

MINIMAL PNEUMOTHORAX CHEST POSTERO ANTERIOR VIEW VS OPPOSITE LATERAL DECUBITUS VIEW

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ABSTRACT

Pneumothorax is a life threatening condition, which can be massive or minimal, usually can be detected on chest x-ray posteroanterior view, but minimal pneumothorax will be difficult to diagnose on chest x-ray posteroanterior view even in expiratory film, as collapsed lung border can be behind the rib density. In such conditions, opposite lateral decubitus view will be helpful in diagnosing minimal pneumothorax. Details are given below.

KEYWORDS

Minimal Pneumothorax, PosteroAnterior View Expiratory Film, Opposite Lateral Decubitus View, CT Chest.

HOW TO CITE THIS ARTICLE: Panyam KC, Waghray P, Tummuru VR, et al. "Minimal pneumothorax chest postero anterior view vs opposite lateral decubitus view." Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 104, December 28; Page: 16969-16970, DOI: 10.14260/jemds/2015/2561

INTRODUCTION

A pneumothorax is defined as air in pleural space, that is air between lung and the chest wall. Pneumothorax can be divided into spontaneous pneumothorax, which further divided into primary and secondary traumatic pneumothorax, which further divided into Iatrogenic and Non-Iatrogenic (Artificial). Common clinical manifestations include unilateral chest pain and dyspnoea.

MATERIALS AND METHODS

Patients with age between 20 and 60 years with secondary spontaneous pneumothorax were included in the study.

Patient with Tuberculosis, old or new were excluded from the study.

Chest x-ray PA view, chest x-ray opposite lateral decubitus view, computerised tomography. Fifty patients of minimal pneumothorax were selected for the study. Chest PA view and opposite lateral decubitus view was done for all the patients and a comparative study was done.

RESULT

In 30 patients both PA and opposite lateral decubitus views showed pneumothorax. In 15 patients PA view even expiratory film was unable to diagnose pneumothorax, but opposite lateral decubitus view showed pneumothorax with collapsed lung border and deep sulcus sign. In 5 patients, both PA and opposite lateral decubitus views were not able to diagnose pneumothorax and finally diagnosed with CT scan.

Financial or Other, Competing Interest: None.

Submission 04-12-2015, Peer Review 05-12-2015,

Acceptance 23-12-2015, Published 28-12-2015.

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DOI:10.14260/jemds/2015/2561

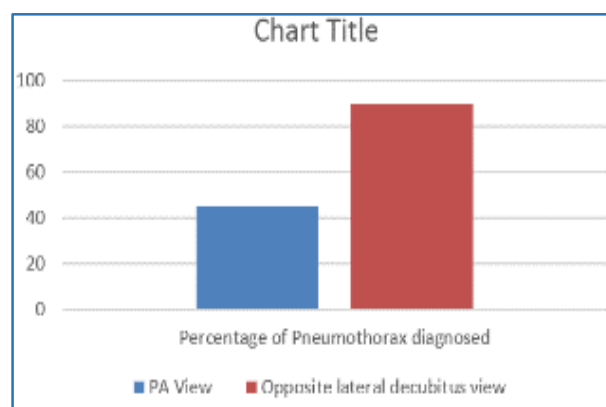


Fig. 1: Percentage of minimal Pneumothorax diagnosed on Chest PA view expiratory film and opposite Lateral Decubitus View



Fig. 2: Chest X-ray Right Lateral Decubitus view showing right minimal Pneumothorax



Fig. 3: Chest x-ray PA view expiratory film showing Right Minimal Pneumothorax

DISCUSSION

The most common mode of presentation is sharp unilateral chest pain. This is frequently accompanied by shortness of breath, although pain may be the sole presenting symptom in two-third of patients.¹ The majority of cases of spontaneous pneumothorax are unassociated with physical exertion.^{2,3,4}

If a pneumothorax is suspected clinically, but not detected on a standard inspiratory film, then two procedures may be used to confirm the diagnosis. In the first chest radiograph is taken on expiration, this has the effect of reducing the volume of both the thorax and the partially deaerated lung.

As the volume of air within the pleural cavity is incompressible at physiological pressures, it remains the same on expiration and pneumothorax, therefore appears to enlarge in relation to the smaller thoracic volume.

In the second method, the chest radiograph is taken in lateral decubitus position with the side on which the pneumothorax is suspected uppermost.⁵

Even a small pneumothorax is revealed by this technique as the air lung interface is clearly visible beneath the lateral chest wall. This is also preferred view for demonstrating pneumothorax in infants. Also helpful for determining effusion is free flowing and whether there is enough fluid to sample with thoracentesis.

CONCLUSION

In minimal pneumothorax, opposite lateral decubitus view is the preferred investigation over PA view expiratory film. It is not only helpful in the diagnosis, but also prevents further expensive investigations like CT scan and helpful in residency period where we usually miss very minimal pneumothorax.

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