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CASE FOR DIAGNOSIS

A young female with fatigue and dyspnoea

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Case history

A 25-yr-old female was admitted to hospital due to fatigue and dyspnoea for a duration of 3 months. Difficulty in breathing occurred during physical activity and in stressful situations, but also sometimes during bed rest, and was associated with the feeling of palpitations. The patient smoked 30 cigarettes·day^{-1} (total 8 pack-yrs) and took no medication. The patient's personal and family history was uneventful. There was no recent history of travelling. She worked as a clerk and noticed no change in symptoms at work or over the weekends.

The patient was overweight (body mass index 31.5 kg·m^{-2}) and had a normal body temperature on clinical examination. Her blood pressure was 120/80 mmHg, heart rate 76 beats·min^{-1} and respiratory rate 20 breaths·min^{-1}. No crackles were heard during auscultation. The blood tests showed no abnormalities, specifically no anaemia nor inflammatory signs. A chest radiograph and ECG were performed, and showed normal results. Pulmonary function tests demonstrated normal static and dynamic lung volumes, but a mild reduction in diffusing capacity (70% predicted). A computed tomography (CT) of the chest was performed because of the smoking history and the reduced diffusion capacity (fig. 1).

Serological tests for HIV and systemic vasculitic diseases were negative. The tuberculin test showed no reaction. Metastatic disease of the lung was suspected and a search for a primary tumour was commenced. Skin and retina showed no suspicious lesions regarding melanoma. A gynaecological examination, including mammography and ultrasound of the breasts, showed normal results, as well as ultrasounds of the thyroid and abdomen.

The patient, who was afraid of having a malignant tumour, asked for a second opinion and was admitted to the authors' clinic. The differential diagnoses included metastases, infectious, inflammatory or granulomatous lung diseases. Due to the lack of diagnosis from noninvasive diagnostic procedures, bronchoscopy with bronchoalveolar lavage and transbronchial biopsy was discussed prior to video-assisted thoracoscopy. However, the patient requested a straightforward approach with the highest chance of diagnosis and, therefore, a video-assisted thoracoscopic wedge resection with histopathological examination of a subpleural nodule of the right lower lobe was performed (figs 2–4).

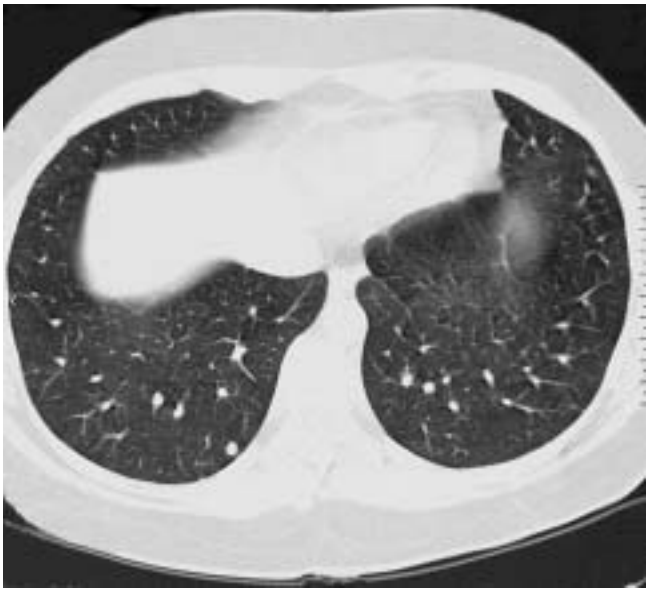

Fig. 1. – Thin section computed tomography of the chest.

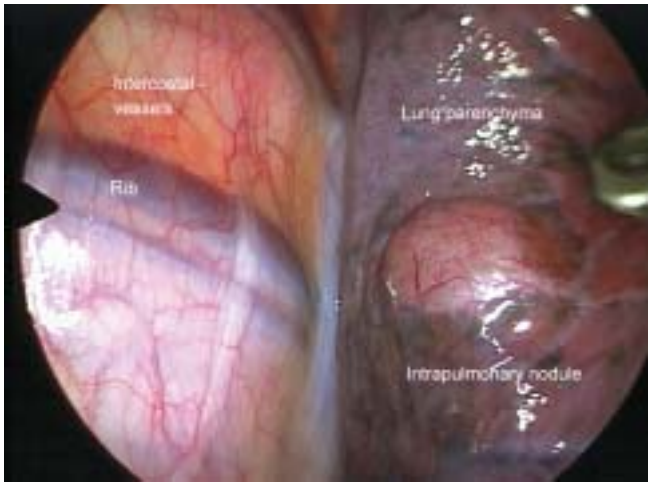

Fig. 2. – Thoracoscopic view of an intrapulmonary nodule in the basal-posterior segment of the right lower lobe.

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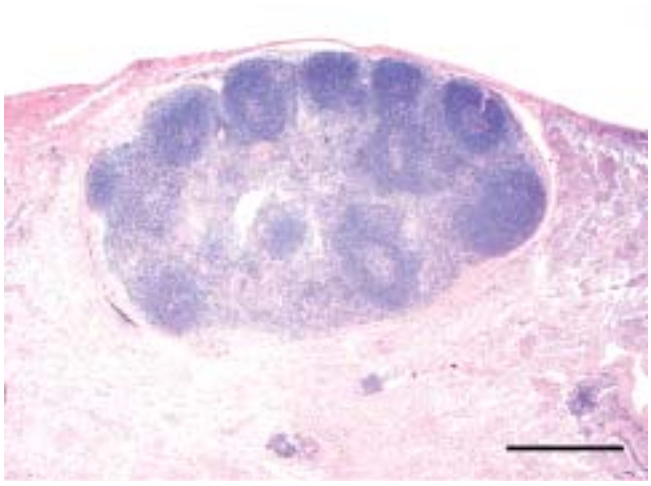

Fig. 3. – Frozen section of the intrapulmonary nodule. Scale bar=1 mm.

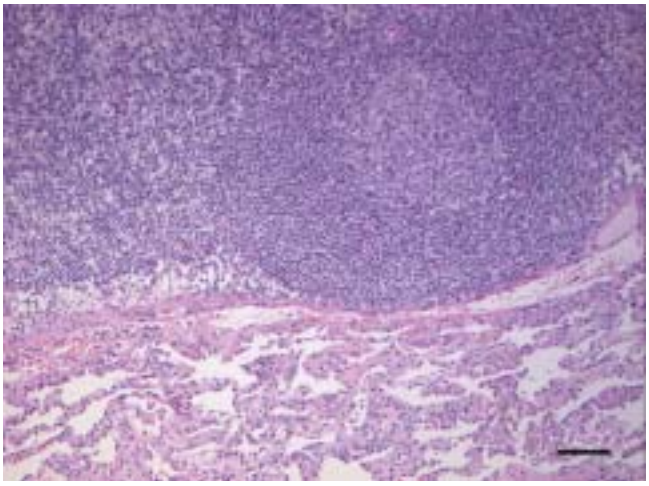

Fig. 4. – High-power frozen section of the intrapulmonary nodule–lung parenchyma interface. Scale bar=100 μm.

BEFORE TURNING THE PAGE, INTERPRET THE CHEST RADIOGRAPH AND THE HISTOPATHOLOGY FIGURES, AND SUGGEST A DIAGNOSIS.

Interpretation

The thin-section CT scan (fig. 1) shows multiple well-circumscribed, round nodules measuring 3–5 mm in diameter in the subpleural space of both lower lobes.

The frozen section (figs 3 and 4) revealed an intrapulmonary lymph node with follicular hyperplasia, increased intra-alveolar macrophages, anthracosis and a slight interstitial fibrosis.

Diagnosis: Intrapulmonary lymph nodes (IPLN)

Discussion

IPLN are a rare clinical entity. The aetiology and clinical relevance of IPLN are unclear [1]. Due to the increasing use of CT and high-resolution CT (HRCT) in general investigations of pulmonary problems, the differential diagnosis of previously undetected small pulmonary nodules has become more important. One larger study by BANKOFF *et al.* [2] evaluated the prevalence of IPLN and assessed their appearance on CT. The study demonstrated that they are discovered frequently in patients who undergo mini-thoracotomies for the evaluation of pulmonary nodules detected by CT, as in the current patient. Most IPLN are uncalcified, well circumscribed, round or oval, and located in the lower lobes in the subpleural space. They are found more frequently in males and smokers [2–5]. These findings are different from intrapulmonary calcifications following varicella [6]. The majority of previously reported IPLN were not accompanied by primary or metastatic lung tumours. However, in the CT, IPLN are indistinguishable from primary lung cancer or intrapulmonary metastases. Additionally, in a patient with otherwise resectable primary tumour, misinterpretation of IPLN as metastases may be crucial in classifying a clinical stage and indications for surgery.

The dyspnoea of the patient was neither explained by the IPLN nor by the very mild interstitial fibrosis. In a smoking patient, respiratory bronchiolitis interstitial lung disease also has to be considered, but HRCT did not show features of this disease in the current patient. The stress-associated dyspnoea with palpitations suggested the possibility of panic disorder. A low-dose therapy with paroxetin was initiated accordingly; and in addition a proton pump inhibitor was given, assuming the possibility of gastrointestinal reflux. Under this treatment, the patient completely recovered from her symptoms. The current authors strongly advised the patient to stop smoking.

Intrapulmonary lymph nodes should be considered in the differential diagnosis of small single or multiple parenchymal nodules, particularly those located in the lower lobes. These lymph nodes do not have a specific computed tomography appearance and video-assisted thoracic surgery with histology is necessary in making a definite diagnosis and to exclude malignant disease.

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