Introduction

Re-expansion Pulmonary Oedema (REPE) is a rare complication of chest drain insertion for pneumothorax or pleural effusion. It is defined as pulmonary oedema developing in a re-expanded lung due to increased vascular permeability.

The incidence ranges between 1% - 14%.

It can occur on the ipsilateral or contralateral side, or can even be bilateral.

We report a case of ipsilateral REPE occurring after chest drain insertion for spontaneous pneumothorax.

Case Presentation

A 25 year old female presented with right sided pleuritic chest pain and shortness of breath. Her symptoms had started 3 days ago, while on a flight. She had a 5 pack year smoking history, otherwise no significant past medical history.

Examination revealed mild respiratory distress and a chest X-ray showed a large pneumothorax Fig1.

A chest drain (24 F) was immediately inserted by the Emergency department. However repeat imaging within an hour, showed partial lung expansion and air space shadowing of the right lung Fig2.

Her condition deteriorated in the next 24 hours. She complained of more right sided chest discomfort and worsening shortness of breath and her repeat X-ray showed worsening of the alveolar shadowing Fig3. At this point REPE was considered and she was treated with furosemide.

By the next day she improved clinically and radiologically Fig4.

Discussion

Usually REPE is self limited and can even be asymptomatic. However a mortality rate as high as 20% has been described.

Pathophysiologically, mechanical distress on the alveoli and damage by oxygen radicals have been suggested.

In the literature, there have been several risk factors that have been associated with REPE:

- Younger age
- 3 days of lung collapse
- >30% of Lung collapse
- rate of pleural drainage

Treatments include administration of diuretics and hyperosmotic colloidal solution; and positive pressure ventilation is needed for some cases. However, the key is to prevent this complication from happening by following steps towards gradual pleural drainage.

Our patient was at high risk of developing REPE. Though we did not use any suction, but perhaps this complication could have been prevented by gradual pleural drainage by using a smaller bore chest drain.

Conclusion

REPE is a rare complication of chest drain insertion associated with mortality. High level of awareness of such a complication together with prevention of this are the key points.

References

3. Roberts ME, Neville E, Blennsand RG et al. BTS guidelines for the management of malignant pleural effusion 2010