



## AB040. PS02.04: DOTATATE PET/CT in thymic atypical carcinoid tumor with secondary ACTH-dependent Cushing's syndrome

John Agzarian<sup>1</sup>, Hisham Qandeel<sup>2</sup>, Irina Bancos<sup>3</sup>, Geoffrey B. Johnson<sup>4</sup>, Stephen C. Scharf<sup>5</sup>, Geoffrey B. Thompson<sup>6</sup>, Joanne Yi<sup>7</sup>, Xiaotun Zhang<sup>7</sup>, K. Robert Shen<sup>1</sup>

<sup>1</sup>Department of Thoracic Surgery, Mayo Clinic, Rochester, MN, USA; <sup>2</sup>Mayo Clinic, Rochester, MN, USA; <sup>3</sup>Department of Endocrinology, Mayo Clinic, Rochester, MN, USA; <sup>4</sup>Department of Radiology & Immunology, Mayo Clinic, Rochester, USA; <sup>5</sup>Department of Radiology, Lenox Hill Hospital, New York, USA; <sup>6</sup>Department of Endocrine Surgery, Mayo Clinic, Rochester, MN, USA; <sup>7</sup>Department of Anatomic Pathology, Mayo Clinic, Rochester, MN, USA

**Abstract:** Neuroendocrine thymic tumors represent the least common type of primary thymic tumor with a prevalence of 2–5%. We present a case of locally advanced thymic atypical carcinoid tumor diagnosed incidentally while investigating progressive Cushing's syndrome. CT scan demonstrated a large 2.9 cm exophytic thyroid nodule and a 2.0 cm anterior mediastinal mass. Biopsy of the thyroid nodule demonstrated benign thyroid tissue, and Octreotide scan revealed avid uptake

in the right thyroid lobe with minimal uptake in the thymic tumor. 68-Gallium DOTATATE PET-CT scan showed intense uptake in the thyroid gland followed by a moderate amount of activity in the anterior mediastinal mass. The patient underwent a median sternotomy and radical thymectomy with en bloc resection of the left innominate vein and primary repair of the superior vena cava. On further evaluation, the presumed thyroid nodule appeared contiguous with the thymic lesion and separate from the thyroid. Final pathology demonstrated a poorly differentiated 4.4 cm atypical carcinoid tumor with nine positive lymph nodes. On the third postoperative day, the serum cortisol level precipitously decreased to a level of 6.8 µg/dL. This case highlights the challenges surrounding the diagnosis of hormonally active thymic carcinoids, and demonstrates the utility of 68-Gallium DOTATATE PET scan in localizing somatostatin-positive neuroendocrine tumors, and surgical planning.

**Keywords:** DOTATATE PET/CT scan; ectopic ACTH-dependent Cushing's syndrome; atypical thymic carcinoid; lymph node metastasis

doi: 10.21037/med.2017.AB040

**Cite this abstract as:** Agzarian J, Qandeel H, Bancos I, Johnson GB, Scharf SC, Thompson GB, Yi J, Zhang X, Shen KR. DOTATATE PET/CT in thymic atypical carcinoid tumor with secondary ACTH-dependent Cushing's syndrome. *Mediastinum* 2017;1:AB040. doi: 10.21037/med.2017.AB040