The possibility of a germinative cell tumour was considered so performed as previously described. A chest x-ray showed almost complete opacification of the lower two-thirds of the left hemithorax. This lesion showed areas of lower attenuation interspersed with areas of soft tissue attenuation (figure 1). The boy was successfully treated with antibiotics for lower airways infection but tachypnoea persisted and the x-ray showed no change after 6 weeks. A CT scan was performed and showed a heterogeneous mass in the anterior mediastinum, predominantly on the left side, occupying most of the left hemithorax. This lesion showed areas of lower attenuation interspersed with areas of soft tissue attenuation (figure 2).

We found a significant correlation between the absolute number of circulating CD34+ cells and the absolute number of circulating endothelial stem cells (r² = 0.593, p<0.0001; see figure 1 in online supplement). There was also a significant correlation between the percentage of circulating endothelial stem cells and the number of pack-years smoked (r² = 0.42, p<0.05; see figure 2 in online supplement). No significant correlation was found between total and endothelial stem cell numbers and HRCT score of pulmonary emphysema (figure 1), lung function data or smoking status (current vs ex-smokers). These data indicate that the number of circulating endothelial stem cells is not related to the presence and/or severity of the pulmonary emphysema or the presence or absence of COPD.


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Image 1: Chest x-ray showing opacification of the lower two-thirds of the left hemithorax. Part of the left upper lobe is still aerated.
taneous biopsy of the lesion was performed using a 14-gauge Tru-cut needle and fragment analysis was compatible with thymic tissue. Despite orientation for oral corticosteroids, the child did not receive the medication and the family did not come back for follow-up. Six months later the boy developed intense dyspnoea, cyanosis and other signs of respiratory insufficiency and was brought to our hospital. A new chest x-ray showed complete opacification of the left hemithorax with mediastinal shift towards the right. Surgery was indicated based on the respiratory condition, with removal of 830 g of homogeneous pale tissue. Microscopy findings showed preservation of the normal thymic architecture. The appearance was compatible with true thymic hyperplasia (figure 3). Postoperative recovery was uneventful and the patient was discharged from the intensive care unit on the third postoperative day with a normal respiratory pattern.

Massive true thymic hyperplasia is a rare benign entity. Although no specific data have been published, it is believed that its incidence in Brazil is the same as that reported in other parts of the world. It can be asymptomatic or can present with symptoms resulting from airway and lung parenchymal compression. True thymic hyperplasia corresponds to thymic enlargement without alteration of normal histology and architecture. It is different from thymic hyperplasia associated with myasthenia gravis and autoimmune diseases where lympho-follicular hyperplasia occurs, usually not accompanied by a marked increase in thymic size.

Anterior mediastinal masses are usually asymptomatic but occasionally produce symptoms related to compression of adjacent structures. These lesions infrequently can cause acute life-threatening respiratory compromise. Although rare, true thymic hyperplasia should be considered in the differential diagnosis of anterior mediastinal masses in children and young adolescents.

**Learning points**
1. True thymic hyperplasia should be considered in the differential diagnosis of anterior mediastinal masses in children and young adolescents.
2. Anterior mediastinal masses can occasionally produce symptoms related to compression of adjacent structures.

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**Figure 2** CT scan of the chest. (A) Mediastinum and (B) lung windows showing a heterogeneous mass with areas of low attenuation interspersed with areas of soft tissue attenuation in the anterior mediastinum, occupying most of the left hemithorax.

**Figure 3** Homogeneous whitish tissue removed during surgery, compatible with thymic hyperplasia.
Massive thymic hyperplasia presenting with respiratory insufficiency in a 2-year-old child

Gilberto Szarf, Thais Caldara Mussi de Andrade, Renato de Oliveira, Luiz Hiroshi Ota and Henrique M Lederman

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