Epidural Pneumatosis and Diffuse Soft Tissue Free Air As a Complication of Diabetic Ketoacidosis

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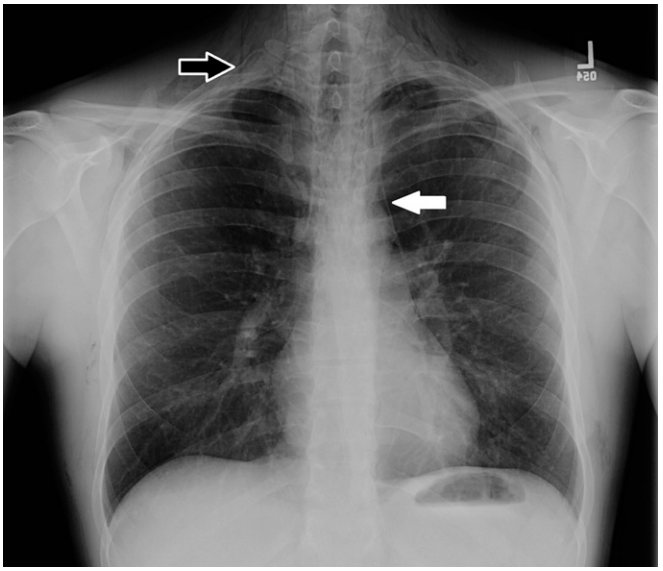

Figure 1. Chest radiograph showing subcutaneous emphysema (*black arrow*) and pneumomediastinum (*white arrow*).

Figure 2. Chest computed tomography image showing pneumomediastinum (*white arrow*), subcutaneous emphysema (*thick black arrow*), and epidural pneumatosis (*thin black arrow*).

A 23-year-old male with type 1 diabetes presented to the emergency department with insulin nonadherence, vomiting, and sharp neck pain. Laboratory values were consistent with diabetic ketoacidosis (DKA). The physical exam revealed diffuse crepitance around the neck and chest wall. A chest X-ray (Figure 1) showed subcutaneous emphysema (*black arrow*) and pneumomediastinum (*white arrow*). A chest computed tomographic scan (Figure 2) revealed extensive pneumomediastinum (*thin white arrow*) and soft tissue emphysema involving the chest wall, paraspinal musculature, soft tissues (*thick black arrow*), and epidural pneumatosis (*thin black arrow*). Rarely reported in the English-language medical literature (1–4), diffuse soft tissue free air associated with DKA is typically benign and likely caused by alveolar rupture from forceful vomiting or Kussmaul respiration (1). Epidural pneumatosis occurs when free air tracks through fascial planes in the brachial plexus, axillary arteries, intercostal nerves, or intervertebral foramina. Our patient's history of emesis raised concern for esophageal perforation, but water-soluble contrast swallow evaluation was normal. The patient fully recovered with conservative management.

Author disclosures are available with the text of this article at www.atsjournals.org.

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