Hospital Course

The patient developed health-care associated pneumonia and was treated with antibiotics and aggressive hydration.

His pneumonia resolved within a few days, however the patient started complaining of difficulty breathing and cough with a new oxygen requirement of 3L/min via nasal cannula.

His chest imaging showed bilateral pleural effusions refractory to diuresis (Fig 1).

The patient underwent right-sided thoracocentesis, with removal of 2.5L of transudative fluid.

He witnessed immediate improvement in his breathing, and the chest x-ray post-thoracocentesis showed significant reduction in the right pleural effusion. (Fig 2)

Later that night, the patient developed dyspnea and hypoxia. On physical exam, he was tachypneic, tachycardic and his oxygen saturation was 67% on 3L/min via nasal cannula.

Lung auscultation revealed new crackles on the right side extending to the apex, and remained unchanged on the left side.

Repeated chest x-ray showed diffuse right-sided infiltrates, consistent with re-expansion pulmonary edema. (Fig 3)

The patient was admitted to the intensive care unit and received BiPAP ventilation, as well as diuresis.

Repeated imaging within five hours demonstrated significant reduction in the pulmonary edema, and the patient’s clinical condition improved markedly. (Fig 4)

He was transitioned to supplemental oxygen via nasal cannula at 2L/min within 24 hours.

Case Presentation:

An 80-year-old man with a history of hypertension, atrial fibrillation, congestive heart failure with preserved ejection fraction, and sacral decubitus ulcer was hospitalized for surgical debridement of his ulcer.

Re-expansion pulmonary edema (RPE) post-thoracocentesis

Re-expansion pulmonary edema (RPE) is a rare complication of therapeutic thoracentesis.1-8

Patients usually present with productive cough, tachypnea, hypoxia, tachycardia, and hemodynamic instability within the first hour and up to twenty four hours after the procedure.8

Treatment for RPE is supportive, with oxygen supplementation and diuresis.5

In our case, we found dramatic clinical and radiological changes after applying BiPAP and thereby increasing the intra-pleural pressure.

Clinicians should be encouraged to place patients who develop RPE on BiPAP for six to twelve hours to prevent worsening of pulmonary edema.

As presented in our case, this management modality had desirable outcomes in as little as five hours.

Conclusion

BiPAP could be an effective way in treating patient with RPE by increasing the intra-pleural pressure. Further studies should be conducted to assess the effectiveness of BiPAP in decreasing the progression of RPE and mortality.

References