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TENSION PNEUMOTHORAX IN THE EMERGENCY ROOM

Bruna Neves Luz
Research Center of the Universidade de Ribeirão Preto (UNAERP)

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INTRODUCTION

Pneumothorax can be defined as the presence of air in the pleural space, with secondary lung collapse. In extreme cases, the progressive accumulation of air in the pleural space without an exit route leads to the development of a positive intrapleural pressure in the expiratory phase, an alteration defined as tension pneumothorax.

OBJECTIVES

This literature review aims to analyze how lung collapse occurs in tension pneumothorax.

METHODOLOGY

To this end, a bibliographical review was carried out in books on physiology, respiratory therapy and medical emergency, searching for "The Respiratory System", "Ventilation", "Pleural Diseases", "Pneumothorax" and "Hypertensive Pneumothorax".

RESULTS

Normally, the parietal and visceral pleurae are in physical contact with each other, separated only by a thin membrane of fluid. This liquid membrane provides an adhesive force that resists the separation of the pleurae, keeping the lungs adhered to the chest wall. Thus, when the respiratory muscles move the costal arch outwards in an inspiratory force, the lung is literally pulled by the forces of adhesion between the parietal and visceral pleurae. The elastic retraction forces of the lungs resist this external movement. In atelectasis, the main consequence of pneumothorax, this elastic retraction occurs without resistance from transpulmonary pressure (equalizing the difference in pressure between the alveoli and the pleural space), which in the tension complication becomes negative in relation to atmospheric pressure, favoring intense lung collapse, because without the positive pressure through the alveoli, the force that kept the lung tissue glued to the wall of the rib cage ceases to exist. The alveoli, which are elastic structures, then retract.

CONCLUSION

The transpulmonary pressure gradient is responsible for the degree of alveolar inflation and must be positive for ventilation to occur. However, this does not occur in tension pneumothorax due to the positive intrapleural pressure.

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