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Case report

A case of lung herniation with hemothorax in a patient with asthma and atrial fibrillation

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A B S T R A C T

A 83 years old man was admitted to acute medical unit for mild asthma exacerbation. He also had atrial fibrillation and was on dabigatran. A mass on left upper chest wall was incidentally found. There were bruises over left posterolateral aspect of chest wall. Chest X-ray showed left pleural effusion. Diagnostic tap yielded blood-stained fluid. Computer tomography showed left lung herniation. Cardiothoracic surgery team unit was consulted. Reduction of lung herniation and patch repair of chest wall defect was done.

1. Introduction

Lung herniation is an uncommon condition. It is related to chronic cough condition such as asthma. Hemothorax is another uncommon condition in patients on anticoagulation therapy. A case of coexistence of lung herniation and hemothorax, who presented with a soft tissue mass on the upper chest wall and left pleural effusion on chest X-ray, is reported.

2. Case report

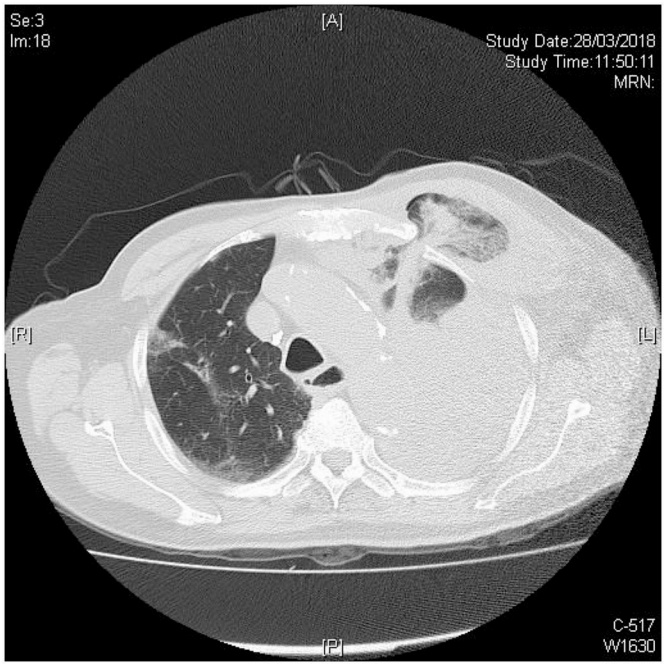
An 83-year-old man with history of asthma on inhalers, atrial fibrillation on dabigatran, was admitted to hospital because of cough.

He was in his usual state of health until 1 month ago when he had cough and dyspnea. His cough had increased in severity for one day and therefore he sought medical attention. Physical examination showed left upper chest wall mass, which was not noticed by patient before. The mass did not change with respiration, and was non-tender on palpation (Photos 1-4). Diffuse bruising was noted over posterolateral aspect of left chest wall (Photo 5). Percussion dullness was elicited at left lung base.

Chest X ray showed left sided pleural effusion. Diagnostic left pleural tapping yielded blood stained fluid. Subsequent computer tomography of thorax showed left lung herniation (Image). Cardiothoracic Surgery unit was consulted. Reduction of lung herniation and patch repair of chest wall defect was done.

3. Discussion

Lung herniation is an uncommon condition. The most common site



CT image. Lung herniation through defect between first costal cartilage and sternum, second costochondrial separation, first and second intercostal space. Hematoma posterolateral to the herniated lung, and pneumothorax were noted.

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Photo 1. A mass on left upper chest wall was shown.

Photo 2. A mass on left upper chest wall was shown.

Photo 3. A mass on left upper chest wall was shown.

Photo 4. The size of lung herniation was compared with a Hong Kong five dollar coin.

of lung hernias is thoracic (60–80%), which is followed by cervical (15–35%), and diaphragmatic (2–5%) [1,2]. Etiologically only 20% of lung hernias are congenital and 80% are acquired. More than half acquired lung hernias are traumatic (52%). Spontaneous acquired lung hernias comprise of 30% and pathological hernias the remaining 18% [1,2]. Congenital hernias usually result from weakness of endothoracic fascia at the thoracic inlet or at the intercostal spaces, combined with absence of the intercostal muscles [3]. Pathological hernias are caused by infection or neoplasm [4].

Increased thoracic pressure plays a significant part in lung herniation. Increase in thoracic pressure is observed in patients with intra-abdominal pressure, weight lifters, musicians, patients with chronic cough, body habitus and steroid use [5,6].

Lung hernias usually appear as soft, occasionally tender, subcutaneous masses, which may enlarge with coughing, straining or valsalva maneuvers.

Lung hernia delineation is best performed with computed tomography. Intercostal lung hernias will show hyperlucency beyond the ribs which corresponds to air and lung parenchyma. Hemothorax will be demonstrated as fluid collection with high attenuation on computed tomography.

Photo 5. A mass was observed at left upper chest wall, with bruises over posterolateral aspect.

Hemothorax is not common in patients with anticoagulation and it usually appears in the first week of therapy [7]. Warfarin is a more commonly used oral anticoagulant and its related thoracic hemorrhage is about 3% of all hemorrhagic complications. Most of the complications are trauma-related [8]. There is increased use of novel oral anticoagulants (NOAC). Cases of spontaneous hemothorax related to one of the NOAC, dabigatran, have been reported [9,10]. In this case the relationship between lung herniation and hemothorax was yet to be established.

The patient recovered well after surgery. There was no shortness of breath at rest or during exercise. His mobility level returned to his pre-admission level, walking independently. Dabigatran was resumed and there was no recurrence of hemothorax. Respiratory physician was consulted and his asthma control medications were optimized. This gentleman reported significant reduction in cough.

Declarations of interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.rmcr.2018.09.018.

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