ANSWER

From question on page 876

Because of the risk of bleeding through ultrasound guided transthoracic needle biopsy, the patient underwent video assisted thoracoscopic surgery for right lower lung biopsy. Histopathology of the biopsy specimens revealed collections of monotonous small lymphoid cells that were immunoreactive to CD20 but negative for CD3, CD5, CD43 and cyclin D1. Lymphoepithelial lesions and several caseating granuloma with Langhans' giant cells were also found (fig 1A, B).

The diagnosis of coexisting primary pulmonary B cell mucosa associated lymphoid tissue lymphoma (MALToma) and pulmonary tuberculosis in the same pulmonary region was made. A complete lymphoma staging work-up, including oesophagogastroduodenoscopy, revealed only pulmonary involvement. Treatment strategy was to first treat the tuberculosis with a 6 month antituberculosis therapy, and subsequently administer systemic chemotherapy for the lymphoma if the tumour progresses or related symptoms deteriorate.

DISCUSSION

Primary pulmonary non-Hodgkin's lymphoma (NHL) accounts for 3.6% of all extranodal NHL, and 69.4%–78% of these are MALToma.[1] It has an indolent clinical feature with a 5 year survival rate of more than 80%.[2] Prognosis does not vary significantly among treatment modalities, which range from surgical excision to single or multiple agent chemotherapy.[2]

The pathogenesis of pulmonary MALToma is not clear. Some reports have proposed its development to be associated with chronic inflammation and autoimmune diseases.[3] Askling and Ekbom have reported an increasing risk of NHL in patients following pulmonary tuberculosis infection without receiving efficient chemotherapy.[4] However, the coexistence of pulmonary MALToma and tuberculosis in the same pulmonary region has only been reported previously in one case, which presented as a coin-like lesion in the upper lung field.[5] It has been proposed that T cell and macrophage activation in tuberculosis induces B cell proliferation that leads to the development of MALToma.[5]

Pulmonary MALToma typically presents on chest CT as nodular lesions or linear areas of attenuation, consolidation without pleural effusion, tumour necrosis or lymphadenopathies.[6] Its presentation on radiographs differs when an infectious process is superimposed, as seen in our case. Moreover, the well known location of pulmonary tuberculosis, with upper lung predominance, varies depending on the host's immune status. Among immunocompromised individuals, ventrobasal infiltrates and hilar mediastinal adenopathies may be observed.[7] It is difficult to detect and differentiate these two disease entities from the perspective of clinical symptomatology alone, so a timely and accurate diagnosis relies on histopathological studies.

We report here the case of concurrent primary pulmonary MALToma and tuberculosis presenting with atypical clinical manifestations. Despite its rarity, this case highlights the possible coexistence of a pulmonary malignancy and a chronic infectious disease in the same pulmonary region. Investigating the causal relationship of these two disease entities may lead to further insight into the natural history and the pathogenesis of pulmonary MALToma.

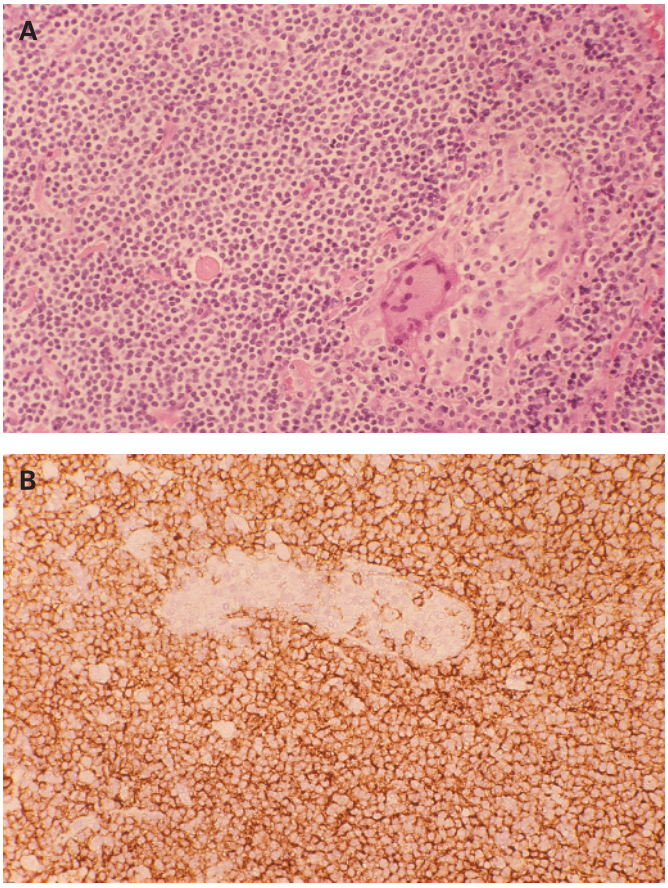

Figure 1 Histopathology and immunohistochemical findings. (A) The mucosa associated lymphoid tissue lymphoma (MALToma) cells were small, monotonous with cleaved nuclei and admixed with caseating granuloma and multinucleated giant cells (stain: haematoxylin and eosin; original magnification ×66). (B) The MALToma cells were immunoreactive to CD20.

Thorax 2008;**63**:932. doi:10.1136/thx.2007.091736a

REFERENCES

1. **Fiche M,** Capron F, Berger F, *et al*. Primary pulmonary non-Hodgkin's lymphomas. *Histopathology* 1995;**26**:527–9.
2. **Cordier JF,** Chailleux E, Lauque D, *et al*. Primary pulmonary lymphoma. A clinical study of 70 cases in non-immuno-compromised patients. *Chest* 1993;**103**:201–8.
3. **Isaacson PG.** Mucosa-associated lymphoid tissue lymphoma. *Semin Hematol* 1999;**36**:139–47.
4. **Askling J,** Ekbom A. Risk of non-Hodgkin's lymphoma following tuberculosis. *Br J Cancer* 2001;**84**:113–15.
5. **Inadome Y,** Ikezawa T, Oyasu R, *et al*. Malignant lymphoma of bronchus-associated lymphoid tissue (BALT) coexistent with pulmonary tuberculosis. *Pathol Int* 2001;**51**:807–11.
6. **Wislez M,** Cadranel J, Antoine M, *et al*. Lymphoma of pulmonary mucosa-associated lymphoid tissue: CT scan findings and pathological correlations. *Eur Respir J* 1999;**14**:423–9.
7. **Van Dyck P,** Vanhoenacker FM, Van den Brande P, *et al*. Imaging of pulmonary tuberculosis. *Eur Radiol* 2003;**13**:1771–85.