

Poster #: 38

Title of Depiction of Celiac Ganglia on Positron Emission Tomography and Computed Tomography

Abstract:

Institution: Massachusetts General Hospital

Authors: Seyed Mahdi Abtahi Azadeh Elmi Sandeep S. Hedgire Yuen Chi Ho Sarvenaz Pourjabbar Sarabjeet Singh Mannudeep Kalra Mukesh Harisinghani

Modality: Multi

Organ System: Multi

Intro: In this study in order to better characterize celiac ganglia we assessed the depiction of celiac ganglia on positron emission tomography-computed tomography (PET-CT) with [18F]-fluorodeoxyglucose in patients with history of lung cancer. We also correlated these finding to postmortem high dose MDCT scans performed in unrelated subjects.

Purpose: To assess the imaging characteristics of celiac ganglia on PET-CT. PET-CT findings were also correlated to postmortem high dose MDCT scans performed in unrelated subjects.

Methods Used: 129 patients with lung cancer (70 women; mean age, 66.0-years) who underwent PET-CT from 2006 to 2010 were included in this study. Follow-up MDCT scans were also evaluated for any morphologic change. The frequency of visualization, location, morphologic feature, size, enhancement pattern, and FDG avidity of the celiac ganglia were recorded. In addition, postmortem MDCT of 20 unrelated human subjects (11 women, mean age 63.4-years) were reviewed for morphologic and anatomic characteristics of celiac ganglia.

Results of Celiac ganglia were identified in 127 cases (98%) and bilaterally in 108 patients (91%). The left ganglion **Abstract:** was visualized more often than right (p-value=0.74). The ganglia showed smooth margin (68.3%) with mean short axis length of 7.1 mm and mean long axis length of 19.4 mm. There was a significant increase in mean HU in all of the cases on enhanced CT (11 vs. 68, p-value=0.004). There was no evidence of abnormal FDG uptake in the celiac ganglia on PET scans. During follow-up the ganglia did not change in 123 patients (95%). On postmortem high dose MDCT images, celiac ganglia were identified in all cases (95% bilaterally). There was no significant difference in the imaging features when compared to our cohort of patients.

Discussion: Familiarity with CT-scan characteristics and FDG-avidity of celiac ganglia allows proper identification of these structures and enables distinguishing these from metastatic lesions in the anatomical vicinity.

Scientific and/or Clinical Significance? Because of segmental embryonic origin of celiac ganglia, any small lesions in its vicinity could represent non-fused components of the celiac ganglion and not necessarily enlarged lymph nodes or other pathological processes such as metastasis. As the morphology and tissue density may be similar for these structures it would be helpful to differentiate these structures based on FDG avidity. This fact would highlight the importance of identifying celiac ganglia on PET-CT to differentiate it from metastatic lesion to the adjacent lymph nodes or adrenal glands in patients with history of malignancy which to the best of our knowledge has not been reported.

Relationship to existing work Distinguishing Celiac ganglia from malignant lesions in its vicinity

N/A