

Popping pneumothorax

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Dear Editor,

We observed a typical popping sound on auscultation, leading to the diagnosis of a small pneumothorax in a 25-year old man.

He presented with a three-week history of left-sided chest pain, with acute onset at rest. He also felt a friction rub under the left costal arch. No dyspnoea was present.

Four years earlier he twice experienced spontaneous pneumothorax, both in the apex of the left lung, eventually treated with thoracoscopic pleurodesis by talkage. He was a heavy smoker with asthma and he took inhalations of fluticasone and salmeterol. Physical examination revealed a normal breathing pattern and symmetrical chest movements, a 100% oxygen saturation and no cardiac abnormalities. A remarkable cyclical popping sound was audible in the basal area of the left lateral chest wall when the patient was examined in sitting position.

Blood tests were normal. Chest radiography in the upright position revealed an air-fluid level at the base of the left pleural space, indicating a small left-sided pneumothorax. Fibrotic abnormalities in the left apical lung were as observed on earlier chest films. This subtle pneumothorax was expected to resolve spontaneously, and the patient was dismissed with paracetamol (acetaminophen).

At two-week follow-up he was well without chest pain. The popping sound on auscultation had disappeared.

The popping sound accompanying a left-sided pneumothorax, as in this case, is called 'Hamman's sign', after Louis Hamman, who described it in 1937.¹ Hamman's sign is described as a crunching, bubbling, popping, crackling or clicking sound synchronous with the heartbeat.^{2,3} Traditionally, Hamman's sign was associated primarily with pneumomediastinum.¹ After 1937 an association of Hamman's sign with left-sided pneumothorax was reported incidentally.^{2,4} It appears to be associated with a small pneumothorax only, and varies in intensity with changes in posture.^{2,4} The sound may arise from mediastinal air abutting the heart, or from pleural

air collections being pulsed by the beating heart cyclically through pleural pockets and against the chest wall.³

The popping sound on auscultation was indicative of a left-sided pneumothorax or pneumomediastinum. On initial examination of the chest radiograph, the small pneumothorax was overlooked. The horizontal air-fluid level at the base of the left pleural space indirectly suggested the presence of pneumothorax. No mediastinal air was detected. This case illustrates how small pneumothoraces may initially be missed on chest films and how careful physical examination may assist in the diagnostic process.

To our best knowledge, Hamman's sign has not been described since 1992.³ This remarkable physical sign should be kept 'alive' as it may provide a clue to the diagnosis of a left-sided pneumothorax or pneumomediastinum in patients presenting with left-sided chest pain, even when radiological examination is not supportive.

ACKNOWLEDGEMENTS

The authors wish to thank Dr. R.H.A.M. Kneepkens, radiologist, Department of Radiology, Gelderse Vallei Hospital Ede, the Netherlands, for his comment on the chest radiograph.

No conflicts of interest exist.

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