

Evaluation of pulmonary reexpansion after thoracocentesis using electrical impedance tomography

Sérgio Henrique Saraiva Alves

RESUMO

Introduction: The time to maximum lung reexpansion after a thoracocentesis (Thc) is unknown. This limitation is due to the lack of a method to accurately and continuously gauge the lung reexpansion. Electrical impedance tomography (EIT) is a method able to continuously measure relative alterations in lung ventilation and may be an attractive method to evaluate lung function affected by a pleural effusion and the effect of Thc. **Objectives:** Quantify the time to maximum lung expansion. **Methods:** EIT electrodes were placed around the thorax two centimeters above the effusion lower level. The EIT images were recorded before, immediately and at 15 min intervals after Thc until three consecutive measurements without alteration in the ventilation of affected lung (defined as a ventilation variation $<10\%$). **Results:** We evaluated seven patients with pleural effusion. The mean withdrew effusion volume was 1440 mL. Five patients reexpanded the lung. Before Thc, their mean lung ventilation proportion of the affected lung over the unaffected was 0.19 and rose to 0.71. Two patients achieved maximum reexpansion immediately after Thc, one after 15, one after 30 and one after 60 min. Two patients did not reexpand their lungs. [figure1] **Conclusions:** Patients that reexpand their lungs after thoracocentesis achieve maximum lung reexpansion immediately or in less than 60 minutes.