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# Ulcerative colitis complicating pneumomediastinum, subcutaneous emphysema and pneumothorax

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*Dear Editor,*

A 17-year-old male with a one-month history of ulcerative colitis (UC) was on high-dose intravenous steroid therapy. His symptoms improved but worsened while tapering the steroid dose. He presented to our hospital with neck pain and fever after vomiting. On examination, there was tenderness in the lower abdomen. A snowflake

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sensation was noted in the neck and chest sounds were normal. Laboratory examination showed white blood cells of 19,400 /µl with neutrophil count of 93.2 %, hemoglobin of 14.7 g/dl, and C-reactive protein of 13.78 mg/dl. Cytomegalovirus antigenemia was negative. A chest radiograph showed extensive subcutaneous emphysema in the chest and neck (Fig. 1A). Computed tomography (CT) scans showed extensive subcutaneous emphysema in the neck, shoulders and axilla, as well as pneumomediastinum and pneumothorax. In addition, thinning of the lower esophageal wall was observed without obvious evidence of perforation (Fig. 1B-D). A diagnosis of pneumomediastinum and subcutaneous emphysema and left pneumothorax with exacerbation of UC was made, and the patient fasted and was treated with antibiotics to prevent progression to mediastinitis. Prednisolone infusion and intensive granulocyte and monocyte adsorption apheresis (GMA) were started for exacerbation of UC and his symptoms gradually improved. The radiological findings of pneumomediastinum and subcutaneous emphysema and left pneumothorax showed improvement. GMA was completed in five sessions, and he was discharged with the addition of azathioprine and a reduced dose of prednisolone. He remained in remission on azathioprine.

**Discussion**

UC is a chronic inflammatory bowel disease (IBD) associated with extraintestinal manifestations (EIM), including spinal arthritis, erythema nodosum, and primary sclerosing cholangitis. Very few cases have been complicated by pneumomediastinum. Retroperitoneal air was shown in nearly half of these cases (1). Some possible causes include: a) blunt trauma to the chest; b) increased alveolar pressure and rupture from coughing, straining, or vomiting; c) gas-forming organisms in the neck, or chest; and d) a complication of esophageal or colonic instrumentation (2). In IBD patients, the activated inflammatory cells in the bowel tissues are capable of producing circulating proinflammatory cytokines that can induce lung parenchymal damage (3). In our case, the increase in alveolar pressure due to vomiting and systemic inflammation-related

pleural or esophageal damage may cause pneumomediastinum. Prevention of progression to mediastinitis and treatment of exacerbated UC are contradictory. GMA was successful in our patient because it was not an immunosuppressive therapy. Our case highlights that rare EIM may complicate exacerbation of UC.

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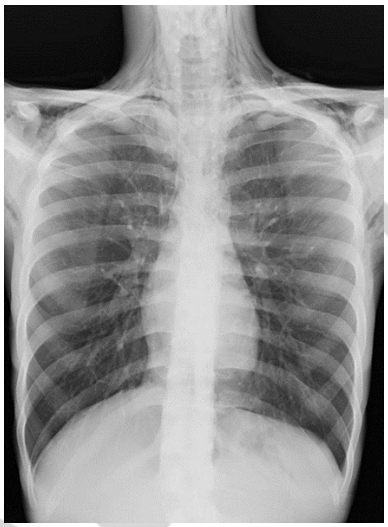

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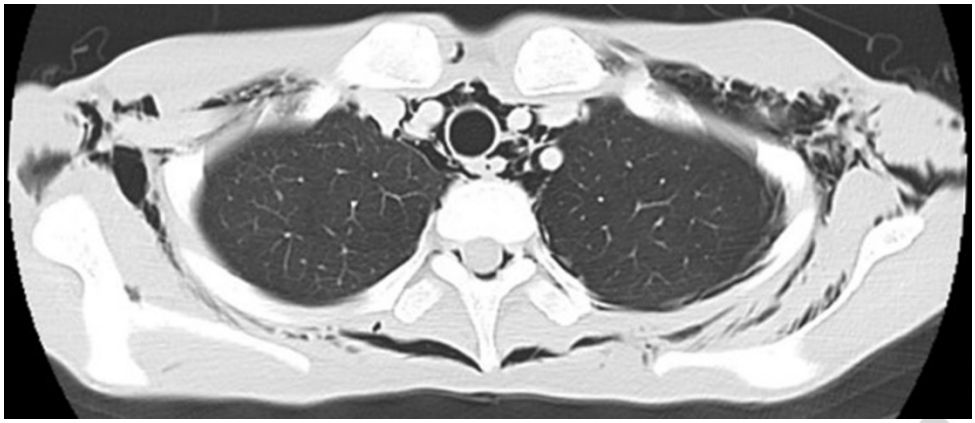

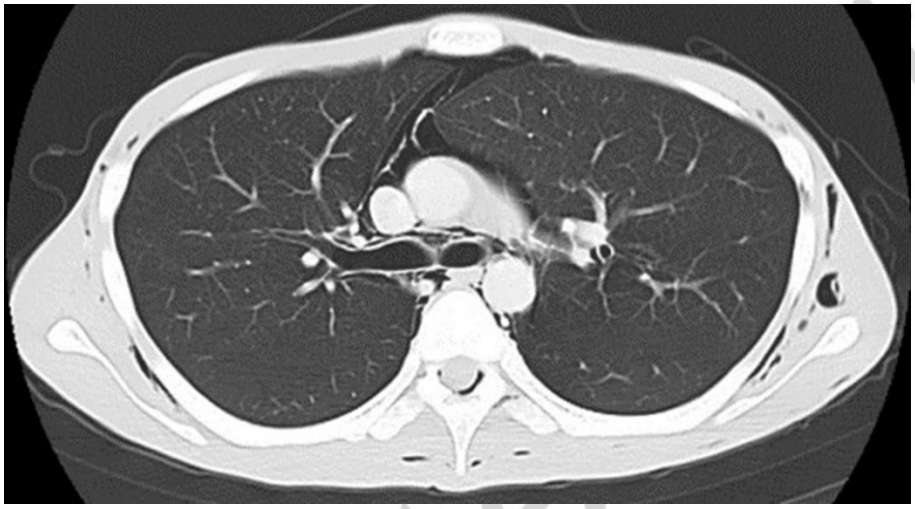

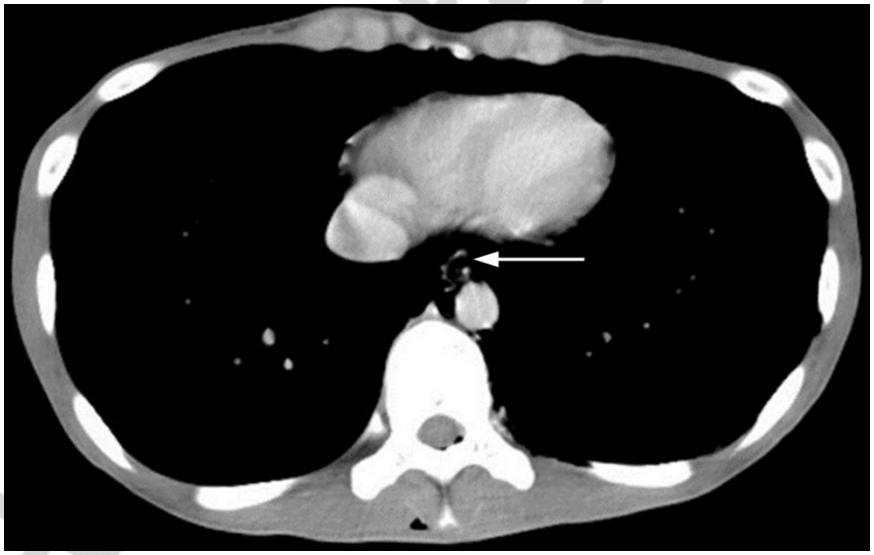

Fig. 1. A. A chest radiograph showed extensive subcutaneous emphysema in the chest and neck. B and C. Computed tomography (CT) scans showed extensive subcutaneous emphysema in the neck, shoulders and axilla, as well as pneumomediastinum and

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pneumothorax. D. Thinning of the lower esophageal wall (arrow) was observed without obvious evidence of perforation.