IMAGES IN HOSPITAL MEDICINE

Diffuse FDG Uptake in a Thyroid Gland

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Shown below (Image 1 & 2) are the PET CT scan images of a diffusely FDG avid thyroid with tissue extending superiorly into the posterior laryngopharynx. The differential diagnosis includes chronic thyroiditis (1), multinodular goiter, ectopic thyroid tissue, and underlying thyroid malignancy.

Our case involved a 62-year-old female with a past medical history of hypothyroidism since 2016 treated with 50mcg of levothyroxine daily, hypertension, and a 44-pack-year smoking history. She presented with progressively worsening nausea, vomiting, dysphagia, diarrhea, and weight loss. An abdominal CT scan raised concerns for a renal cell cancer and/or a uterine cancer as she was found to have a solid left renal inter-polar mass, heterogeneous right renal inferior pole mass, multiple variable sized pelvic masses, left adrenal mass, multiple enlarged abdominal lymph nodes, multiple enhancing foci in both lobes of the liver and head of pancreas, and diffuse thickening of the distal esophagus and gastroesophageal (GE) junction.

The patient then underwent a PET CT scan as part of staging which showed diffuse uptake in the thyroid gland along with uptake in the liver and left adrenal mass. No FDG avidity was noted within GE junction, pancreatic head, renal lesions, or large pelvic masses, which appeared to be fibroids. An IR-guided biopsy of the liver was consistent with neuroendocrine tumor likely of gastrointestinal origin.

Given the patient's presentation, the FDG uptake in the thyroid was thought to be due to metastasis or a neuroendocrine lesion (2). TSH was 6.95 mcunit/ml. A biopsy of the most well-defined thyroid nodule in the right hemithyroid, measuring 6.6x4.1x8.4 mm was performed. Pathology was reported as benign with Hurthle cells and lymphocytes consistent with Hashimoto's thyroiditis. Diffuse FDG uptake is well-documented in chronic thyroiditis, and despite patient's clinical picture concerning for metastatic disease, was the final diagnosis.

CONCLUSION

Diffuse FDG uptake in the thyroid occurs commonly with chronic lymphocytic (Hashimoto's) thyroiditis (3).

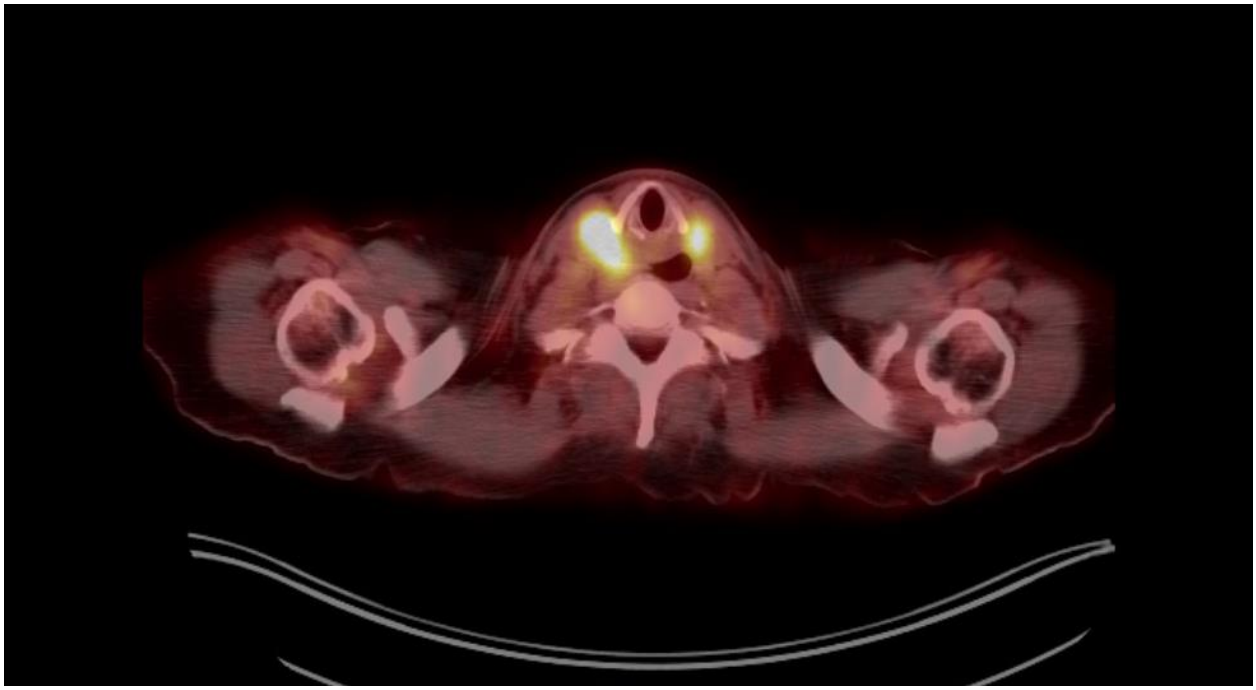

Image 1. Transaxial PET CT scan images of the diffusely FDG avid thyroid gland lobes

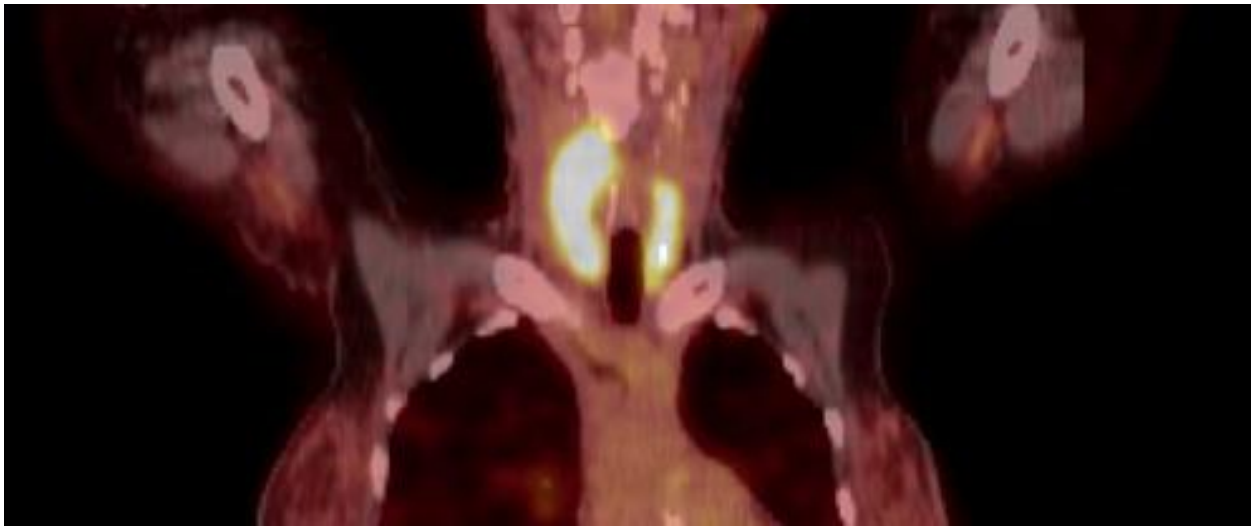

Image 2. Coronal PET CT scan images showing of the diffusely FDG avid thyroid gland

Notes

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