

PP-57**RARE FINDINGS OF MULTINODULAR GOITRE ON LUNG PERFUSION SCINTIGRAPHY OF A PATIENT WITH MALIGNANT MESOTHELIOMA**

<https://doi.org/10.15605/jafes.036.S83>

Ahmad Zaid Zainal, Boey Ching Yeen, Siti Zarina Amir Hassan

Nuclear Medicine Department, Kuala Lumpur Hospital, Malaysia

INTRODUCTION

Malignant mesothelioma is an aggressive cancer of thoracic pleural lining that often requires urgent attention and management. Any other underlying diseases or comorbidities such as thyroid disorder could influence overall patient care and outcome. Lung perfusion scintigraphy performed using radionuclide-labelled tiny particles of macroaggregated albumin (5-100 microns) may facilitate pre-operative differential lung function evaluation. We report and illustrate incidental findings of increased tracer uptake by multinodular goitre (MNG) on lung perfusion scintigraphy in a malignant mesothelioma patient.

RESULTS

63-year-old male, a chronic heavy smoker with underlying diabetes mellitus and hypertension presented with left pleural effusion. He was further managed and investigated. HPE of pleural biopsy (February 2019) confirmed features of malignant mesothelioma. As the pre-operative pulmonary spirometry test showed restrictive pattern, he was then referred for lung perfusion scintigraphy (April 2019) to determine differential function of right and left lung respectively which demonstrated severely reduced perfusion of the entire left lung. Incidental findings of increased tracer uptake also seen in the neck corresponding to an enlarged left thyroid lobe and multiple hypodense thyroid nodules; no gastric uptake visualised to indicate free pertechnetate and no renal activities noted to suggest right to left heart shunting. Quality control records showed good radiopharmaceutical labelling. Possible explanations include higher circulating tracer in view of the severely reduced left lung function and subclinical hyperthyroidism state. Upon further enquiry, we noticed that his prior imaging studies including the contrasted CT scan (January 2019) and fluorodeoxyglucose positron emission tomography scan (March 2019) had revealed features of MNG with retrosternal extension of the left lobe.

CONCLUSION

To our best knowledge, this is the first reported case of radionuclide-labelled macroaggregated albumin uptake by MNG in a patient with malignant mesothelioma. Biochemical correlation was suggested as this may help to ascertain possible additional comorbidity.

PP-58**WHOLE-BODY SESTAMIBI SCAN USEFULNESS AND DETECTION OF MULTIPLE BROWN TUMOURS**

<https://doi.org/10.15605/jafes.036.S84>

Ahmad Zaid Zainal, Syazana Suhaili, Siti Zarina Amir Hassan

Nuclear Medicine Department, Kuala Lumpur Hospital, Malaysia

INTRODUCTION

Radionuclide sestamibi scan with standard neck and mediastinum acquisition is an important modality to localise parathyroid lesion. Hyperparathyroidism can be associated with brown tumour or lytic bone lesion arising from excess osteoclast activity. Although bone scan is commonly used to evaluate brown tumour, parathyroid scan with whole-body image acquisition may also be deployed. We present a rare case of primary hyperparathyroidism in young adult complicated with brown tumour to highlight the usefulness of whole-body sestamibi scan.

RESULTS

30-year-old male with no prior comorbidity or family history of endocrine disorders had presented with non-traumatic right forearm and right mid shin swellings for two months in late 2020. These swellings caused some degree of discomfort, but he was otherwise asymptomatic. Radiographs revealed lucent bone lesions. He was then further investigated and found to have raised serum alkaline phosphatase (674 U/L), calcium (2.95 mmol/L) and parathyroid hormone levels (50.4 pmol/L). His renal profile and remaining routine blood investigations were unremarkable. Diagnosis of primary hyperparathyroidism was made, and he was referred for scintigraphy localisation of hyperfunctioning parathyroid gland. Single tracer sestamibi scan (9.3.2021) was performed using standard acquisition followed by planar whole-body imaging at delayed phase. Supplementary thorax and lower limb single photon emission computed tomography/computerised tomography (SPECT/CT) was also done. A parathyroid adenoma is seen at inferior pole of right thyroid lobe associated with multiple sestamibi-avid lytic lesions suggestive of brown tumours involving proximal right radius, right anterolateral 8th rib, distal third of left femur, proximal and distal end of left tibia, and mid shaft of right tibia.

CONCLUSION

Whole-body sestamibi scan appears not only useful to identify hyperfunctioning parathyroid lesion, but concurrently evaluate multiple brown tumours in a young adult with primary hyperparathyroidism. Information obtained may facilitate overall management including treatment of potential brown tumour related morbidities.