Spontaneous pneumomediastinum associated with pulmonary cavitation

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Summary

Two patients developed spontaneous pneumomediastinum. One had a tuberculous cavity and the other an emphysematous bulla.

Case 1

A 65-year-old man was admitted with a 12-hr history of sudden onset of diffuse swelling of the neck, hoarseness and dyspnoea, which had become progressively worse. There had been no bouts of coughing or straining and the first symptom he had noticed was discomfort in the neck due to increasing swelling, which progressed later to hoarseness.

He had been treated for pulmonary tuberculosis in 1957 and had suffered from chronic bronchitis for 10 years. He had been a heavy cigarette smoker until 12 years before, when he stopped.

On examination, there was widespread subcutaneous emphysema in the neck and both supraclavicular fossae. The percussion note was hyperresonant over both lungs and the heart sounds were normal. The chest X-ray showed subcutaneous and mediastinal emphysema with a large emphysematous bulla at the left apex (Fig. 1).

No specific treatment was given; he improved over the next 3 days and the subcutaneous emphysema disappeared.

FIG. 1. Chest X-ray showing air in tissues of neck, linear air shadow on right of mediastinum and bullae in left lung.

FIG. 2. Chest X-ray showing widespread subcutaneous emphysema, air shadow on right of upper mediastinum and large cavity in right upper lobe.

Case 2

A 55-year-old woman was admitted with a sudden onset of swelling in the neck and upper chest. She had had no cough, breathlessness or chest pain and there was no history of trauma. She had been treated for pulmonary tuberculosis 4 years before.

On examination, there was extensive subcutaneous emphysema over the neck and upper chest. The trachea was deviated to the right and there was decreased air entry over the right lung.

The chest X-ray showed a large cavity at the right apex and extensive subcutaneous and mediastinal emphysema. There were also changes of old tuberculous infiltration in both lungs and fibrosis of the right lung (Fig. 2).

Over the next 4 days she improved spontaneously and the subcutaneous emphysema disappeared.

Discussion

Spontaneous pneumomediastinum may be symptomless, but it can produce severe chest pain mimicking myocardial infarction. A prominent symptom is severe sore throat, and spontaneous pneumothorax is often an associated feature.

The physical signs are of subcutaneous emphysema, diminution of cardiac dullness, distant heart sounds and crepitations over the mediastinum. Occasionally a systolic crunching sound is heard over the praecordium synchronous with the heart beat (Crofton and Douglas, 1975). The chest X-rays typically show air outlining the upper mediastinum and the heart borders. It appears as a 'pencil line'

shadow, usually on the left side. On the lateral view a substernal collection of air may be seen and air may be shown in the subcutaneous tissues of the neck.

Air may enter the mediastinum from a perforation of either the oesophagus or bronchus, along the interstitial tissues of the lung following rupture of alveoli, or through the retroperitoneal tissues following perirenal insufflation or a perforation of the gastrointestinal tract (Hamman, 1939).

Alveolar rupture may follow straining with the glottis closed and may occur in labour, defaecation or heavy lifting. It can also complicate lung diseases in which airways obstruction or violent coughing is present, such as asthma, bronchitis, whooping cough, inhaled foreign bodies and pneumonia (Hamman, 1945).

The 2 cases described here are noteworthy because of the presence of a pulmonary cavity in one and a bulla in the other. With these lesions, spontaneous pneumothorax is a much more likely complication than spontaneous pneumomediastinum.

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References

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