A 48-year-old woman who worked as a personal trainer had a lung lesion detected incidentally on magnetic resonance imaging of the cervical spine performed for radiculopathic symptoms. She had no respiratory symptoms but smoked occasionally with a 13 pack year history. She was otherwise fit and well with no relevant past medical history. Examination and routine blood tests were normal. A contrast-enhanced computed tomography (CT) scan of the chest and abdomen was performed. Two spiculate masses were present within the right upper lobe, within the apical segment measuring 25 mm (arrow, Fig. 1A) and anterior segment measuring 9 mm (arrow, Fig. 1B). Of note, the lesions were of fat density (mean −30 Hounsfield units; arrow, Fig. 1C). 18F-Fluorodeoxyglucose (18F-FDG) positron emission tomography (PET)-CT scan showed increased uptake in the larger lesion (SUV 5; arrow, Fig. 1D) but with no evidence of local or distant spread. In view of the patient’s good performance status (zero), smoking history, imaging findings strongly suggestive of malignancy (spiculate structure and increased avidity on PET-CT), and lesions being confined to a single lobe, a decision was made to proceed directly to lobectomy after discussion at the local multidisciplinary meeting and in accordance with the patient’s wishes. Surgery was performed without incident, and her recovery was uneventful. Histological analysis did not reveal any evidence of malignancy but instead foci of lipoid pneumonia (LP; Fig. 2).

LP represents accumulation of lipid material in the alveoli, which may be because of aspiration/inhalation of exogenous fat or because of postobstructive accrual of endogenous lipid secretions. LP has a protean appearance depending on the nature and volume of the lipid aspirated, temporal frequency, and chronicity. Chronic exogenous lipid aspiration is recognized to produce irregular lung opacities due to secondary inflammation and fibrosis that can mimic carcinoma. Similarly, these lesions can be avid on PET due to inflammation and can, as in our case, corroborate false-positive designations of malignancy. Postoperatively the patient confirmed a history of fish oil nutritional supplement consumption, which may have been aspirated. Careful interrogation of CT images on mediastinal windows may reveal the fat density of such lesions, suggestive of LP that can be confirmed with percutaneous lung biopsy. This case of exogenous LP serves as a reminder to consider alternative diagnoses, to carefully review the medical history, and to proceed with further diagnostic tests before embarking on surgery when the history or imaging is atypical.

ACKNOWLEDGMENT

We thank Dr. Stuart Blackie for the histopathological image.

REFERENCES

FIGURE 1. Axial contrast-enhanced computed tomography (CT) scans through the upper thorax show speculate lesions in the right upper (A) and lower lobe (B), which had areas of fat density on mediastinal windows (C). Increased avidity was present on 18F-FDG positron emission tomography-CT (D).

FIGURE 2. Hematoxylin and eosin-stained section (×40 magnification) from right upper lobectomy specimen showing multiple fat globules (*) surrounded by giant cells (arrow) and embedded in fibrosis (arrowhead).