

# CAN PHYSIOTHERAPISTS UTILISE LUNG ULTRASOUND TO SIGNIFICANTLY ENHANCE THE MANAGEMENT OF AN INTUBATED PATIENT?

## A CASE STUDY DEMONSTRATING THIS NOVEL DIAGNOSTIC STRATEGY.

### INTRODUCTION

The profile of lung ultrasound in the critical care setting is growing amongst the medical profession. Historically, Physiotherapists have relied on the use of auscultation and portable chest x-ray (CXR) interpretation for assessment of pulmonary pathology and ultimately guiding treatment options. Research into Physiotherapy use of lung ultrasound as a novel assessment adjunct is still in its infancy.

### OBJECTIVE

To demonstrate the potential impact of lung ultrasound performed by Physiotherapists in the critical care setting.

### METHODS

A physiotherapeutic assessment of a deteriorating post-operative cardio-thoracic patient was conducted following reintubation. The patient had been reintubated due to hypoxaemia, and increased work of breathing despite increasing the fraction of inspired oxygen. The initial physiotherapeutic assessment using CXR review and auscultation suggested bibasal consolidation. Our medical colleagues agreed and the team commenced antibiotics for a chest infection. Physiotherapy treatment was initiated which included manual hyperinflation for secretion clearance, however, no improvement was

demonstrated. The Physiotherapists then decided to use lung ultrasound to investigate. This showed an unexpected large bibasal pleural effusion. A multidisciplinary meeting was then requested to discuss.

### RESULTS

The decision was made for the medical team to insert bilateral chest drains with 2400mls and 1600mls drained in total. Clinical improvement was seen over the following 24 hours, enabling early extubation, an improved CXR and dramatic reduction in fraction of inspired oxygen to room air within two days.

### CONCLUSION

Multidisciplinary assessment of the patient led to a working diagnosis of post-operative chest infection following the interpretation of the available investigations. The addition of Physiotherapy initiated lung ultrasound added a differential diagnosis of large pleural effusions adding to this patient's respiratory deterioration. Following a review of the medical management plan, the patient made significant clinical improvement. This case study demonstrates that the physiotherapeutic management of a deteriorating patient in a critical care setting can be guided by the use of point of care lung ultrasound.

