

Pneumothorax in a preterm

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Section: Chest imaging

Case Type: Clinical Cases

Authors: C. Spinelli, P. Vagli, G. Lupi, E. Neri, C. Bartolozzi.

Patient: 1 days, female

Clinical History:

Respiratory distress syndrome at birth. Pneumothorax at day 2.

Imaging Findings:

At birth the weight was 1,1 kilos. She was reanimated by means of physical stimulation and oxygen mask. On the first day presented reduced oxygen blood saturation and chest x-ray demonstrated a respiratory distress syndrome. The second day she was intubated and chest x-Ray showed a left pneumothorax and a drainage was initiated. Pneumothorax completely resolved after two weeks.

Discussion:

Chest radiograms revealed in our case the onset of a pneumothorax in a preterm with distress respiratory syndrome that non uniformly involved the lung fields; the collapse of the left lung with the complete absence of the pulmonary plan were also observed. Pneumothorax corresponds to the extravasation of air in the pleural cavity and produces a partial or complete collapse of the adjacent lung. Pneumothorax is defined spontaneous when no traumatic or iatrogenic factors are involved. Respiratory distress syndrome or hyaline membrane disease are caused by surfactant deficiency and these are the conditions in which a pneumothorax occurs in spontaneously breathing so this is not primarily a complication of mechanical ventilation. Respiratory distress syndrome requiring ventilatory support is a common condition among small premature infants. Recently pneumothorax and other air leaks have been attributed to high ventilatory pressure (barotrauma) or volumes (volutrauma). High ventilatory volumes induce pneumothorax in atelectatic lungs because inflated air is forced only into the expanded areas of the lung that result in volumetric overload. In the present case it is impossible to establish if the pneumothorax was spontaneous or iatrogenic.

Differential Diagnosis List: Pneumothorax

Final Diagnosis: Pneumothorax

References:

Guerin JC.

Spontaneous pneumothorax.

Rev Prat Jun; 1997, 47(12):1320-25. (PMID: [9248099](#))

Jones RM, Rutter N, Cooper AC, Pullan CR.

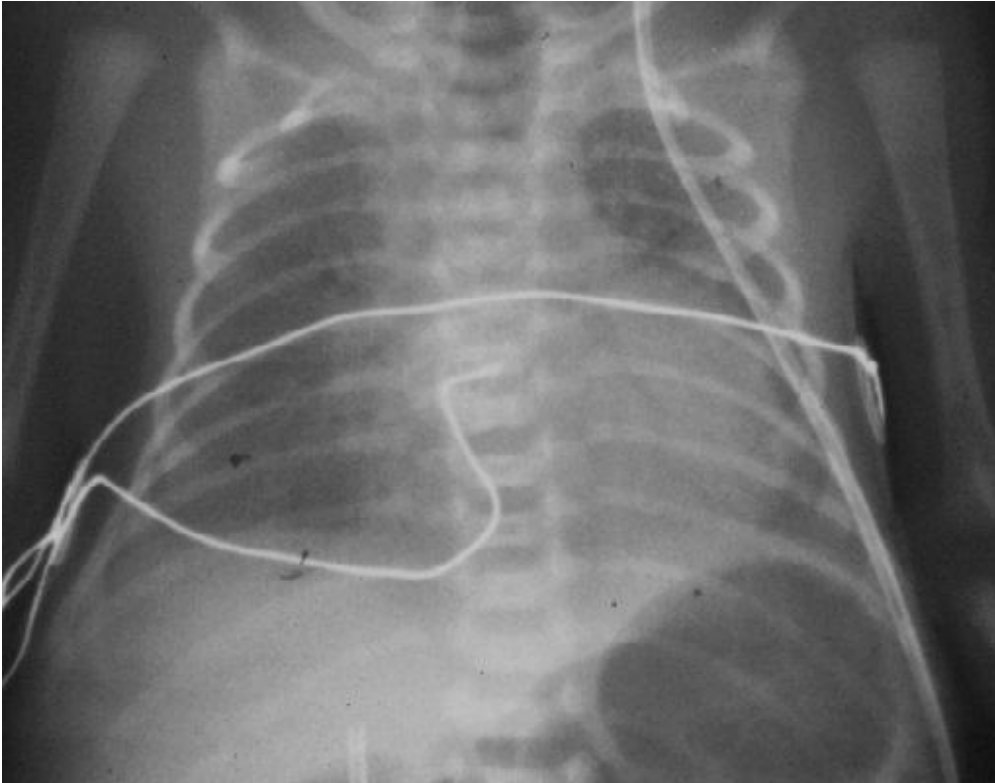
Pneumothorax in the neonatal period. Anaesthesia Oct; 1983, 38(10):948-52. (PMID: [6356970](#))

Weg J.G., Anzueto A., Balk R., Wiedemann H.P., et al.

The relation of pneumothorax and other air leaks to mortality in the acute respiratory distress syndrome, 1998, NEJM; 338(6): 341-6. (PMID: [9449726](#))

Figure 1

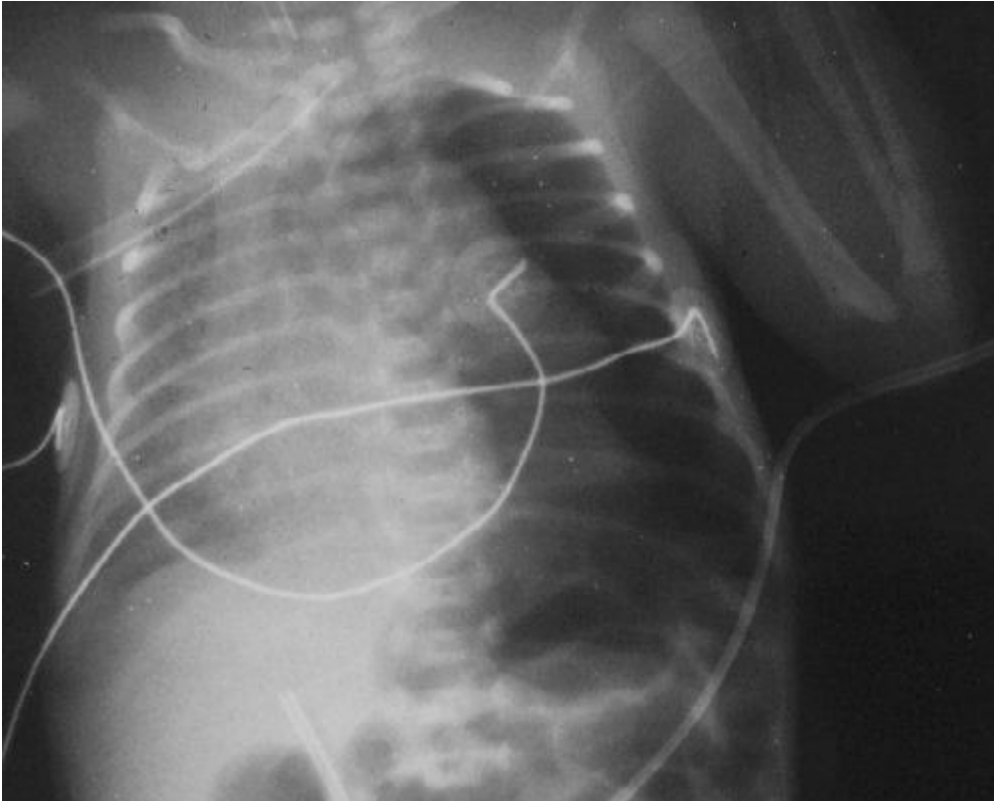
a



Description: Plain chest radiograph in this newborn shows characteristically small, and granular lungs with air bronchograms. **Origin:**

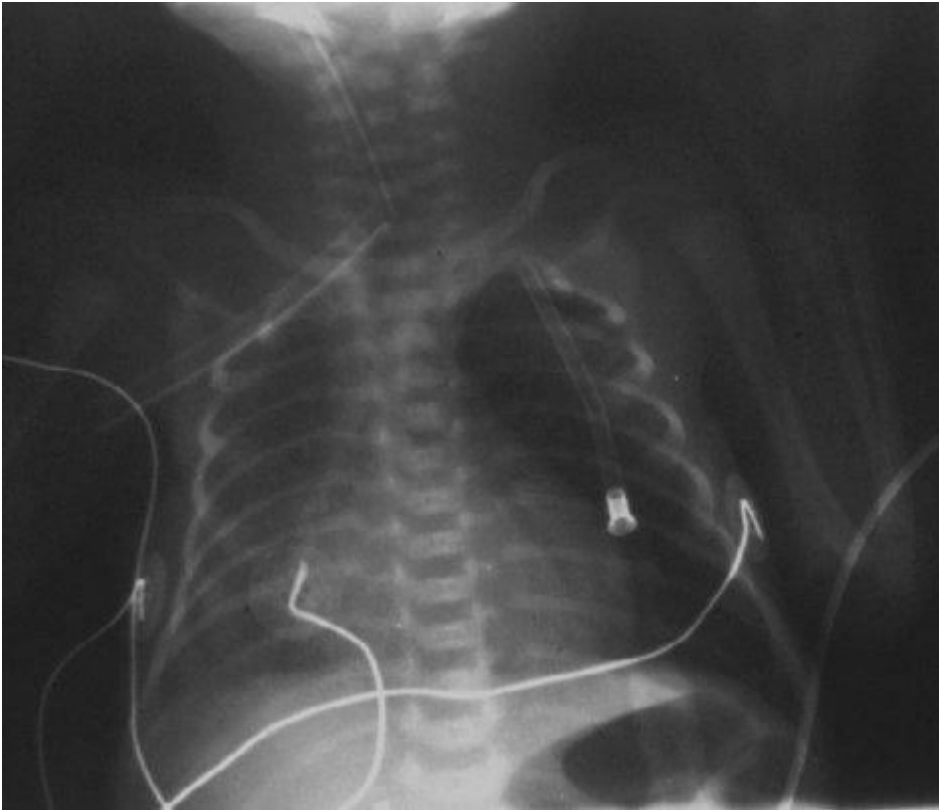
Figure 2

a



Description: Pneumothorax is evident on the left side associated with a partial collapse of the adjacent lung. Mediastinum structure is also dislocated on the right side. **Origin:**

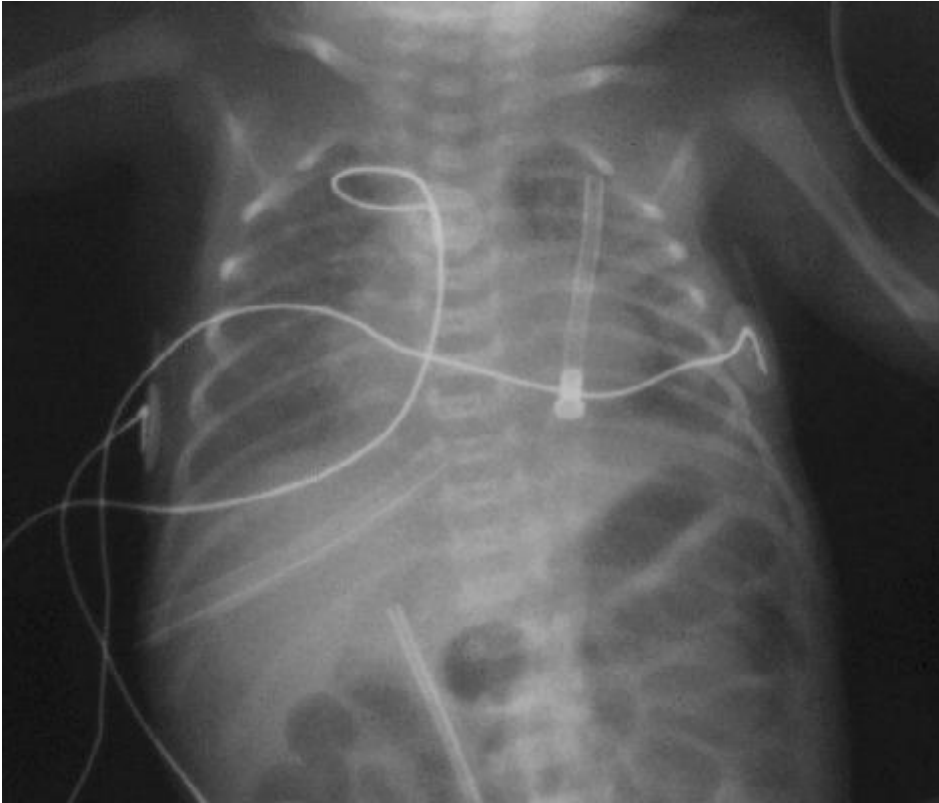
b



Description: Drainage was applied at the level of the seventh intercostal space and mediastinum returned normal. **Origin:**

Figure 3

a



Description: Pneumothorax resolved but respiratory distress syndrome persisted. **Origin:**