

## Benign intercostal schwannoma mimicking a solitary metastasis from lung cancer

A 61-year-old woman who had suffered from cough and sputum was referred for the evaluation of chronic consolidation on the left lower lung (LLL). Before she visited our hospital, she had been taking antibiotics, having received a diagnosis of pneumonia. However, her symptoms and radiological consolidation on the LLL had not improved.

Chest radiography showed a dense consolidation on the LLL. Chest CT scan revealed a diffused consolidation combined with ground glass opacity on the LLL and a 2×1.5 cm heterogeneously enhanced mass with a smooth margin on the left seventh intercostal space (figure 1A, B). A percutaneous needle biopsy of the consolidative lesion on the LLL was performed. Histological examination revealed malignant cells along the alveolar septa (figure 2A, B), and this finding was interpreted as bronchioloalveolar carcinoma.

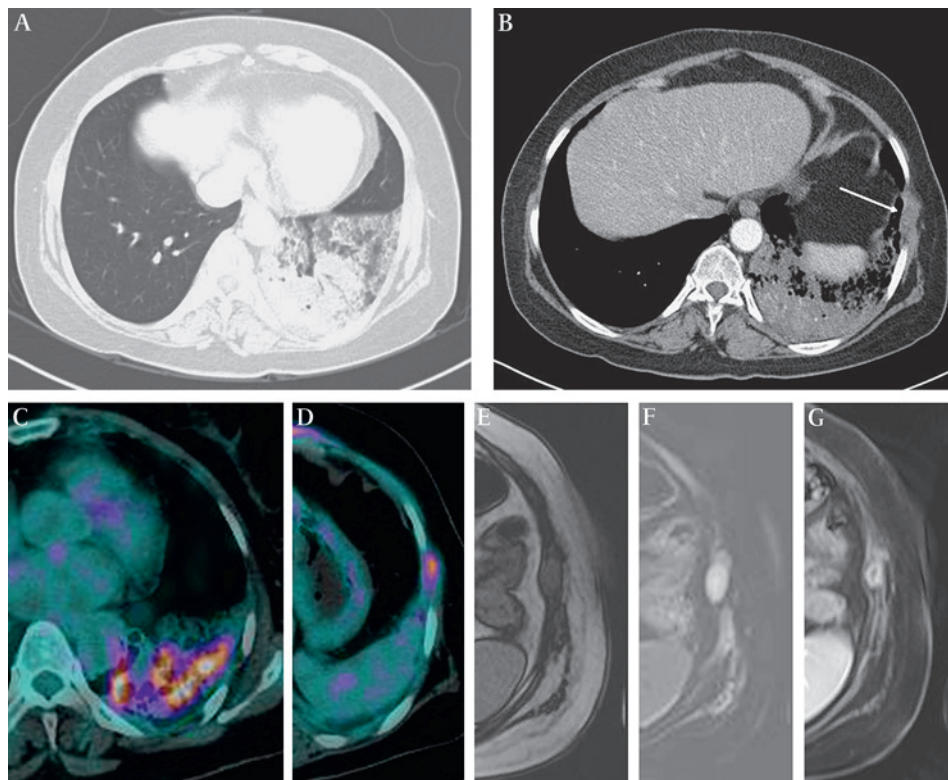
During staging investigation, integrated positron emission tomography using [<sup>18</sup>F]fluoro-2-deoxy-D-glucose (FDG-PET)/CT showed enhanced FDG uptake in the consolidative lesion of the LLL (maximum standardised uptake value (SUV<sub>max</sub>)=10.04) and in the left chest wall mass (SUV<sub>max</sub>=5.95) (figure 1C, D). On MRI with injection of gadolinium (0.1 mmol/kg body weight), the mass showed a low signal intensity on T1-weighted images and a high signal intensity on T2-weighted images with peripheral contrast rim enhancement (figure 1E–G). We

performed a needle biopsy of the mass to distinguish metastasis from benign tumour. The tumour was diagnosed as a schwannoma (figure 2C, D). The patient underwent left lower lobectomy for the lung cancer. Excision of the schwannoma was also performed. The pathological staging of the lung cancer was pT2N0M0. She underwent four cycles of adjuvant chemotherapy.

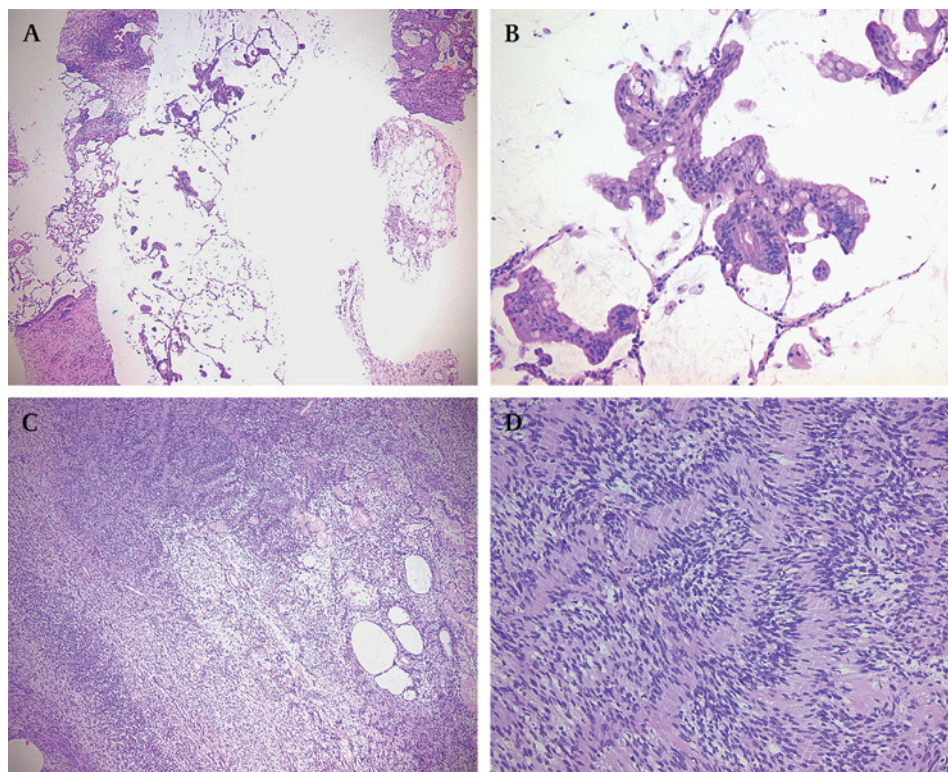
Schwannoma is a benign neurogenic tumour and is usually founded as a solitary lesion. Chest wall schwannoma is rare and usually asymptomatic. FDG uptake by schwannomas is variable, with a range of SUV<sub>max</sub> of 1.9–12.<sup>1 2</sup> Therefore, PET scan seems to have a limitation in distinguishing schwannomas from other malignant peripheral nerve sheath tumours.<sup>1 2</sup> Our present case is the first case of a benign intercostal schwannoma diagnosed simultaneously with bronchioloalveolar carcinoma. In this case, because the chest wall schwannoma mimicked metastasis, a biopsy of the mass was an important aspect of the decision regarding the treatment modality of the lung cancer.

### Learning points

- ▶ A benign tumour, a schwannoma which mimics metastasis, may present with lung cancer.
- ▶ Increased FDG uptake can be observed in a benign schwannoma as well as in a metastasis; hence a pathological confirmation should be considered in the case of lung cancer with suspicion of a single chest wall metastasis.



**Figure 1** (A, B) CT scan of the chest showed a diffused consolidation combined with ground glass opacity on the left lower lung (LLL) and a 2×1.5 cm heterogeneously enhanced mass (arrow) on the left seventh intercostal space. (C, D) [<sup>18</sup>F]fluoro-2-deoxy-D-glucose (FDG-PET)/CT showed enhanced FDG uptake in the consolidative lesion of the LLL and in the left chest wall mass. (E–G) Chest MRI revealed a mass with a smooth margin, which shows a low signal intensity on T1-weighted images (E) and a high signal intensity on T2-weighted images (F) with a peripheral contrast rim enhancement on T1-weighted images obtained after an intravenous gadolinium infusion (G).



**Figure 2** (A, B) Histological findings of the lung mass. (A) Tumour cells grow along the alveolar walls in a lepidic fashion with preservation of the parenchymal architecture (H&E staining,  $\times 20$ ). (B) Well-differentiated mucin-containing columnar cells line the alveolar spaces without invading the stroma (H&E,  $\times 200$ ). (C, D) Histological findings of the chest wall mass. (C) There is a mixture of a hypercellular area (left upper, Antoni A) and a hypocellular area (right lower, Antoni B) with microcysts (H&E,  $\times 20$ ). (D) Elongated tumour cells are arranging in a palisade pattern to form Verocay bodies (H&E,  $\times 200$ ).

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