

**IMAGES IN EMERGENCY MEDICINE****Trauma**

# Roadside head trauma in a middle-aged man

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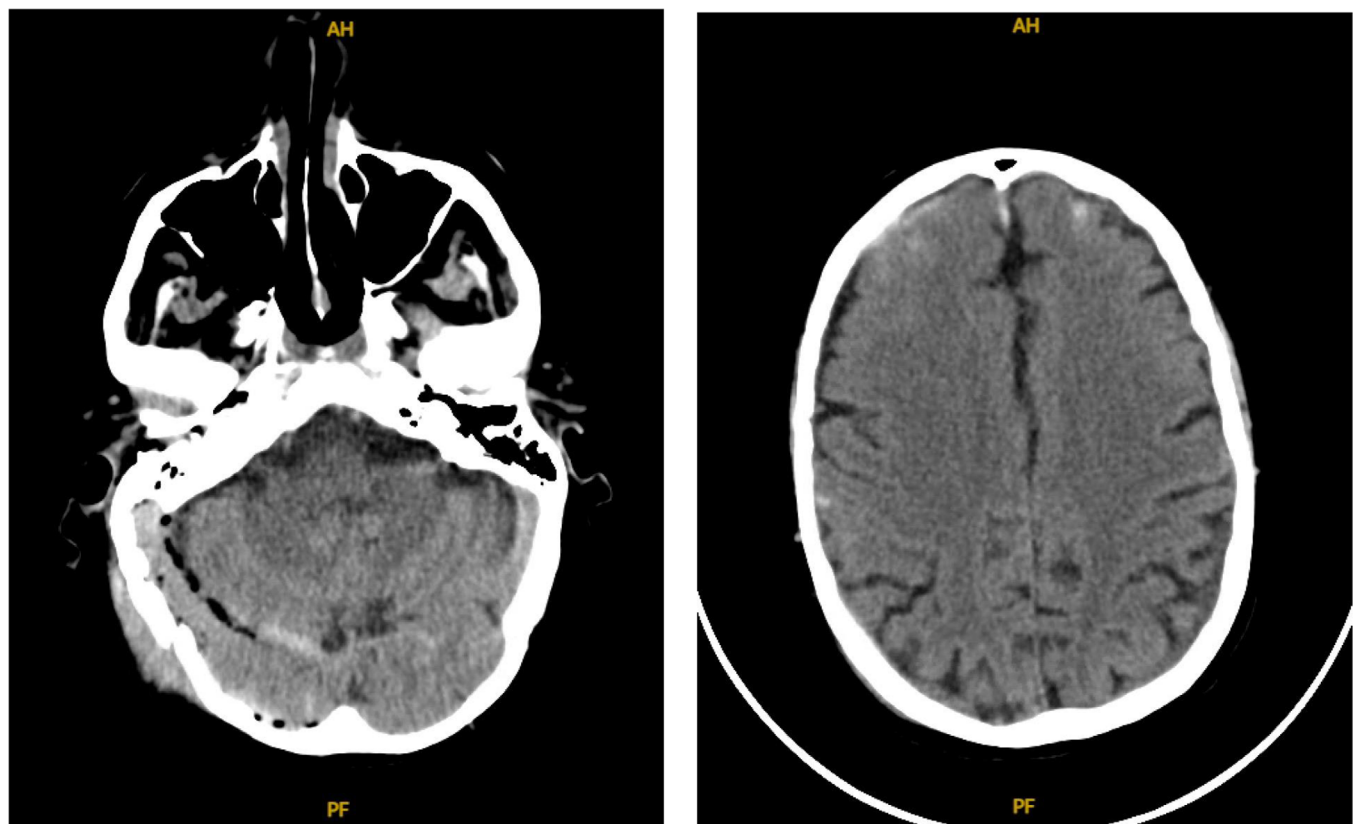
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Email: [i.michael.crimmins@gmail.com](mailto:i.michael.crimmins@gmail.com)**1 | PATIENT PRESENTATION**

A middle-aged man presented to the emergency department as a trauma activation after being found on the roadside with head trauma. Additional history was unavailable. His vital signs were unremark-

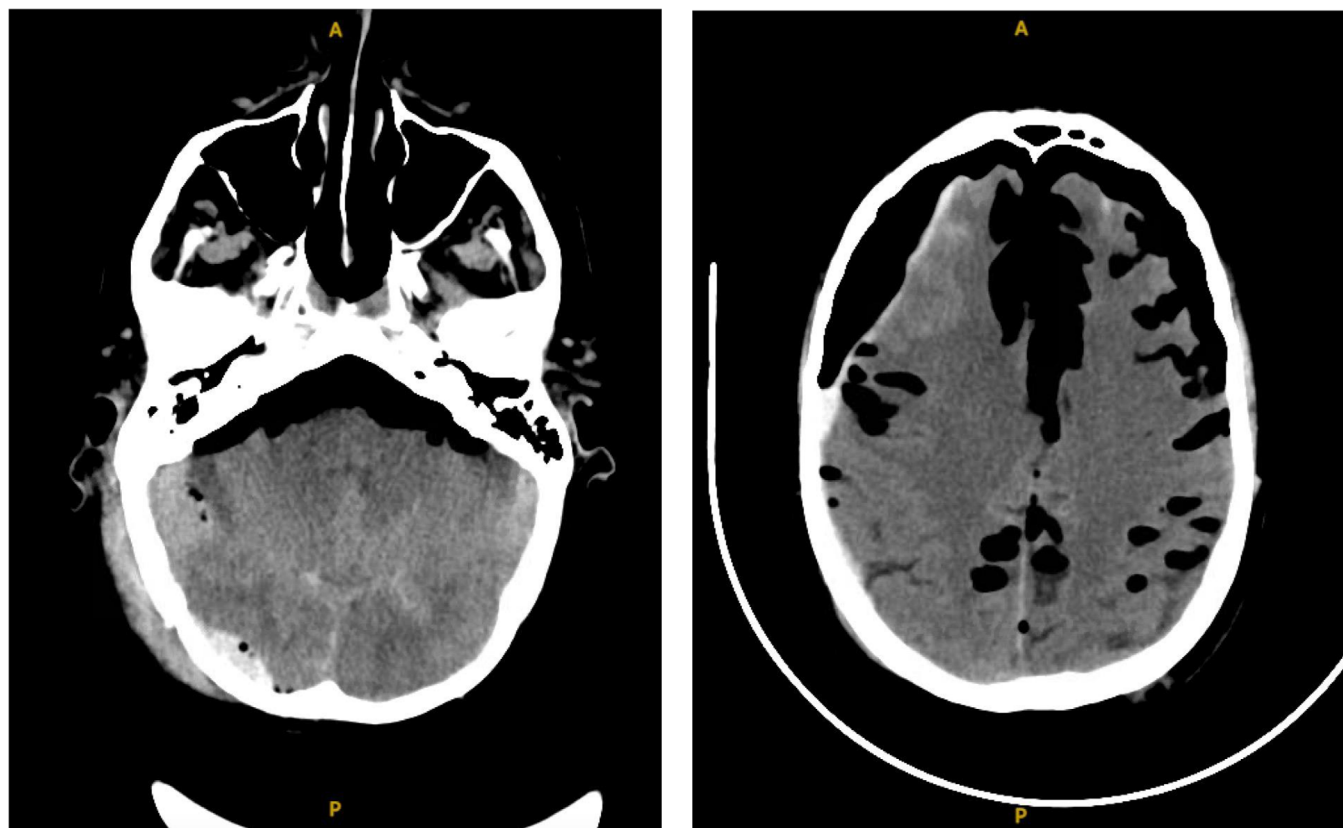
able. Examination was notable for a combative patient, restrained by emergency medical services with a Glasgow Coma Scale (GCS) of 13, symmetric extremity movement and blood in the right external ear canal precluding visualization of his tympanic membrane. His initial imaging demonstrated a parieto-occipital calvarial fracture,



**FIGURE 1** Initial axial computed tomography images demonstrating multifocal hemorrhages and pneumocephalus.

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**FIGURE 2** Repeat axial computed tomography images demonstrating worsening pneumocephalus with Mount Fuji sign.

temporal bone fracture, small volume pneumocephalus, and multifocal hemorrhages (Figure 1). His examination progressively worsened with his GCS declining to 11, prompting repeat non-contrast computed tomography (CT) scan of the brain.

## 2 | DIAGNOSIS

### 2.1 | Traumatic tension pneumocephalus

His repeat CT demonstrated worsening pneumocephalus with stable to mildly increased bleeding (Figure 2). Neurosurgery placed a subdural evacuating port system and recommended intubation to divert the positive pressure of his respirations. The conservative management of tension pneumocephalus includes supplemental oxygenation, supine positioning, and antibiotics, as indicated for skull fracture.<sup>1</sup> Although repeat imaging demonstrated markedly decreased pneumocephalus, his intracranial hemorrhages eventually worsened. Ultimately, the patient was palliatively extubated and passed away.

Described as early as 1913,<sup>1</sup> pneumocephalus is the presence of intracranial air.<sup>2</sup> It can occur through multiple mechanisms, including blunt trauma to the skull base and penetrating trauma.<sup>3,4</sup> Tension pneumocephalus occurs when the intracranial air results in mass effect

on the brain parenchyma. This can result in significant neurological symptoms.<sup>3</sup> The most well-described CT finding of tension pneumocephalus is the “Mount Fuji sign,” where the intracranial air causes the frontal lobes to separate.<sup>5</sup>

## REFERENCES

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