Case Report Title:

Spontaneous subcutaneous emphysema in young healthy industrial worker.

Author and Affiliations:

1. Wan Afiq Rukaini Bin Wan Mahadi, Hospital Sultanah Nur Zahirah.

2. Zatul Rathiah Binti Sulong @ Abdul Razak, Hospital Sultanah Nur Zahirah.

3. Hafidahwati Binti Hamad @ Ahmad, Hospital Sultanah Nur Zahirah.

Introduction

Subcutaneous emphysema (SE) is the clinical condition where the air is present subcutaneously. It is often causing minimal symptom but may sometime severe and fatal. Chronic obstructive pulmonary disease (COPD) and direct trauma to the neck and chest area are the most reported cause of SE. We report a case of young healthy patient that sustained spontaneous SE (SSE) after cement sack lifting.

Case description

21 years old male labourer presented to casualty, complaining of sudden chest discomfort associated with odynophagia and dysphagia after lifting up 50kg cement sack with his colleague. The case was referred from clinic for acute coronary syndrome (ACS). Physical examination revealed patient had hypernasal speech, there was minimal crepitus felt over the bilateral neck. Other vital signs were unremarkable. Electrocardiography (ECG) showed sinus rhythm. Chest radiography and soft tissue neck radiography were proceeded showed air entrapment over the bilateral prevertebral region extending to the left axillary. Bedside flexible-nasopharyngoscopy was unremarkable. Computed tomography neck was done after admission showed pneumo-paracervical and pneumomediastinum. White count cell was 18 cells per microlitre while others were normal. Patient was given high flow oxygen therapy, analgesic, antibiotics and intravenous normal saline infusion before admission.

Discussion

Iatrogenic and trauma are the most common causes of SE. SSE is rarely seen. It has been previously described in association with pulmonary tuberculosis (PTB). Theoretically, SSE happen as result of breach of the alveolar lining through air track towards the bronchovascular sheath to reach the mediastinum and subcutaneous space of neck. It is hardly happened until there is sudden rise of intra-alveolar pressure that usually occur during sudden gush inspiration of weight lifting activity. This is called the Macklin effect. The treatment of SSE is mostly observation and symptomatic. Rarely, if the condition is severe, surgical intervention might be needed to release the air entrapment.

Conclusion

Spontaneous SE might be mistakenly diagnosed. With trivial symptoms and minimal air entrapment on the chest radiography, clinicians might miss the SSE as other diagnosis eg: upper respiratory tract infection or ACS. Thus, thorough history and clinical examination with and aid of radiography are very important to get the correct diagnosis.

Keywords

Spontaneous subcutaneous emphysema, Macklin effect, Pnuemomediastinum

349 words