The Utilization of Airway Pressure Release Ventilation as a Recruitment Strategy for Patients Who Develop Bilateral Atelectasis.

Kenneth Miller MEd, RRT-NPS  
*Lehigh Valley Health Network, Kenneth.Miller@lvhn.org*

Linda Cornman BS, RRT-NPS  
*Lehigh Valley Health Network, Linda.Cornman@lvhn.org*

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The Utilization of Airway Pressure Release Ventilation as a Recruitment Strategy for Patients Who Develop Bilateral Atelectasis

Kenneth Miller, MEd, RRT-NPS, Linda Cornman, RRT-NPS, David Scaff M.D.
Introduction

- Trauma patients often require multiple operative procedures during their clinical course.
- Often secondary to the type of procedure or patient position, development of post-operative atelectasis is common.
- Airway Pressure Release Ventilation (APRV) is a ventilatory strategy that can quickly reverse post-operative atelectasis.
Methods

- Retrospectively, we reviewed ten patients who were admitted into TNICU over a twelve month time frame who developed lung decompensation during an operative procedure.

- Post operative atelectasis was diagnosed by chest x-ray and drop of PaO$_2$/FIO$_2$ ratio greater than twenty-five percent.
Surgical Procedures

Patient in supine position
Normal Chest X-ray
Atelectasis

- Left lower atelectasis
- Bilateral atelectasis
Oxygenation Status

PaO2/FIO2 ratio = 
150/.50 = 300 torr
Intervention

- All patients were placed on APRV mode for a minimum of four hours.

APRV is a ventilatory strategy that utilizes long inspiratory time and moderate airway pressures.
There was an increase in the P/F ratio in ten patients whose P/F dropped during an operative procedure greater than two hours.
Post APRV X-ray Results

Pre APRV ventilation

Post APRV implementation
Conclusion

- APRV significantly increased the P/F ratio by a mean of thirty-five percent.

- Did not examine this intervention on mortality and morbidity.

- More studies need to be conducted on APRV’s role in the trauma patient population.