Department of Nuclear Medicine

Whole body PET-CT Report

Name : Mrs.Y.P.I.Kumari Age/Sex :46Y/F Ref. No : RC00013780

Referred By:Dr.Sujeewa Siyabalapitiya PET CT No:513/24 Date: 27.06.2024

Whole body F-18 Fluorodeoxyglucose (FDG) PET CT imaging was performed from the vertex to mid-thigh 60 minutes following intravenous administration of 4.21 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 108 mg/dl at the time of injection of tracer.

Indication: Newly diagnosed patient with metastatic non small cell carcinoma of lower lobe of left lung. PET CT scan being done to assess the disease burden. Images were reviewed with previous CT scan of the chest done on 04.06.2024.

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

The pharynx, larynx and para pharyngeal spaces maintain it's normal CT morphology and 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 two moderate degree of FDG avid enlarged lymphnode with loss of it's normal fatty hila in right sided level 4 and supraclavicular groups measuring 1.19 and 1.35cm in diameters with SUV max of 7.72 and 8.19 respectively. Two minimally FDG avid prominent lymphnodes with loss of it's normal fatty hila are observed in left sided level 4 and supraclavicular groups measuring 0.74 and 0.90cm in diameters with SUV max of 2.70 and 2.85 respectively.

No other prominent, enlarged or FDG avid lymphnodes are identified in the neck.

Moderate degree FDG avid thick walled cystic lesion is identified in superficial lobe of right parotic gland anteriorly measuring 1.89x1.79cm in size with SUV max of 5.90. Minimally FDG avid small lymphnode is identified in superficial lobe of right parotic gland posteriorly measuring 5.8mm in diameter with SUV max of 2.04. Rest of the right parotid gland maintains it's normal size, shape, attenuation pattern and normal distribution of metabolic activity.

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

Thyroid gland maintains it's normal size, shape, attenuation pattern and normal distribution of metabolic activity. There are no FDG avid or non FDG avid focal lesions within.

Chest:

Previously noted heterogeneously enhancing soft tissue density mass lesion in apical segment of lower lobe of left lung is identified as a strongly FDG avid solid parahilar mass lesion measuring 5.80x5.36x5.31cm in maximum vertical, sagittal and transverse dimensions respectively with SUV max of 19.90 in the current scan. No necrotic areas, fat or calcific densities are identified in the mass which occludes the apical segmental bronchus and causes narrowing of left main bronchus as well as rest of the lower lobar bronchi while partially encircling the adjacent thoracic aorta (>180).

There are multiple varying degree of FDG avid prominent and enlarged lymphnodes in the mediastinum and hila bilaterally. Largest nodal mass is in subcarinal region measuring 3.51x1.65cm in size with SUV max of 10.55, which causes mass effects and minimal narrowing of the right pulmonary artery. Relatively larger lymphnodes in right side of the superior mediastinum, pre aortic, right paratracheal, pre carinal and aorto-pulmonary window group measure 2.61, 1.98, 2.41, 2.24 and 1.89cm in diameters with SUV max of 8.76, 6.78, 7.68, 5.90 and 8.30 respectively. Relatively

larger lymphnodes in right and left hila measure 1.16 and 2.05cm in diameters with SUV max of 3.48 and 9.12 respectively.

There are few relatively larger non FDG avid parenchymal nodules in the lungs bilaterally, more in right lung where the relatively larger nodules in apical segment and anterior segment of upper lobe and posterior basal segment of lower lobe measure 2.14x1.57, 1.27x1.12 and 1.25x0.90cm in sizes respectively. Two relatively larger nodules in anterior segment of left upper lobe measure 0.71x0.27 and 0.60x0.39cm in sizes.

Additionally there are numerous minute non FDG avid nodules interspaced with thickened interstitium scattered in all three zones of the lungs bilaterally.

Small pleural effusion is evident bilaterally and there are minimally enhancing mild to moderate degree of FDG avid pleural based nodules in right upper zone posteriorly measuring upto 1.82x0.54cm in size with SUV max of 5.29. No similar nodules are identified in left hemithorax.

There is no pericardial effusion.

Minimally FDG avid prominent lymphnode is identified in right axilla measuring 6.3mm in diameter with SUV max of 2.83. No similar lymphnodes are identified in left axilla.

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

Abdomen and Pelvis

There is a moderate degree of FDG avid low attenuated nodule in the segment 8 of right lobe of the liver superiorly measuring 2.57x2.31cm in size with SUV max of 7.85. A slightly low attenuated mild to moderate degree of FDG avid nodule is identified in segment 6 of right lobe measuring 1.32x1.23cm in size with SUV max of 4.32. No other FDG avid or non FDG avid focal lesions are identified in the liver which is not enlarged, maintains it's smooth regular contour but, Riedel's lobe extends inferior to the level of lower pole of right kidney. Rest of the liver maintains it's normal uniform parenchymal attenuation pattern and normal distribution of metabolic activity (SUV max of 3.43). Intrahepatic and extra hepatic ducts are not dilated. 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 identified in the pancreas, spleen or adrenals, which maintain it's normal CT morphology, attenuation characteristics and normal distribution of metabolic activity.

Few small non FDG avid smooth walled cortical cysts are observed in the kidneys, more in left kidney measuring upto 9.8mm in diameter. No other non FDG avid or FDG avid focal lesions are identified in the kidneys which maintain it's normal size, shape, smooth regular contour, normal concentration of contrast and normal distribution of metabolic activity. No calculi are identified in the kidneys. There is no hydronephrosis or hydroureter. Urinary bladder is partially filled. No mass lesions or calculi are present within it.

Uterus is bulky and has few iso FDG avid low attenuated areas measuring upto 2.56cm in diameter within, most likely representing fibroids. A well marginated moderate degree of FDG avid soft tissue density nodular lesion is identified in left ovary measuring 3.75x2.75cm in size with SUV max of 7.60. A non FDG avid low attenuated bilocular cystic lesion is identified in the left ovary supero-lateral to former measuring 3.39x2.72cm in size. No fat or calcified are identified in the lesions. No similar lesions or other mass lesions are identified in right ovary which is normal in size, shape and attenuation pattern for the age of the patient.

There are multiple prominent and enlarged mild to moderate degree of FDG avid lymphnodes in the abdomen and pelvis. As reference, relatively larger lymphnodes in coeliac axis, porto-caval, retropancreatic, para aortic, paracaval and aorto-caval groups measure 10.3, 9.6, 9.8, 10.9, 6.8 and 8.0mm in diameters with SUV max of 5.07, 4.21, 4.77, 4.30, 2.52 and 4.39 respectively. Relatively larger lymphnodes in right and left common iliac groups measure 8.9 and 12.3mm in diameters with SUV max of 4.29 and 5.05 respectively.

No other 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.

Musculoskeletal & Miscellaneous

There are multiple moderate to severe degree of FDG avid sclerotic areas of varying size and shapes in the axial and appendicular skeleton. In the spine relatively larger lesion are identified in D3 vertebra (SUV max of 8.27), D10 vertebra (SUV max of 8.28), D12 vertebra (SUV max of 10.23), L1 vertebra (SUV max of 8.27), L3 vertebra (SUV max of 10.09), L4 vertebra (SUV max of

10.08) and L5 vertebra (SUV max of 12.16). In the sacrum relatively larger lesions are identified in left side of S1 segment (SUV max of 10.66) and S2 segment (SUV max of 10.31). 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 and largest lesion is in left ischium showing SUV max of 9.40. Lesions in right and left iliac bones shows SUV max of 4.74 and 4.45 and right and left pubic bones show SUV max of 5.18 and 3.80 respectively. Similar lesions are identified neck of left scapula (SUV max of 7.34) and in multiple ribs (Eg right 5th rib anteriorly (SUV max of 6.70) and left rib antero-laterally (SUV max of 3.90).

IMPRESSION

The appearances are that of known non small cell carcinoma in the apical segment of lower lobe of left lung with multiple pulmonary metastatic nodules as well as lymphangitis carcinomatosis bilaterally, hypermetabolic metastatic adenopathy involving bilateral hilar, mediastinal, lower cervical, supraclavicular, abdominal and pelvic groups as well as hypermetabolic hepatic and extensive osseous metastases. T_4 N_3 M_{1c} – Stage IV b

Moderate degree FDG avid thick walled cystic lesion in the superficial lobe of right parotic gland anteriorly with a minimally FDG avid small lymphnode in superficial lobe posteriorly. US scan of the parotid gland ± image guided biopsy is advised.

A well marginated moderate degree of FDG avid soft tissue density nodular lesion and a non FDG avid low attenuated bilocular cystic lesion in the left ovary. Correlation with serological findings are advised.

Dr. S. H. Munasinghe
Consultant Radiologist

20 JUN 2024

46yr/F, DM/HTN/DL.

Investigated for recurrent cough.

1. CT Scan of chest (04/06/2024

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malignant neoplastic lesion in left Lower lobe with partial encasement of descending thoracic aorta & evidence of lymphangitis.

B/L tiny pleural ~~effusion~~ nodules & small volume left Sided pleural effusion extensive mediastinal & right hilar lymphadenopathy

No adrenal metastasis. Solitary Liver metastasis in segment VIII & multiple bone mets in spine

DOA - 05/07/20

- BHT - CC 3324/20

DOD - 12/7/20.

Admitted due to SOB.

C/C - SOB + cough (+)

PMx / Ax / - NAD.

O/E. Afebrile.

creph (+)

O2, → tolerated ott.

CXR - no pleural effusion.

(carb + a.om) (1) - D8. Chemo.

Tr. gemcitabine 1250 mg ~~given~~ on 6/7/20)

S/C filgrastim 600 mg - (8/7/20)

(D) plan

R/v. Oh. (19/7/20)

(1) for next Chemo cycle. (c̄ FBC AST + ALT + SC)

(2) Routine medications.

omeprazole 20mg bd.

domperidone 10mg PS

pcm 1g scr

theophylline 125 mg bd.

Cetrizine 10 mg bd.

Piriton 4 mg ~N.

Amitryptyline 25 mg N

MDI salbutamol 400 ug - 6h

MDI seretide 250 ug - bd.