AMYLOID DEPOSITION IN LUNG MALIGNANCY: NOT ALL ^{18}F-FDG UPTAKE IS A SIGN OF LOCAL AL AMYLOIDOSIS

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Case

A 66-year-old female with biopsy-proven AL amyloidosis was referred to our hospital for the further evaluation of onset of polyneuropathy, nephrotic syndrome and a coincidental finding on a pulmonary CT-scan.

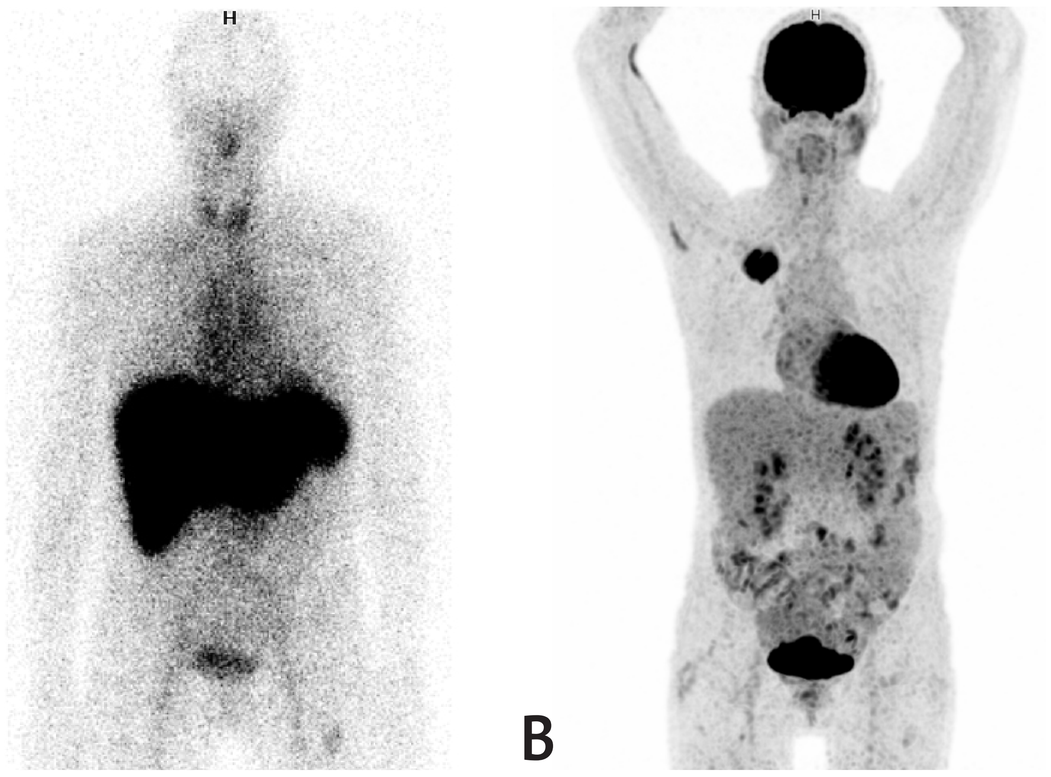

Figure 1. Planar Serum Amyloid P component (SAP) scintigraphy images show increased specific uptake in the liver, and spleen (A). Whole body FDG-PET scan shows increased uptake within the tumour lesion in the right upper lobe (B).

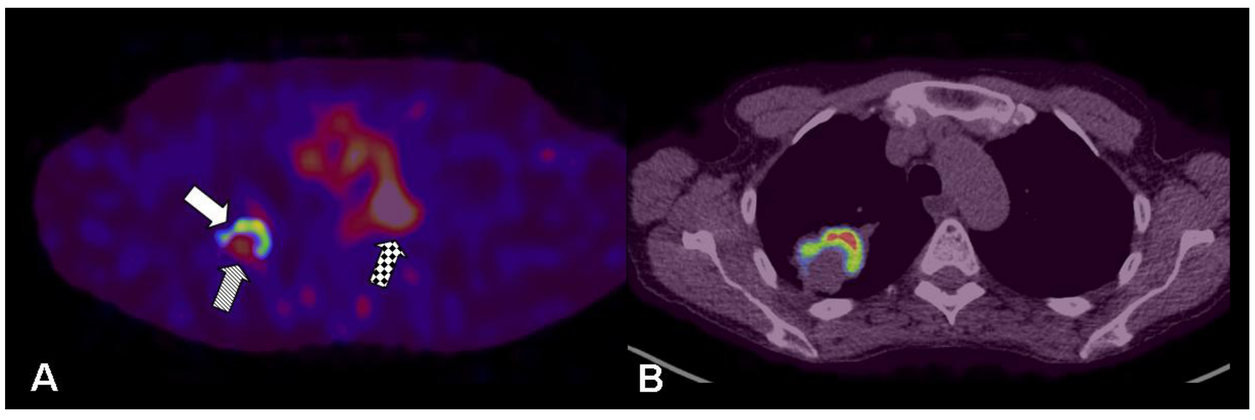

Figure 2. Fused image of SAP-scan (striped arrow specific amyloid binding; checked arrow bloodpool) and FDG-PET (white arrow) show central SAP-accumulation with no FDG-uptake within the center of the tumour. (A) Fused image of FDG-PET with CT-scan (B).

Results

The patient had a history of progressive sensory loss of her feet. Biochemical investigations showed an increased Alkaline Phosphatase of 621 U/l, an increased NT Pro-BNP of 1102 ng/l, proteinuria and a marginally increased Lambda Free Light Chain of 40 mg/l.
The SAP-scan showed a strongly increased SAP binding within the liver and spleen. Also it showed some SAP accumulation within the pulmonary mass in the right upper lobe. The FDG-PET showed increased FDG-uptake within the pulmonary mass, with signs of a necrotic centre. No other pathological FDG-uptake was reported elsewhere within the body.
It was concluded that due to the size and CT characteristics a malignancy was the most likely diagnosis and a lobectomy was performed. Afterwards the pathology report confirmed an adenocarcinoma with central deposition of amyloid instead of necrosis.

Figure 3. Congo red-stained tumour tissue shows amyloid depositions around vessels as well as intersitium.

Conclusion

- We postulate, in contrast to normal lung tissue, the changed microenvironment in malignant lung tissue favoured deposition of AL amyloid.

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