

procedure. Upon completion of the four hour procedure, he was transferred to the SICU for later tracheal extubation in view of his difficult airway. Five minutes after initiating intermittent positive pressure ventilation, he became bradycardic and the arterial pressure waveform and carotid pulses disappeared. Atropine, 0.5 mg *iv*, was administered and external cardiac compression was initiated. As breath sounds were diminished on the left with a hyperresonant percussion note a thoracostomy tube was placed. SpO<sub>2</sub> improved dramatically and his heart rate and blood pressure returned to normal. A chest x-ray then showed a left-sided pneumothorax which resolved over next 24 hr.

Several morphological and haemodynamic factors may contribute to left ventricular outflow tract (LVOT) obstruction in patients with HCM. The LVOT obstruction can be exaggerated by interventions that increase myocardial contractility and heart rate (e.g., inotropes, chronotropes) or decrease arterial blood pressure and ventricular volume (e.g., Valsalva manoeuvre, positive intrathoracic pressure, vasodilatation, blood loss).<sup>2</sup> In this patient, pneumothorax may have caused LVOT obstruction and pulseless electrical activity secondary to diminished ventricular filling and mediastinal displacement. Alternatively, the pneumothorax itself may have been responsible.

In summary, pneumothorax leading to possible LVOT and pulseless electrical activity was diagnosed and treated successfully during perioperative anaesthetic management of a patient with HCM undergoing non-cardiac surgery.

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#### REFERENCES

- 1 Maron BJ, Epstein SE. Hypertrophic cardiomyopathy: a discussion of nomenclature (Editorial). *Am J Cardiol* 1979; 43: 1242-4.
- 2 Thompson RC, Liberthson RR, Lowenstein E. Perioperative anesthetic risk of noncardiac surgery in hypertrophic obstructive cardiomyopathy. *JAMA* 1985; 254: 2419-21.
- 3 Widimsky P, Ten Cate FJ, Vletter W, van Herwerden L. Potential applications for transesophageal echocardiography in hypertrophic cardiomyopathies. *J Am Soc Echocardiogr* 1992; 5: 163-7.
- 4 Brown MJ, Licina MG, Savage RM, Kraenzler EJ, Hearn C, Kirby TJ. Transesophageal echocardiography should be used during anesthesia for lung transplantation. *Anesthesiology* 1994; 81: A547.

### *An unusual foreign body*

To the Editor:

We recently cared for an eight year-old boy who presented after ingestion of the metal disk which is pushed into the top of drink cans. His past medical history was unremarkable. He was awake, alert, cooperative, and in no distress. Only the lateral radiograph of the neck demonstrated the metal disk at the level of the 7th cervical vertebra (Figure). The disk was subsequently removed by rigid oesophagoscopy under general anaesthesia.

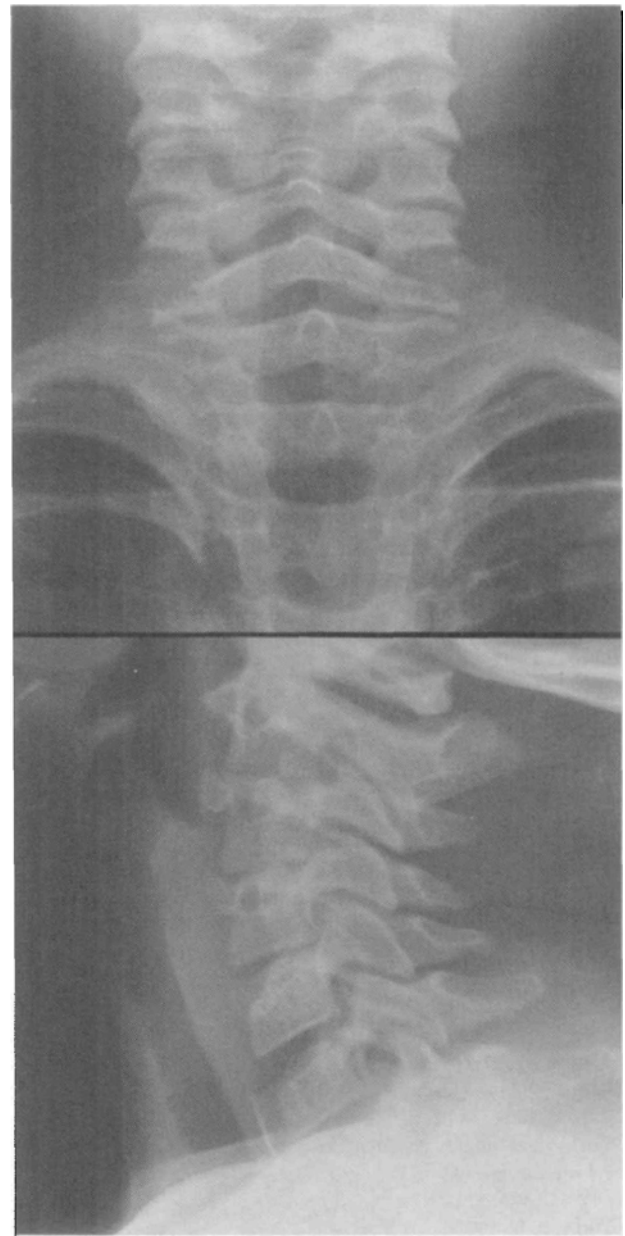


FIGURE (Top) Antero-posterior neck radiograph of the patient. (Bottom) Lateral neck radiograph of the patient.

Aluminium is markedly less radiodense than steel and many other metals. The "radiographic invisibility" of aluminum foreign bodies has been reported previously<sup>1-5</sup> but is less well recognized in the anaesthesia and surgical literature. The case emphasizes the importance of clinical presentation in cases of foreign body ingestion or aspiration. Radiographic examination must be viewed as an *adjunct* to the history and physical examination. We live in a world filled with millions of aluminum objects sufficiently small as to be ingested or inhaled. Aluminum, and many other, foreign bodies may be difficult or impossible to detect radiographically. A high index of suspicion is required for effective care.

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## REFERENCES

- 1 *Burrington J.* Aluminum "pop tops". A hazard to child health. *JAMA* 1976; 235: 2614-7.
- 2 *Driscoll P, Shand J, Tullett W.* The problems of aluminium as a foreign body [Letter]. *Injury* 1986; 17: 143-4.
- 3 *Hewitt G.* An aluminium foreign body in the oesophagus. *Ulster Med J* 1992; 61: 106-7.
- 4 *Jeffers RG, Weir MR, Wehunt WD, Carter SC.* Pull-tab - the foreign body sleeper. *J Pediatr* 1978; 92: 1023-4.
- 5 *Stewart GD, Lakshmi MV, Jackson A.* Aluminium ring pulls: an invisible foreign body. *J Accid Emerg Med* 1994; 11: 201-3.