5th Masterclass in Lung Cancer – 22nd July 2022

Panel Discussion: Lung Carcinoid

Lung Carcinoid

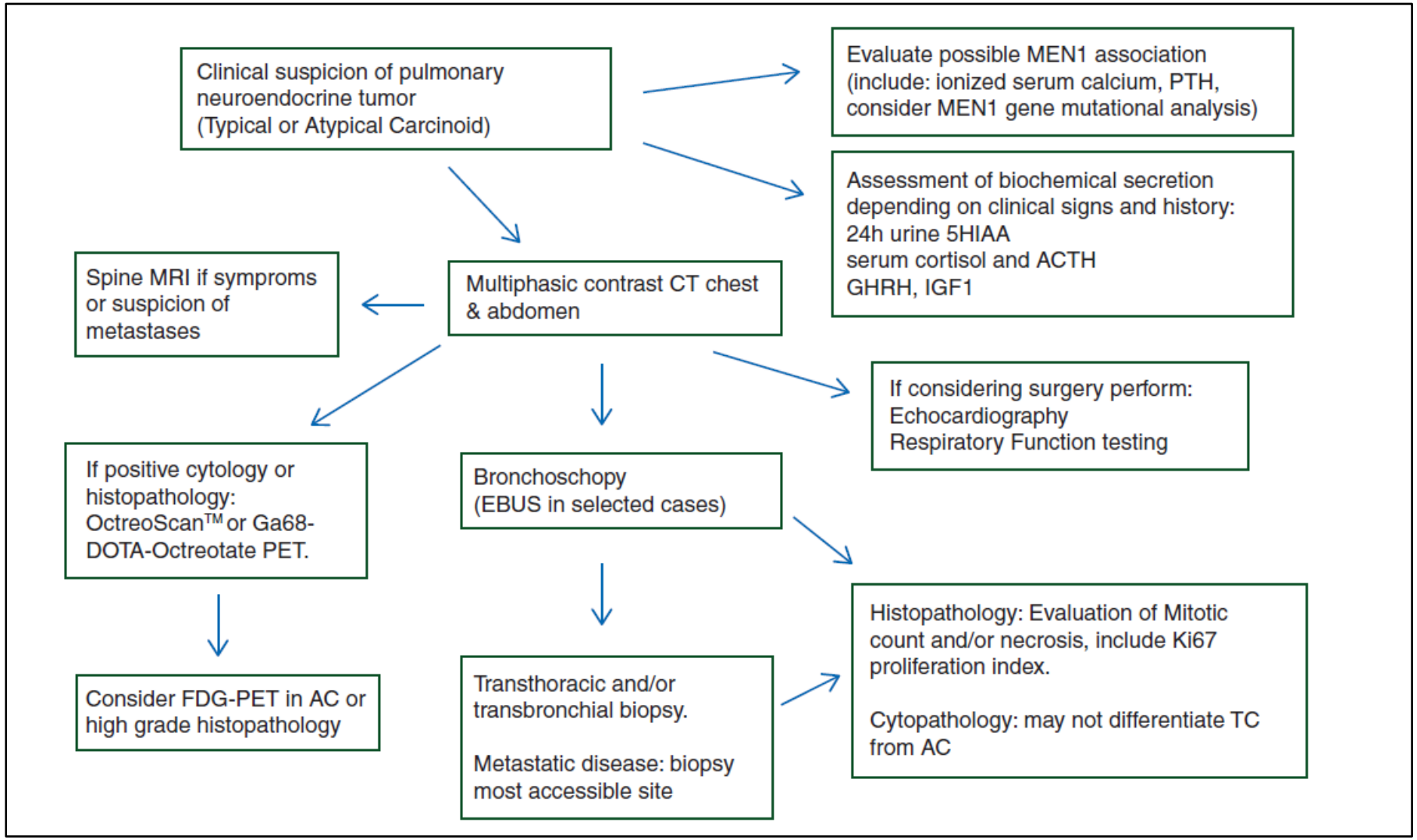
- Typical carcinoid (TC) tumors represent 1%–2% of lung tumors.
- In addition, 5%–15% have lymph node metastasis at presentation and 3% have distant metastasis.

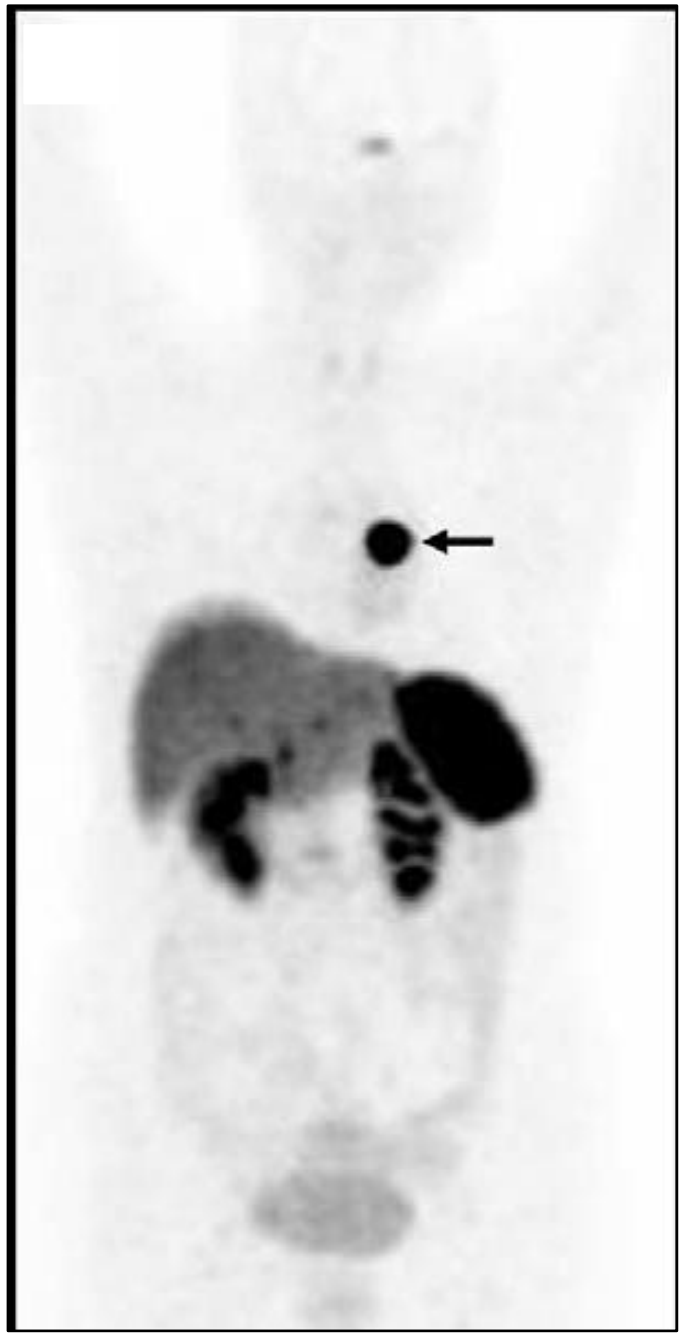
- Atypical carcinoid (AC) tumors represent 0.1%–0.2% of lung tumors, 40%–50% with LN mets at presentation, and 20% with distant mets

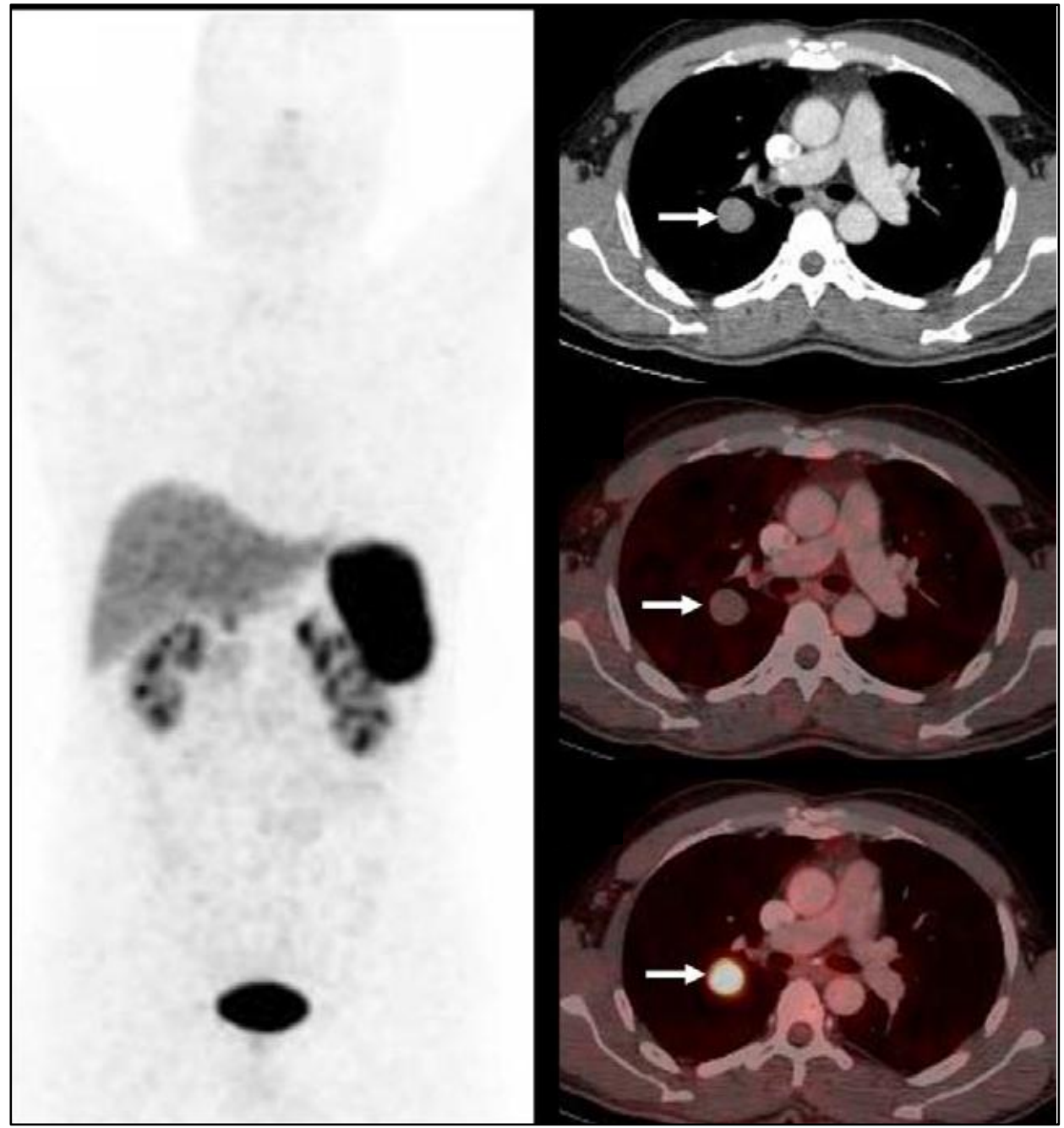
TC Stage	10-yr DSS	AC Stage	10-yr DSS
I	96	I	88
II	85	II	75
III	81	III	47
IV	59	IV	18

Pulmonary neuroendocrine (carcinoid) tumors: European Neuroendocrine Tumor Society expert consensus and recommendations for best practice for typical and atypical pulmonary carcinoids

Annals of Oncology 26: 1604–1620, 2015







Seminars in Diagnostic Pathology 38 (2021) 90–97

Contents lists available at ScienceDirect

Seminars in Diagnostic Pathology

journal homepage: www.elsevier.com/locate/semdp

Review article

Recent advances and current controversies in lung neuroendocrine neoplasms☆

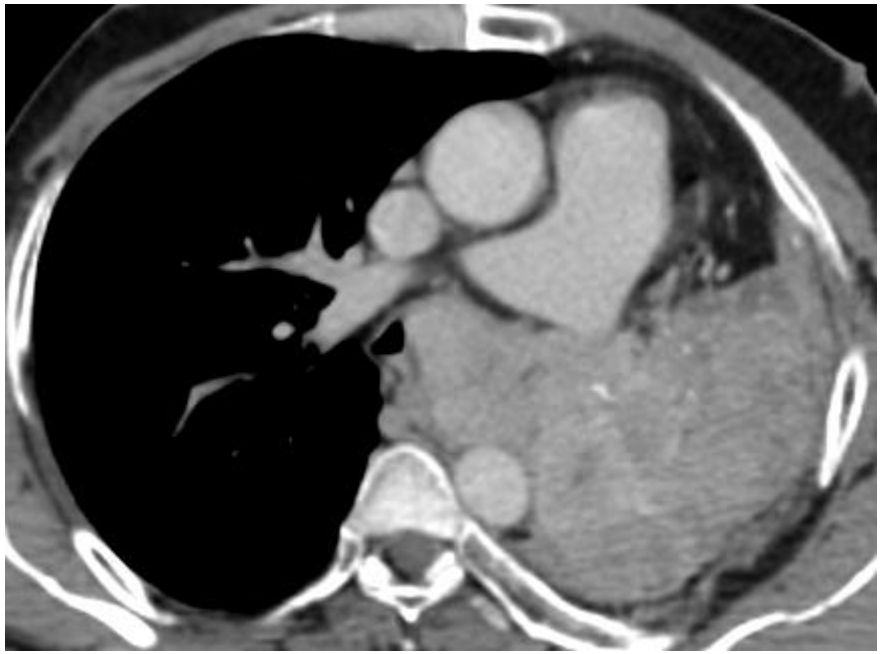
Tumor grading	NED	Diagnostic criteria for lung	Lung terminology
Low grade	WD	<2 mitosis per 2 mm^2; no necrosis	Typical carcinoid, G1
Intermediate grade	WD	2–10 mitoses per 2 mm^2 and/or punctate necrosis	Atypical carcinoid, G2
High grade	WD	>10 mitoses per 2 mm^2 and/or more extensive necrosis	Carcinoid with increased proliferation rates and/or Ki-67
High grade	PD	>10 mitoses per 2 mm^2; extensive necrosis; small cells (even chromatin & inconspicuous nucleoli)	NEC, small cell (SCLC), pure forms & combined variants
	PD	>10 mitoses per 2 mm^2; extensive necrosis; large cells (coarser chromatin, conspicuous nucleoli, NE markers)	NEC, large cell (LCNEC), pure forms & combined variants

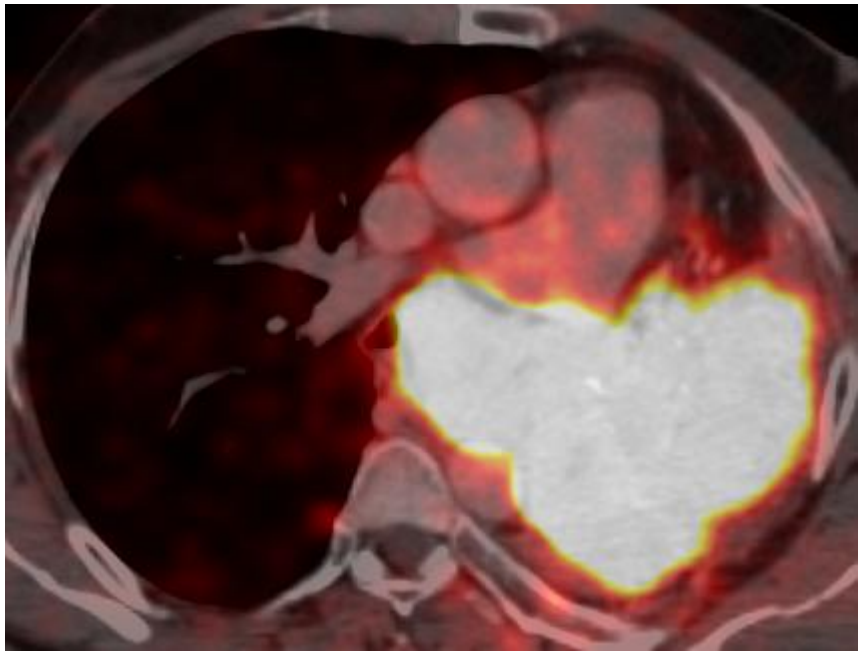
46/M, beedi smoker (Aug 2019)

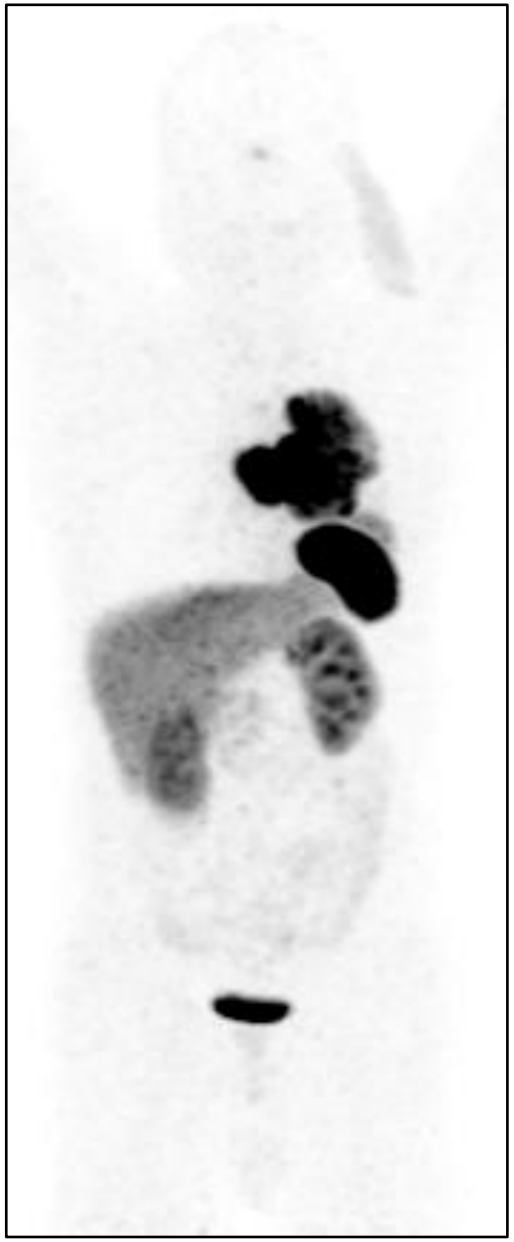
c/o increased breathlessness since 2 months, cough with whitish expectoration

FOB - growth in LMB with extrinsic compression of LMB

Biopsy- Typical carcinoid

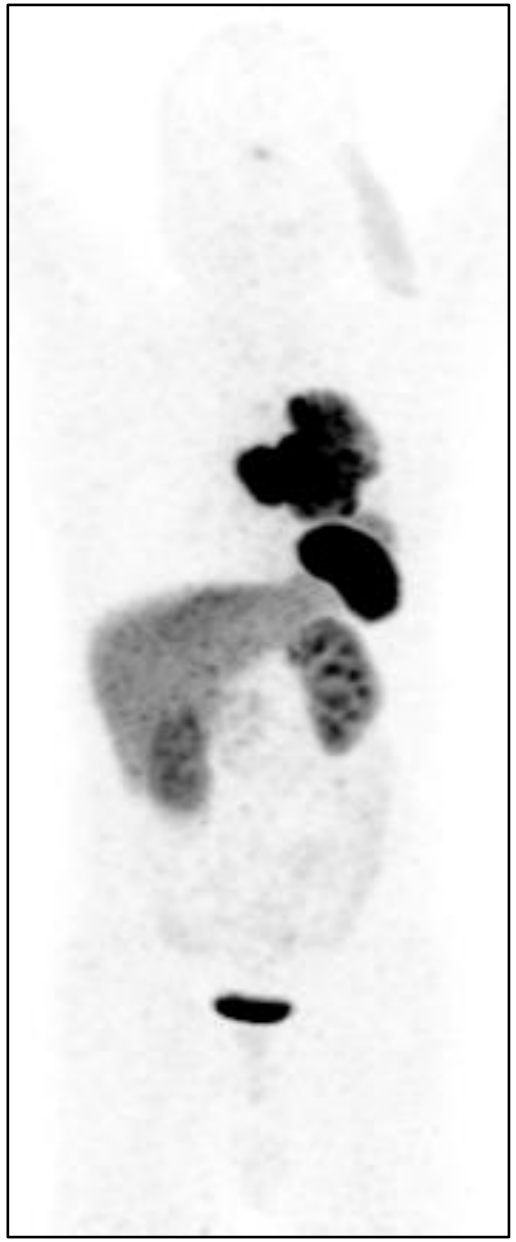






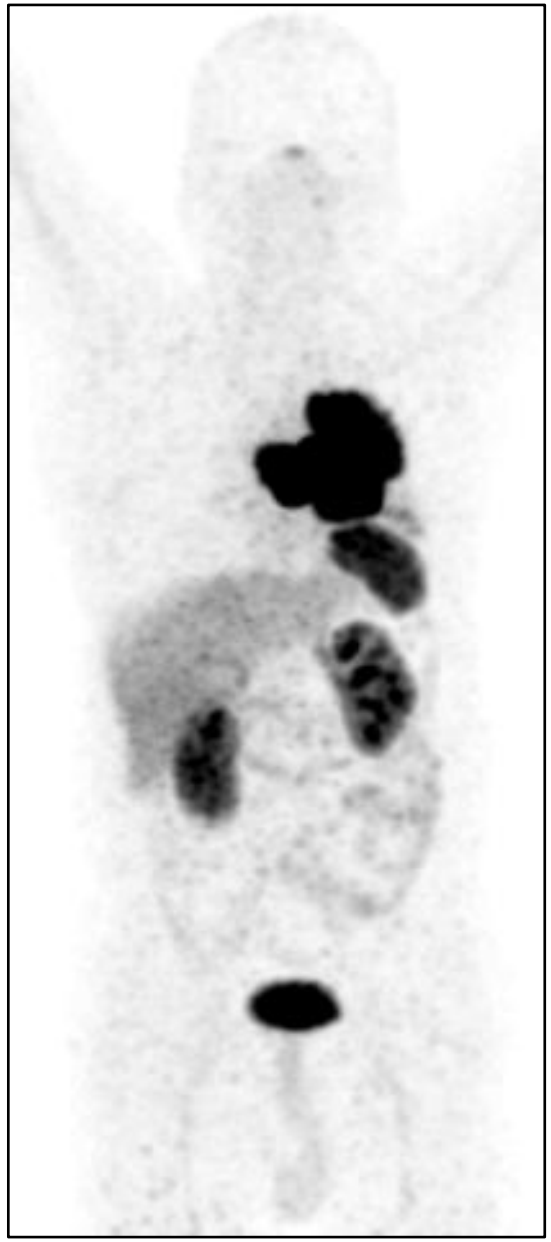
DOTATATE PET/CT

Surgery…..?????

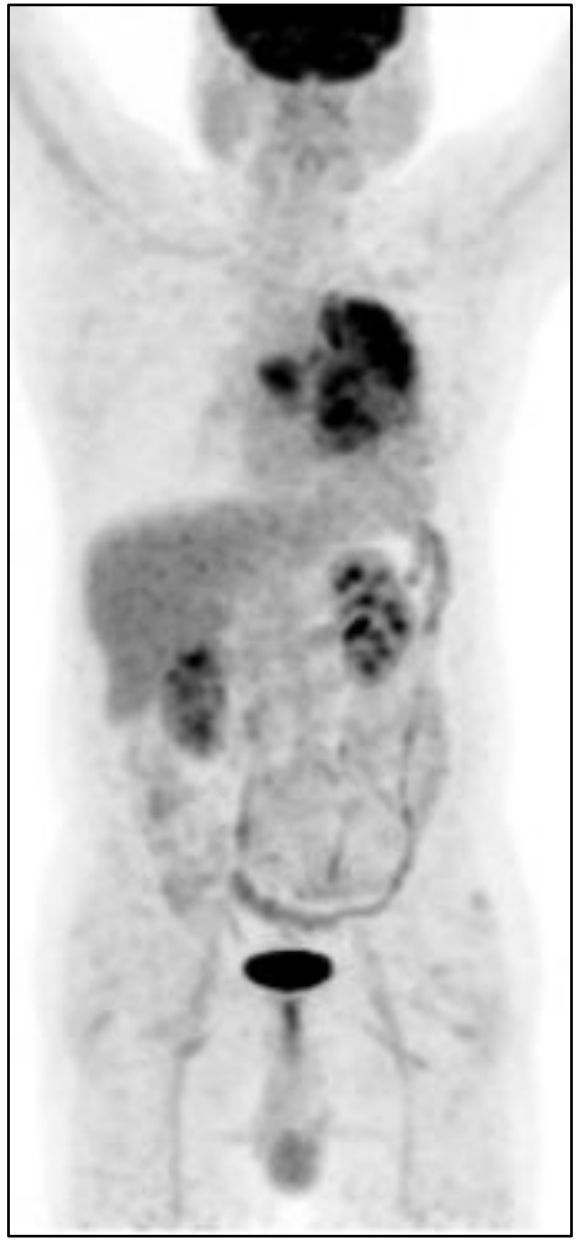


DOTATATE PET/CT

4# PRRT



DOTATATE PET/CT



FDG PET/CT

Original article

Nuclear Medicine Communications

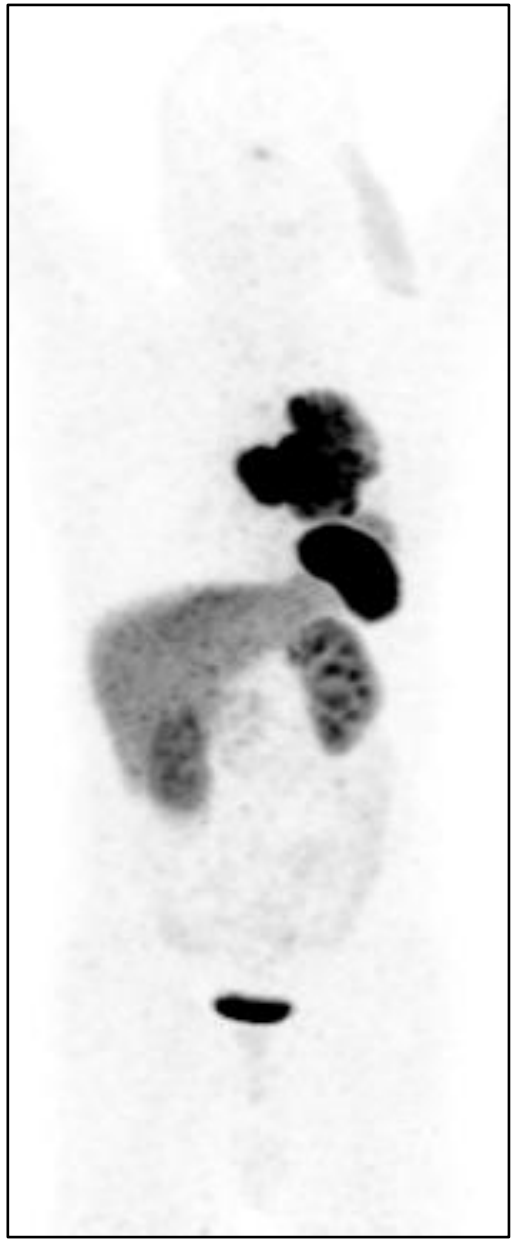
Does ^{68}Ga-DOTA-NOC-PET/CT impact staging and therapeutic decision making in pulmonary carcinoid tumors?

Nilendu C. Purandare[a], Ameya Puranik[a], Archi Agrawal[a], Sneha Shah[a], Rajiv Kumar[b], Sabita Jiwnani[c], George Karimundackal[c], C.S. Pramesh[c] and Venkatesh Rangarajan[a]

Nearly 10.2% of TC showed distant metastatic disease

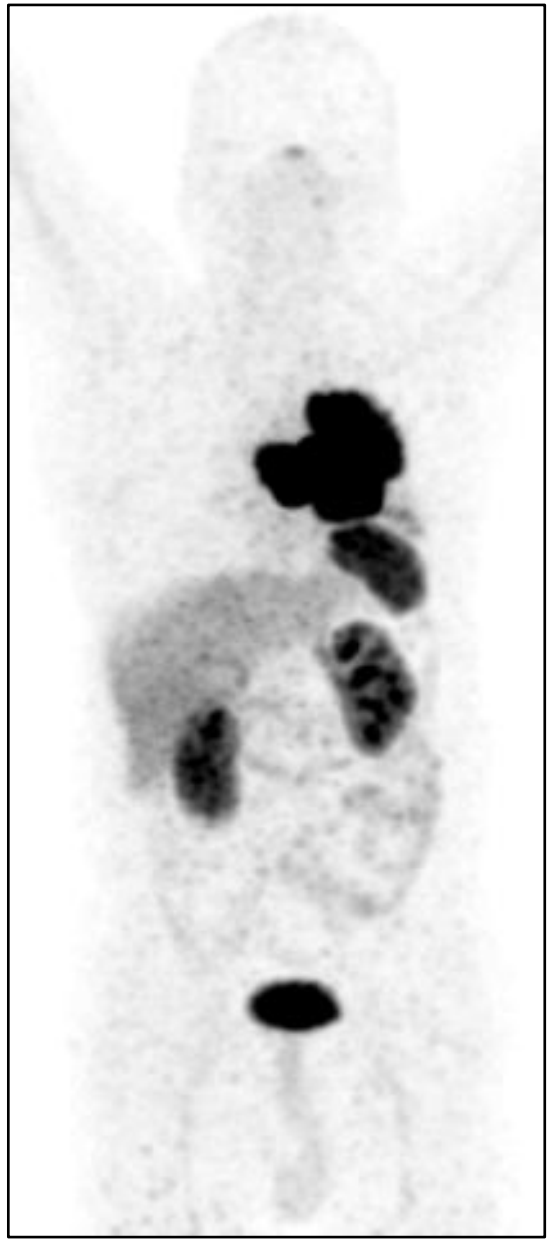
SUV max on FDG PET was higher for AC than TC

So when should FDG PET be added to DOTANOC PET..??

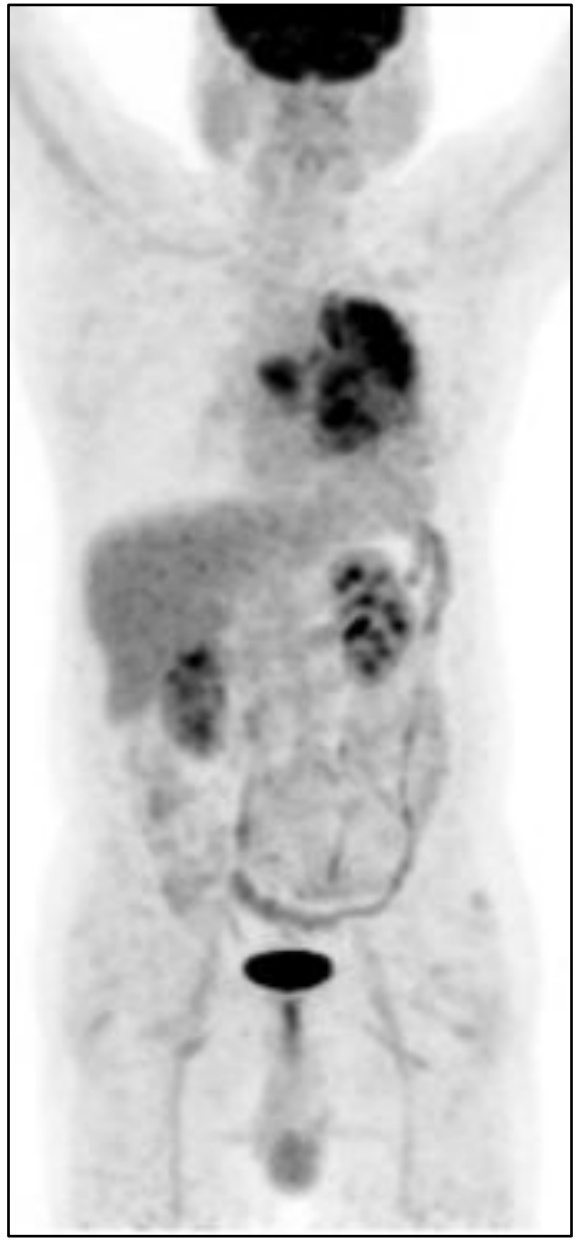


DOTATATE PET/CT

4# PRRT



DOTATATE PET/CT



FDG PET/CT

In Aug 2020, patient comes with weight loss, persistent breathlessness, PS 3

Re-biopsy….???? (Pathologist)

Molecular Marker….?? (Pathologist)

Palliative/Cyto-reductive surgery (Surgeon)

Targeted Therapy..?? (Medical Oncologist)

Alpha PRRT…??? (Nuc Med Physician)

32/F,

Evaluated for fever and cough in Nov 2021

CECT TAP - Left LL lesion with endobronchial extension and mediastinal LN and liver lesions; ?hydatid cyst

FOB - LMB completely occluded 1cm beyond carina; Scope not passed beyond

Underwent Left open pneumonectomy on 19.1.22

HPR - NET grade 2; Bronchial cartilage involved

Medical Oncologist….adjuvant treatment…???

FINAL HISTOPATHOLOGY REPORT

01/06/2022

Nature of Material Received: 11 Stained slide[BH-07/22,22W-1684],11 Paraffin block[BH-07/22,22W-1684]

Microscopic Description:

Left lung – Left pneumonectomy (11 paraffin blocks + 11 stained slides):

Section key is not provided.

Typical carcinoid.

Mitotic activity is inconspicuous.

Necrosis is not seen.

Lymphovascular emboli are identified.

Perineurial invasion is not identified.

Five lymph nodes show reactive lymphoid tissue, negative for metastasis (0/5).

Resection margins are not labelled, cannot be commented upon.

Tumour is seen involving the cauterized margin.

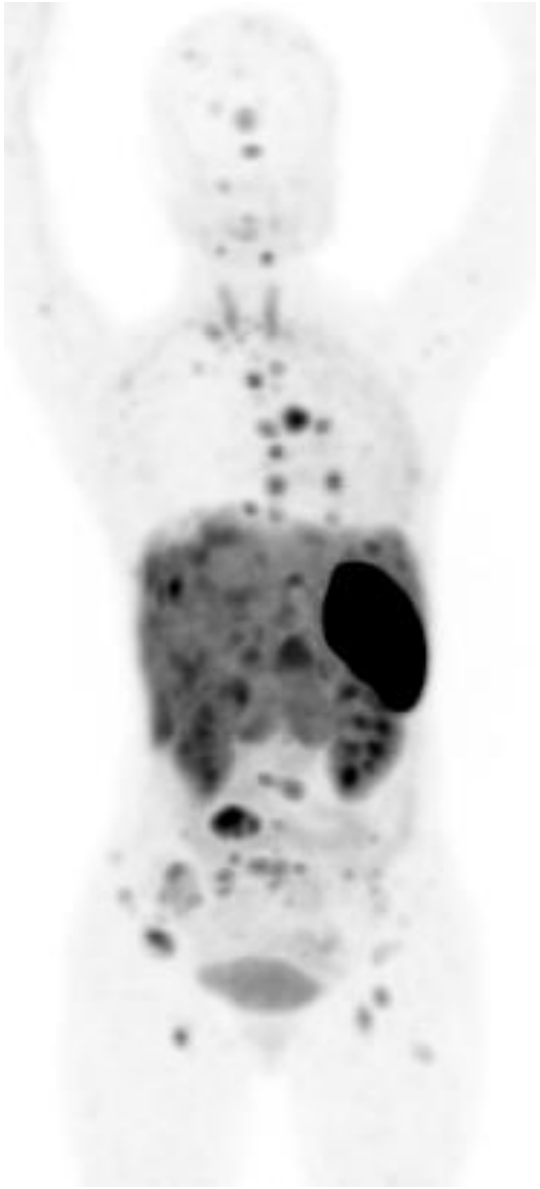
On immunohistochemistry, tumour cells are diffusely positive for synaptophysin, chromogranin.

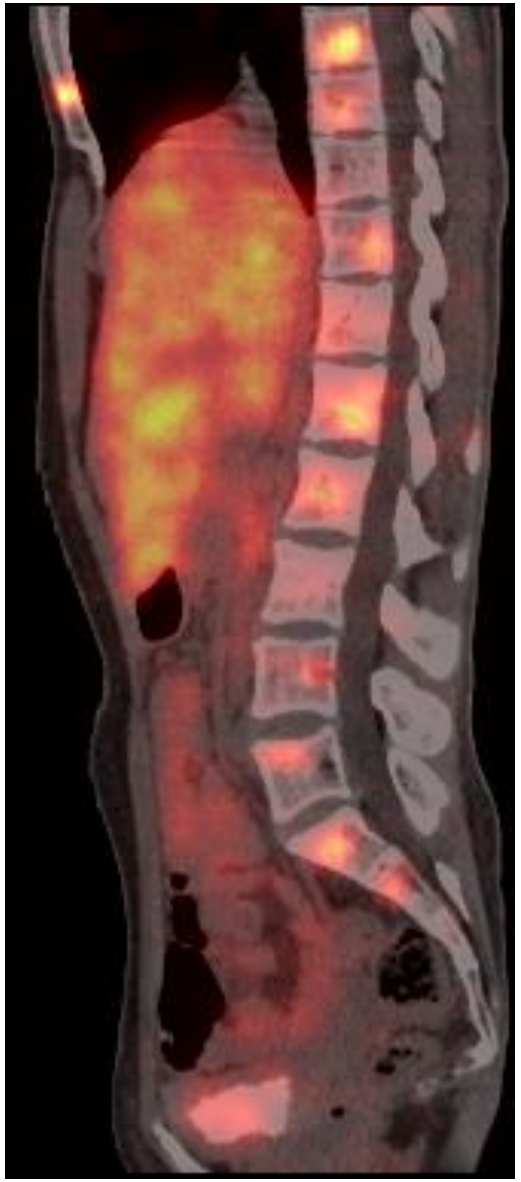
Mib1 labelling index is approximately 4-5%.

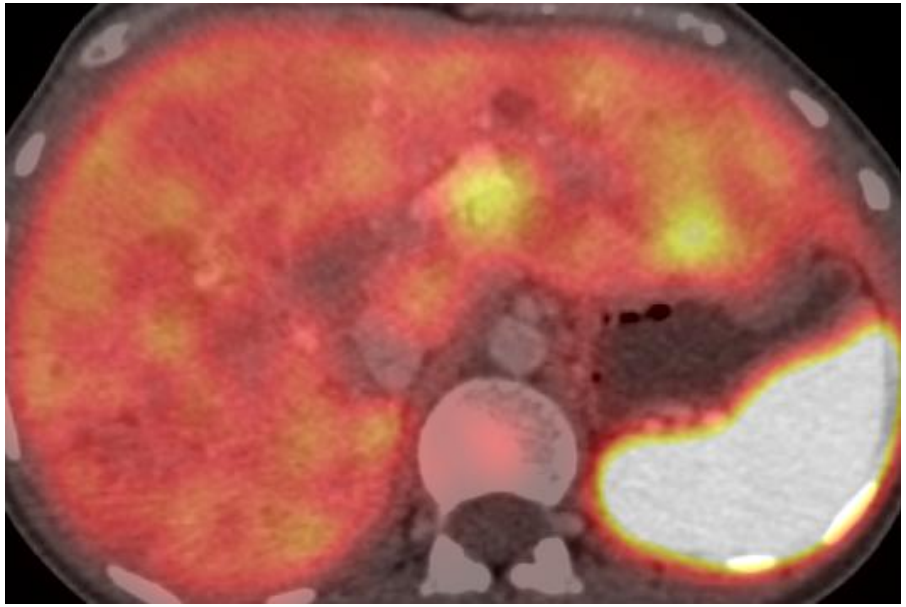
Impression:

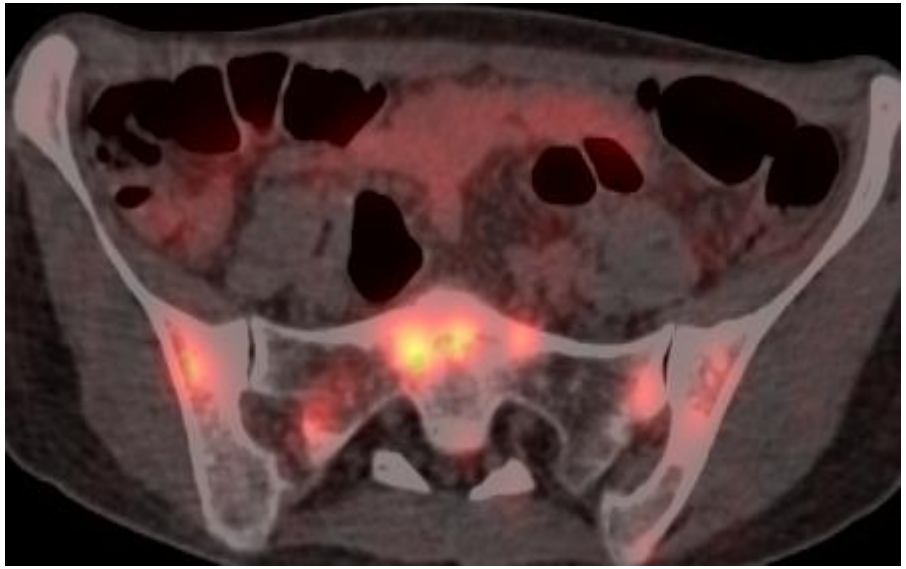
- **Left Lung Left -Pneumonectomy (11 paraffin blocks + 11 stained slides) :**
  - **Typical carcinoid**

TC vs AC….what are the features ….??? (Pathologist)









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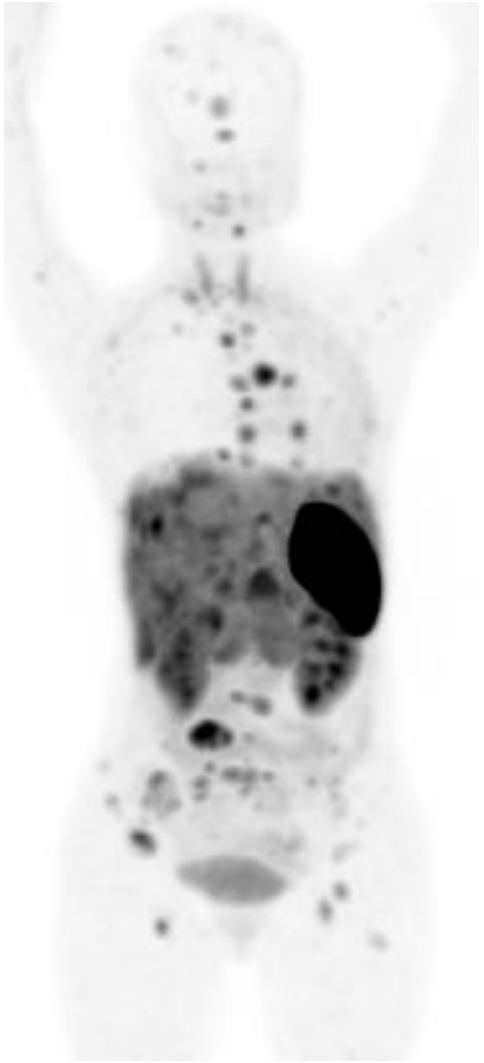

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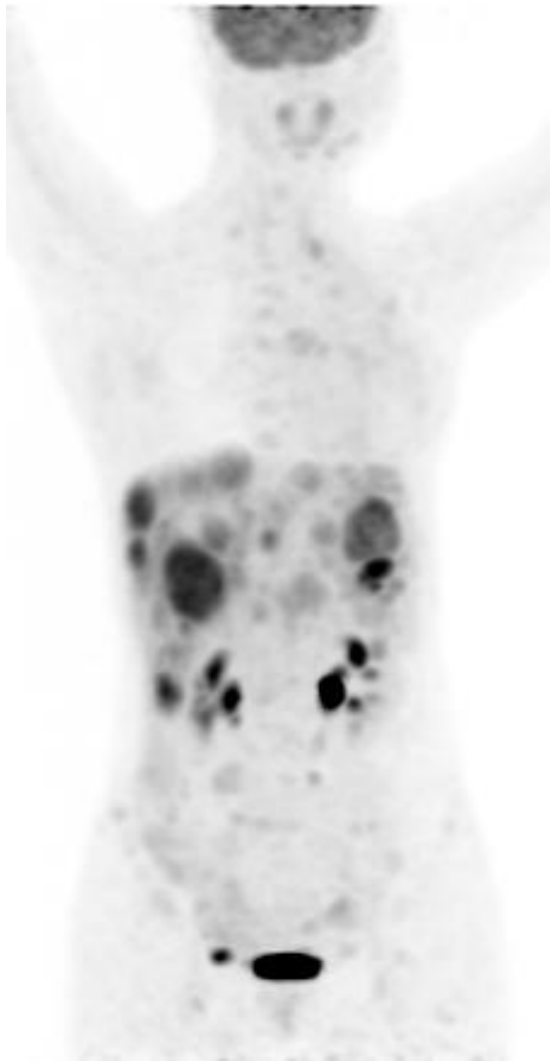
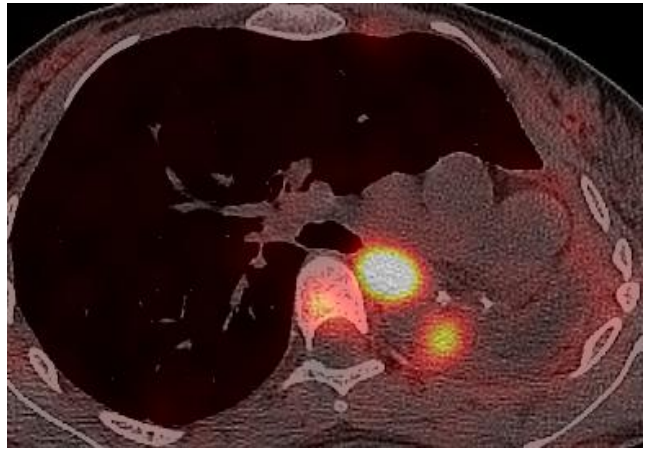
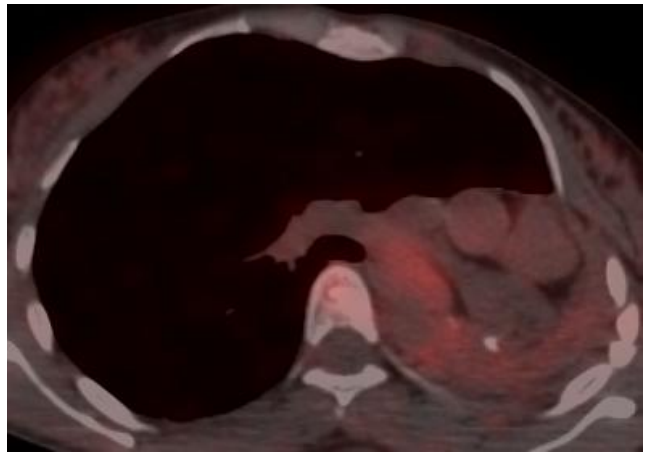


FDG PET/CT





Role of Combination therapy….???
(Nuc Med Physician, Medical Oncologist)

52 yr old female, Dentist by profession

Now c/o Lower backache significant in November 2020

CECT Chest 22/12/2020- Broad based pleural and Rt lower intrathoracic lesion Medial basal and superior segmental homogenously enhancing lesion without paraspinal extension

Extent- 7.1X6.3X5.4cms D6-D9 Region

Multiple ill defined lesions in segment VIII of liver largest 3.4x3.2cms

CT Guided Biopsy on 26/12/2020

HPE- S/o Neuroendocrine Tumour Grade 1, Ki-67% -2%

FINAL HISTOPATHOLOGY REPORT WITH SUPPLEMENT

Nature of Material Received: 2 Paraffin block[HS-5525]

Microscopic Description:

Paraspinal mass (2 paraffin blocks):

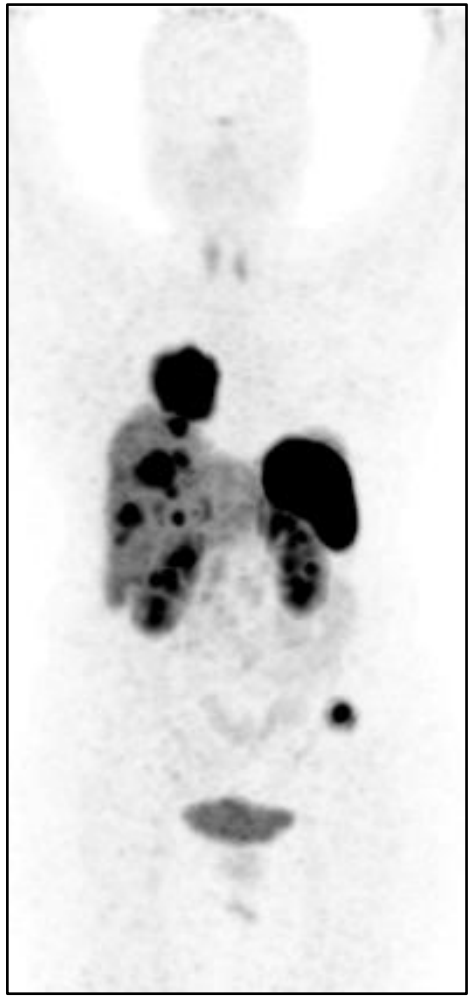
Suspect neuroendocrine tumour.

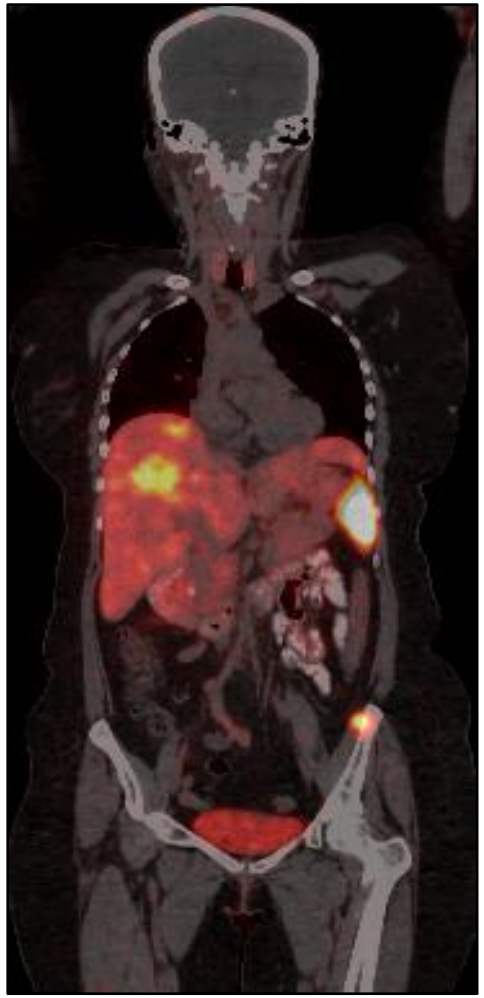
On immunohistochemistry, the tumour cells are positive for synaptophysin and chromogranin.

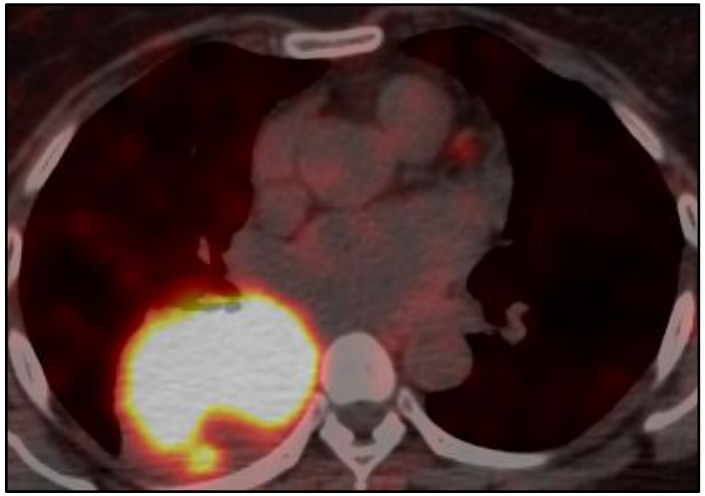
MIB-1 labelling index is 1-2% in highest proliferating areas.

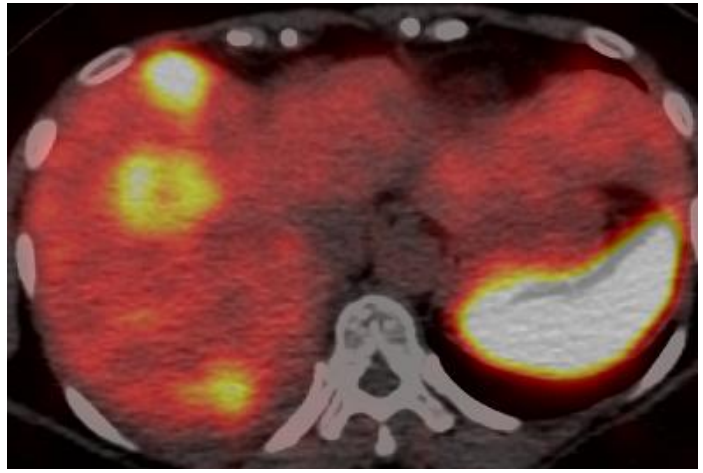
Impression:

- **Paraspinal mass :**
  - **Neuroendocrine tumor, grade 1**









What next…..?????

PRRT….??

FDG PET..??

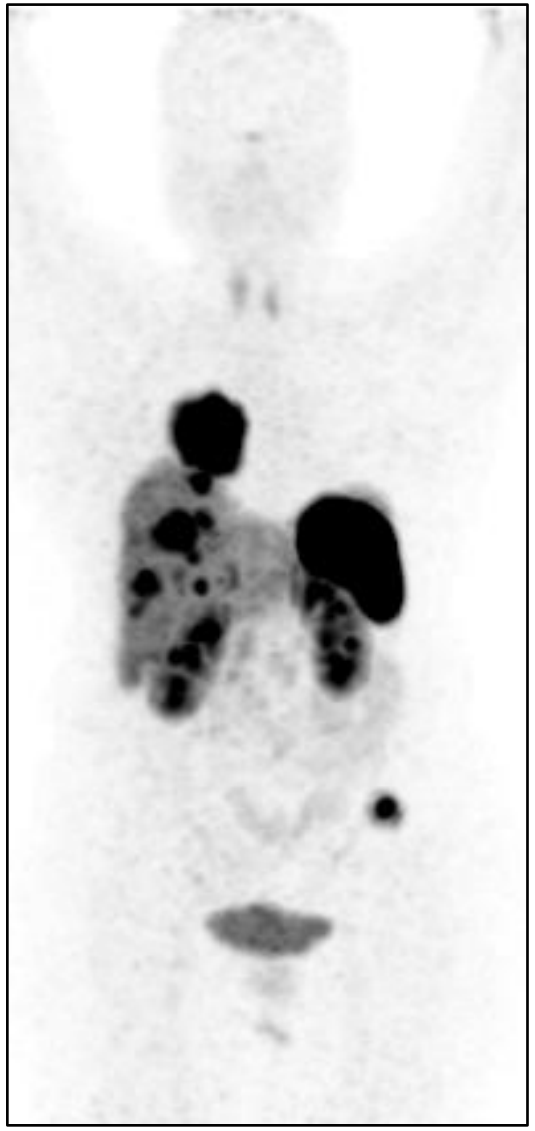
Octreotide LAR..???

DOTATATE PET/CT

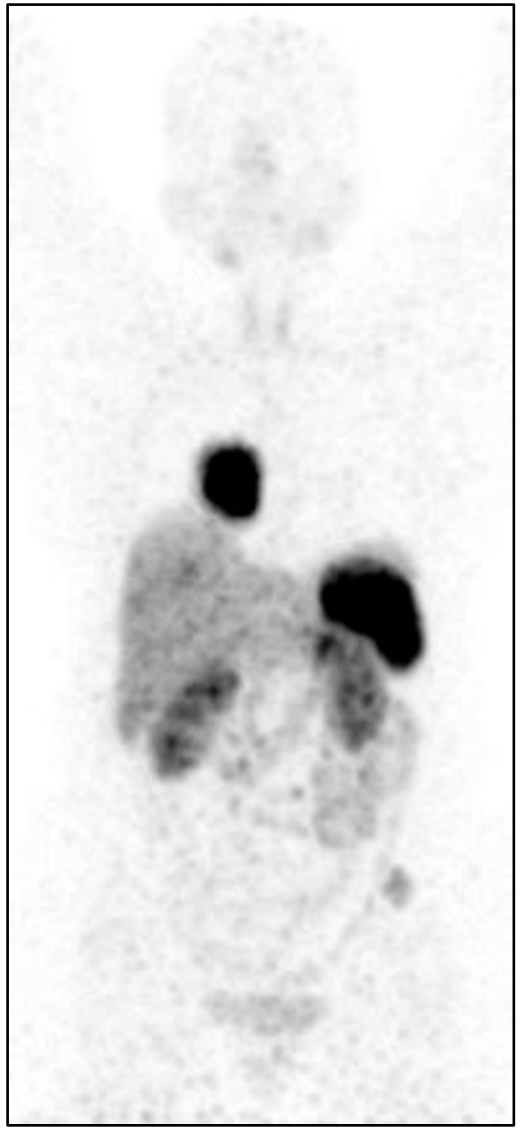
The biopsy is scanty in the paraffin block.

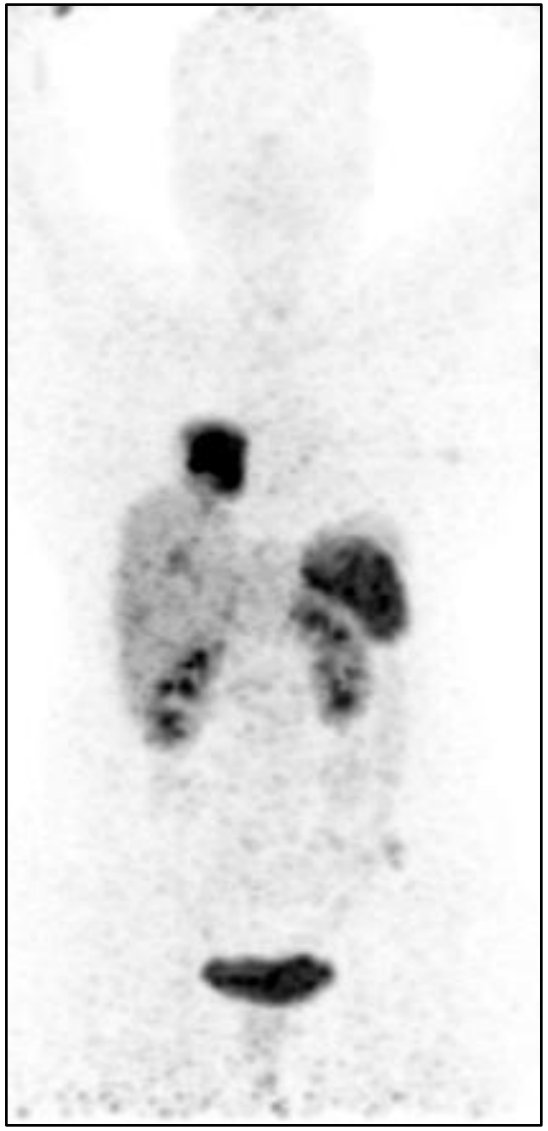
Immunohistochemistry for ATRX is retained in the tumor cells.

Staining for p53 is non-contributory due to depleted material



4# PRRT





Surgery…..??
Adj treatment

Thanks…