delirium, with loss of orientation to person, place, and time. A second head CT (Figures 3 and 4) was then performed.

*For the diagnosis and teaching points, see page 573.
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DIAGNOSIS

Traumatic tension pneumocephalus. Defined as progressive air-trapping in the cranium, causing mass effect and neurologic deficits, tension pneumocephalus is a rare adverse effect of craniofacial trauma.¹ Although 75% of cases result from acute trauma, other causes include tumors, infection, surgery, spinal anesthesia, and positive pressure ventilation.² Development of early traumatic tension pneumocephalus is virtually diagnostic for a craniofacial fracture, whereas late or nontraumatic development is suggestive of a continual cerebrospinal fluid leak or fistula.³

Tension pneumocephalus can be distinguished from simple pneumocephalus on CT by the Mount Fuji sign⁴ (Figure 4), identified as bilateral frontal lobe compression with interhemispheric separation resembling Mount Fuji's volcanic peak. Untreated, tension pneumocephalus can lead to cognitive impairment, cerebral ischemia, herniation, coma, and death. Treatment ranges from supine bed rest to craniotomy. The most common reported emergency department interventions are burr holes, needle aspiration, and medical intracerebral pressure reduction.¹

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DIAGNOSIS

Hair artifact. Despite the reassuring physical examination results, the portable chest radiograph prompted a differential that included aspiration pneumonitis and early acute respiratory distress syndrome. Because the patient was stable, he was sent to radiology for a formal posterior-anterior radiograph (Figure 2).

On realizing the discrepancy between radiographs, the radiology technician who performed the initial portable radiograph admitted the patient was uncooperative and the plate had been positioned behind his long, braided hair. His head computed tomography (CT) scan (Figure 3) confirmed our suspicion that dreadlocks were obscuring his lung fields.

Hair artifact is commonly encountered in the dental literature¹ and has been described in chest radiography,² in which braided hair has been confused for tuberculosis.³ This phenomenon is rarely observed in hospitals because of the strict protocols followed by radiology technicians. However, in an emergency department with uncooperative patients, it is sometimes difficult to obtain proper positioning and preparation before chest radiography. Emergency physicians should remain vigilant, especially when there is disagreement between radiologic findings and physical examination results.

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