



## PULMONARY PUZZLES

# I hear the heartbeat, or things that go bump-bump in the night...

Laurence Drake

### Correspondence to

Dr Laurence Drake, Greensands Medical Practice, Brook End, Potton, Bedfordshire SG19 2QS, UK; laurence.drake@doctors.org.uk

Received 10 September 2014

Accepted 11 September 2014

Published Online First

26 September 2014

A 47-year-old woman telephones your surgery and says, "I can hear my boyfriend's heartbeat—from three feet away!" Do you:

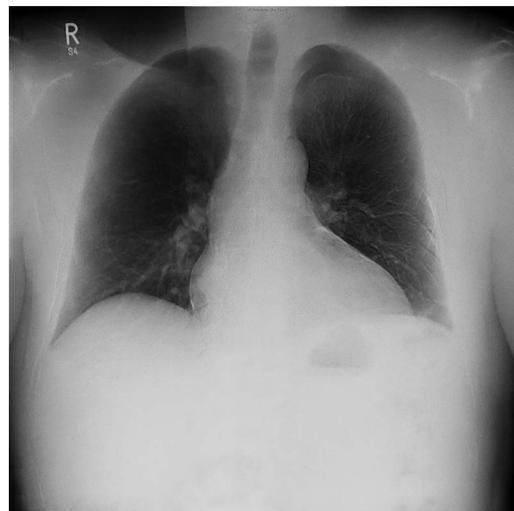
- arrange an urgent psychiatric review for this obviously delusional woman?
- arrange an urgent psychiatric review for the Editors of *Thorax* for publishing a cardiology case report?
- or do something else?

On urgent review after the phone call, you can hear what sounds like his amplified heart sounds from over a metre away, especially if he leans backwards.

This was a fit 50-year-old man, who had crashed his motorcycle at 70 mph racing at Snetterton circuit the previous day. A left clavicular fracture (figure 1) had been diagnosed in the local A&E Department, and he was discharged. Later that night he had become aware of a 'strange knocking sound' simultaneous with his heartbeat. On direct questioning, he admitted to mild dyspnoea while walking up the slope to the surgery.



**Figure 1** Radiograph showing patient's fractured clavicle.



**Figure 2** Chest X-ray showing left apical pneumothorax.

On examination he had slightly reduced left apical breath sounds, with no surgical emphysema or any other chest abnormalities. An urgent chest X-ray (figure 2) confirmed a shallow uncomplicated left apical pneumothorax, which subsequently resolved spontaneously.

### QUESTION

What is the diagnosis?



CrossMark

To cite: Drake L. *Thorax* 2014;**69**:1155–1156.

**ANSWER****Final diagnosis: fractured clavicle with apical pneumothorax and positive Hamman's sign**

Hamman's sign was first described in 1937<sup>1</sup> as a crunching, bubbling, popping, crackling or clicking sound synchronous with the heartbeat in association with a pneumomediastinum, or left-sided pneumothorax.<sup>2-4</sup> The noise is thought to be caused by the heart beating against air-filled tissues or pockets, or cyclical channelling of free pleural air through a lung fissure,<sup>3</sup> with possibly the effect being magnified by the resonating chamber of the pneumothorax cavity. By 2010<sup>5</sup> the sign was felt to be in danger of neglect, but it was felt it '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'.

Learning points: Some tall tales are true, and Rice Krispies are not the only differential diagnosis of 'Snap, Crackle, Pop'!

**Acknowledgements** Joel Melton, Consultant Orthopaedic Consultant, Addenbrooke's Hospital, Hills Road, Cambridge CB2 0QQ, who kindly supplied the attached X-rays. Professor Andrew Bush of *Thorax* for help with the manuscript.

**Competing interests** None.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; internally peer reviewed.

**REFERENCES**

- 1 Hamman L. Spontaneous interstitial emphysema of the lungs. *Tr Assoc Am Physicians* 1937;52:311-19.
- 2 Scadding JG, Wood P. Systolic clicks due to left-sided pneumothorax. *Lancet* 1939;2:1208-11.
- 3 Baumann MH, Sahn SA. Hamman's sign revisited. Pneumothorax or pneumomediastinum? *Chest* 1992;102:1281-82.
- 4 Scott JT. Mediastinal emphysema and left pneumothorax. *Dis Chest* 1957;32:421-34.
- 5 Rimmelts HHF, Banga JD. Popping pneumothorax. *Netherlands J Med* 2010;68:187.