

## Letter to the Editor

### Pneumomediastinum and retropharyngeal emphysema as complications of food-related anaphylactoid reaction

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Sir,

Pneumomediastinum with or without retropharyngeal emphysema is a life-threatening complication frequently associated with acute asthma attack (1). However, such a complication has not been reported in patients with laryngeal edema and bronchospasm due to allergic food reactions. We report herein a patient with pneumomediastinum and retropharyngeal emphysema after ingestion of stewed herb meat soup.

A 43-year-old woman without a history of asthma presented to the emergency department with abrupt onset of hoarseness,

chest pain and dyspnea shortly after a large meal of sparerib stewed with multiple herbs. On presentation, her blood pressure was 176/106 mmHg and her respiratory rate was 22 breaths/min. She was in apparent respiratory distress with a pulse oxygenation of 93%. A loud inspiratory stridor and diffuse wheezing were noted and crepitation could be felt on her neck. Laboratory examination revealed leukocytosis (16,510/ $\mu$ l) with 84.5% neutrophils. Laryngoscopic examination showed an edematous swelling of the larynx and vocal cord. The lateral view of a neck radiograph showed a streak of air lucency behind the trachea (Fig. 1A, arrow). Computed tomography (CT) scan of the neck and chest showed pharyngeal and laryngeal swelling (Fig. 1B, arrowhead), cervical and retropharyngeal emphysema (Fig. 1B, arrow) and pneumomediastinum (Fig. 1C, arrow). The disease rapidly progressed to respiratory failure despite subcutaneous epinephrine, intravenous steroid, inhalational bronchodilator, epinephrine and budesonide treatment. In addition, hypotension (95/63 mmHg) developed 12 h after

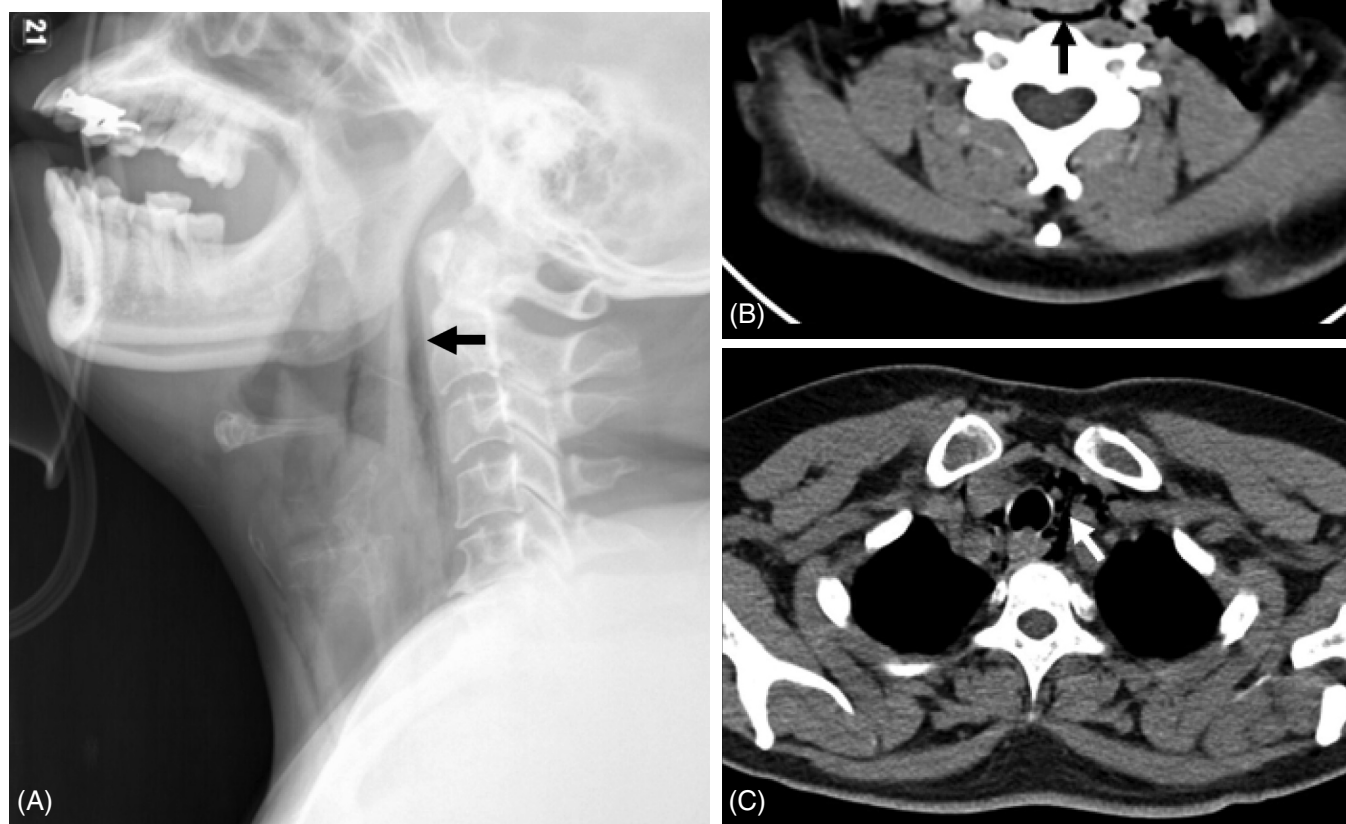


Fig. 1. (A) Neck radiography, lateral view. (B) Computed tomography, neck. (C) Computed tomography, chest.

hospitalization. Under the impression of tension pneumomediastinum, she underwent endotracheal intubation and surgical mediastinal air decompression. The post-operative course was smooth, and the patient was weaned from the ventilator 12 days after operation. Laryngeal swab specimen for virus and bacterial culture, mediastinal tissue biopsy for bacterial culture and stain, and serology for herpes simplex virus were all negative.

Anaphylaxis is the most severe form of allergic reaction. The triggering allergens are numerous, including the suspicious agent, herbs, in this patient (2). The patient was suspected of having an anaphylactic reaction to the ingested herb on the basis of the short incubation time between herb exposure and full-blown typical clinical manifestations, and the exclusion of other possible infectious etiology causing acute laryngitis/epiglottitis. However, rechallenge test was thought to be unethical in this patient because her presentation was severe and life-threatening.

Pneumomediastinum and retropharyngeal emphysema are generally self-limited (3), but, on rare occasions, they may progress to tension pneumomediastinum with hemodynamic compromise or airway obstruction requiring emergency airway protection and surgical decompression (4). Asthma and foreign body aspiration are well-established causes of pneumomediastinum (1, 5). The pressure gradient resulting in air leakage from the pulmonary alveolus is thought to account for the development of pneumomediastinum (1, 5). We believe that the bronchospasm and laryngeal edema in our patient may share a similar mechanism, in which the air pressure gradient produced an air leak, which spread into the bronchoalveolar sheath and passed along the bronchi to the mediastinum or cervical potential space (5).

In summary, in patients with anaphylaxis and severe laryngeal edema or bronchospasm, pneumomediastinum should be considered in those with palpable subcutaneous emphysema, retrosternal pain and respiratory symptoms not amenable to initial medical treatment. Chest and neck radiograph serve as sensitive screening examinations, but CT evaluation is warranted in suspected cases to define the extent and location of air accumulation. Although pneumomediastinum is generally

self-limited, potentially fatal tension pneumomediastinum should be considered in those with rapid and unexplainable hemodynamic deterioration and airway compromise. Immediate air decompression is the only way to ensure survival.

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