

Department of Nuclear Medicine

Whole body PET-CT Report

Name: Mrs.A.A.K.D.Wijesena

Age/Sex :56Y/F

Ref. No : RC00013608

Referred By:Prof.Jayantha Balawardhana

PET CT No:451/24

Date: 06.06.2024

Whole body F-18 Fluorodeoxyglucose (FDG) PET CT imaging was performed from the vertex to mid-thigh 60 minutes following intravenous administration of 4.53 mCi of F18 FDG using GE Optima 560 dedicated 8 slice/sec PET-CT system without breath holding instruction. Intravenous contrast enhanced CT scan was performed for anatomical localization and attenuation correction. The images were reviewed in axial, coronal and sagittal projections. A semi quantitative analysis of FDG uptake was performed by calculating SUV max value corrected for dose administered and patient body weight. The blood sugar level was 100 mg/dl at the time of injection of tracer.

Indication: Newly diagnosed patient with metastatic adenocarcinoma of right lung. PET CT scan being done for staging. Images were reviewed with recent CT scan of the chest done on 13.05.2024.

FINDINGS

Head and Neck

No FDG avid or non FDG avid focal parenchymal lesions are identified in the cerebral or cerebellar hemispheres or in the brain stem, which maintain it's normal CT morphology, attenuation characteristics and normal distribution of metabolic activity. The ventricular system, basal cisterns and cortical sulci are within normal limits. There are no areas of infarctions, intra axial or extra axial mass lesions. No metabolic abnormality is detected in the skull vault or base.

There are no significant mucopericosteal thickening, fluid levels or retention cysts in the paranasal sinuses which are clear bilaterally.

Mild degree of increase FGD avidity uptake is observed in bilateral lingual and palatine tonsils which are physiological.

The pharynx, larynx and para pharyngeal spaces maintain it's normal CT morphology and otherwise normal distribution of metabolic activity.

The orbits, globes, optic nerves and extra ocular muscles maintain it's normal CT morphology and normal distribution of metabolic activity.

There are few mild to moderate degree of FDG avid prominent lymphnodes with loss of it's normal fatty hila in the supraclavicular groups bilaterally, more in left side where the largest lymphnode measuring 8.9mm in diameter with SUV max of 3.84. Relatively larger lymphnode in right supraclavicular group measures 8.5mm in diameter with SUV max of 5.12.

No prominent, enlarged or FDG avid lymphnodes are present in rest of the neck.

No FDG avid or non FDG avid focal lesions are present in the bilateral parotid or submandibular glands which maintain it's normal size, shape, attenuation pattern and normal distribution of metabolic activity.

Left lobe of the thyroid gland is enlarged and has few non FDG avid low attenuated nodules within it. Largest nodule is in lower pole measuring 1.56x1.41cm in size and has a minute calcific focus within. Few slightly low attenuated non FDG avid nodules measuring upto 5.8mm in diameter are identified in the isthmus and right lobe as well. No FDG avid areas are identified in the thyroid gland.

Chest:

There is a moderate to severe degree of FDG avid, minimally enhancing area of consolidation in the anterior segment of upper lobe right lung superiorly and medially extending upto the hilum too surrounding and causing narrowing of the upper lobar and segmental bronchi. It measures 5.80x5.00x2.96cm in maximum sagittal, vertical and transverse dimensions respectively with SUV max of 11.57. Medially it impinges with the mediastinal pleura and laterally has an irregular margin. No cavitations or calcifications are identified within it.

Moderate degree of FDG area smaller area of consolidation is identified in anterior segment of right upper lobe infero-medially too measuring 2.43x2.40x2.03cm in maximum sagittal, vertical and transverse dimensions respectively with SUV max of 7.09.

Few small interrupted areas of minimally FDG avid as well as non FDG avid, non enhancing areas of consolidation are observed in rest of the right upper lobe which shows loss of volume too.

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Multiple minute non FDG avid parenchymal nodules are identified in rest of the right lung as well as left lung and are more marked in the former where the largest is in posterior basal segment measuring 3.4mm in diameter.

There are few varying degree of FDG avid, prominent and enlarged lymphnodes with loss of it's normal fatty hila in the mediastinum and hila bilaterally. Relatively larger lymphnodes in left upper paratracheal, pre tracheal, pre carinal, subcarinal and aorto-pulmonary window group measure 8.2, 11.3, 10.7, 8.7 and 10.0mm in diameters with SUV max of 3.81, 9.48, 11.02, 6.15 and 6.68 respectively. Relatively larger lymphnodes in right and left hila measure 10.2 and 8.7mm in diameters with SUV max of 6.24 and 5.35 respectively.

Great vessels of the mediastinum are within normal limits and mediastinal blood pool shows SUV max of 2.14.

Moderate degree of pleural effusion is present in right hemithorax. No pleural effusion is present in the left hemithorax. There is no pericardial effusion.

Few prominent and enlarged non FDG avid lymphnodes with preservation of it's normal fatty hila are observed in the axillae bilaterally and are most likely to be due to reactive hyperplasia. The largest lymphnode is in the left axilla measuring 1.19cm in diameter and relatively larger lymphnode in the left axilla measures 1.08cm in diameter. No prominent or enlarged or FDG avid lymphnodes are identified in the subpectoral or internal mammary groups.

No FDG avid or non FDG avid mass lesions or abnormal calcifications are identified in the breasts.

Abdomen and Pelvis

There are no FDG avid or non FDG avid focal lesions in the liver which is not enlarged, maintains it's smooth regular contour, normal uniform parenchymal attenuation pattern and normal distribution of metabolic activity (SUV max of 3.31). Intrahepatic and extra hepatic ducts are within normal limits. Portal venous and hepatic venous radicles are within normal limits. Main portal vein is normal in caliber and no filling defects are present within. Gall bladder maintains it's normal distensibility and mural thickness. No calculi are present within it.

No FDG avid or non FDG avid lesions are present in the pancreas, spleen, kidneys, adrenals, uterus or ovaries, which maintain it's normal CT morphology, attenuation characteristics and normal distribution of metabolic activity.

There are no prominent or enlarged or FDG avid lymphnodes in the para aortic, para caval, iliac or mesenteric groups.

No FDG avid or non FDG avid mass lesions are identified in the abdomen or pelvis. No localized fluid collection or free peritoneal fluid is present.

Normal distribution of the tracer in the small and large bowel are observed.

Few prominent and enlarged non FDG avid lymphnodes with preservation of it's normal fatty hila are identified in the inguinal groups bilaterally most likely representing reactive hyperplasia. Largest lymphnode is in the left inguinal group measuring 1.33cm in diameter and relatively larger lymphnode in the right inguinal group measures 1.29cm in diameter.

Musculoskeletal & Miscellaneous

There are multiple sclerotic areas of varying size, and shapes demonstrating mild to moderate degree of FDG avidity in the axial and appendicular skeleton. In the spine relatively larger lesions are identified in C3 vertebra (SUV max of 7.50), C6 vertebra (SUV max of 7.93), D8 vertebra (SUV max of 9.56), D10 vertebra (SUV max of 6.88), D11 vertebra (SUV max of 7.28), D12 vertebra (SUV max of 7.00), L1 vertebra (SUV max of 8.36), L2 vertebra (SUV max of 9.82), L3 vertebra (SUV max of 9.09), L4 vertebra (SUV max of 7.62) and L5 vertebra (SUV max of 7.03). In the sacrum relatively larger lesion is in right ala (SUV max of 5.02). However, height and shape of the vertebral bodies are maintained. There are no associated paravertebral or epidural soft tissue component.

Similar lesions are identified in hemipelvices bilaterally, (SUV max of right and left iliac bones 7.02 and 6.70 respectively, SUV max of right and left ischii 4.31 and 7.37 respectively and in the right bone SUV max of 4.84).

Few similar lesions are identified in scapulae (SUV max of right and left scapulae 4.99 and 2.78 respectively), head of right humerus (SUV max of 4.06), sternum (SUV max of 3.31) and in few ribs (eg right 4th rib and left 2nd rib showing SUV max of 4.79 and 2.76 respectively). There are no associated para osseous soft tissue components.

Evidence of internal fixation of fractured neck of left femur is observed.

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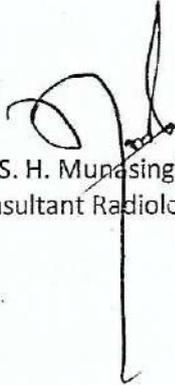
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IMPRESSION

The appearances are that of known adenocarcinoma in the upper lobe of right lung with bilateral pulmonary metastases, hypermetabolic metastatic adenopathy involving mediastinum, hila and supraclavicular groups bilaterally as well as hypermetabolic multiple osseous metastases.

pT₄ N₃ M_{1c} – Stage IV b

There is no metabolically hepatic metastases.



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