A compromising paediatric airway, secondary to a mediastinal mass and tracheal compression: a challenging scenario

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DESCRIPTION

A 5-year-old boy presented to the emergency department, with 10 days history of dry cough, increasing shortness of breath, blue coloured lips and facial puffiness.

On examination, respiratory rate was 20 breaths/min, oxygen saturations was 98% on room air, and on inspection the child had facial swelling, associated with prominent neck veins. On auscultation of the chest bilateral wheeze with harsh breath sounds were heard.

A chest radiograph revealed enlarged soft tissues in the upper mediastinum, with a normal heart size and lung fields (figure 1). A CT scan of chest was performed which revealed a non-enhancing anterior mediastinal mass causing superior vena cava compression and displacement of the great vessels with significant tracheal compression above the carina (figures 2 and 3). The lower tracheal calibre at level of carina was reduced to approximately 5 mm (figure 4).

Following referral to the paediatric unit, mediastinal biopsy was planned. During anaesthetic induction the patient developed complete airway obstruction due to extrinsic tracheal compression. The ear, nose and throat surgeon performed a rigid bronchoscopy and successfully re-established an airway. A diagnosis of T-cell lymphoblastic lymphoma was confirmed from bone marrow biopsy.

T-cell lymphoblastic lymphomas present as a mediastinal mass in 50–75% of patients and may cause dyspnoea and chest pain, or progress to life-

Figure 2 Cross-sectional CT demonstrating superior vena cava obstruction with collateral formation.

threatening compression of the superior vena cava or tracheobronchial tree, as demonstrated in this case.¹ Literature also highlights a key learning point that general anaesthesia should be avoided where possible in high risk patients with an anterior mediastinal mass.²

Figure 3 Cross-sectional CT demonstrating tracheal compression above the carina.

Figure 1 Posteroanterior erect chest x-ray demonstrating enlarged soft tissues.

Figure 4 Coronal reconstruction of CT demonstrating significant tracheal compression (5 mm).

To cite: Akhtar A, Thornbury GD, Low B. *BMJ Case Reports* Published online: 4 December 2012
doi:10.1136/bcr-2012-007282

Learning points

- ▶ This highlights the significance of recognising superior vena cava and tracheal obstruction, and the need for forethought of malignancy as a differential diagnosis when initially presented with a child with non-specific symptoms.
- ▶ Mediastinal masses can be anaesthetic challenge, however careful preprocedure preparation and anticipation of potential complication is the key to success.
- ▶ Literature also highlights a key learning point that general anaesthesia should be avoided where possible in high risk patients with an anterior mediastinal mass.

Competing interests None.

Patient consent Obtained.

REFERENCES

- 1 Head DR, Behm FG. Acute lymphoblastic leukemia and the lymphoblastic lymphomas of childhood. *Semin Diagn Pathol* 1995;12:325–34.
- 2 Blank RS, de Souza DG. Anesthetic management of patients with an anterior mediastinal mass: continuing professional development. *Can J Anaesth* 2011;58:853–9, 860–7.

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