Solitary Pulmonary Nodule (SPN)
Clinical summary

• 60 year old smoker for 10 years who quit smoking 5 years ago

• Routine health check revealed a solitary lung nodule in right lung

• PET/CT performed for characterisation
FDG PET/CT shows a metabolically active lesion in the right upper lobe, consistent with malignant disease.
Clinical summary

- 40 year old non-smoker presents with 1 month history of dry cough
- CT scan revealed SPN in lower lobe of right lung
- PET/CT performed for characterisation
PET/CT findings

- SPN in lower lobe of right lung shows minimal tracer uptake in the periphery
- Histological examination did not demonstrate any malignant tissue
Clinical summary

- 80 year old man with incidental SPN on routine medical examination.
- PET/CT performed for characterisation and staging.
PET/CT findings

Lung lesion – metabolically active

21mm precarinal node – not active

Scan findings are consistent with a metabolically active right upper lobe lung malignancy without FDG avid locoregional or distant metastases.
Clinical summary

• 70 year old male with a solitary pulmonary nodule for investigation.
PET/CT findings

FDG avid solitary pulmonary nodule in the left upper lobe, with no other metabolically active disease.

Histopathology confirmed the diagnosis of adenocarcinoma.
Clinical summary

- 66 year old female with solitary pulmonary nodule in the right lower lobe for investigation.
PET/CT findings

Solitary subcentimeter non-FDG avid nodule in right lung with no associated changes elsewhere in the lungs.
Teaching points

• Metabolically active SPN needs histological confirmation of diagnosis (eg. malignant / infective / inflammatory).

• The negative predictive value of FDG PET/CT for malignancy is very high.

• Non-metabolically active SPN needs continued surveillance, as tumours with low intrinsic metabolic activity (such as BAC) are not excluded and warrant follow-up with CT after 3 months to look for the change in size and number.

• Lesions remaining unchanged on CT after 24 months are unlikely to be malignant and do not require any further intervention.


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Clinical summary

- 36 year old female with history of previous breast malignancy
- Follow-up CT scan showed multiple pulmonary nodules for characterisation
PET/CT findings

Whole body PET is negative for metabolically active pulmonary nodules with no associated lung changes
Clinical summary

- 67 year old man with rectal carcinoma for routine follow up
PET/CT findings

Non FDG avid subcentimeter lung nodules in right lung with associated benign changes in right apex and both lower lobes suggestive of benign nature
Teaching points

• Non FDG avid pulmonary nodules with associated benign lung changes are more likely to be benign.

• Non FDG avid multiple lung nodules with rest of the lungs not showing any associated benign lung changes are more likely to be metastatic unless proven otherwise.

• Very small pulmonary nodules (<6mm) are unlikely to be characterised on PET.