Interesting images

FDG-PET/MRI fusion demonstrating cricoarytenoid muscle hypermetabolism due to contralateral true vocal cord paralysis

Imágenes de fusión en la FDG-PET/RM que demuestran el hipermetabolismo de la musculatura cricoaritenoidea por la parálisis verdadera de la cuerda vocal contralateral

D. Lu, H. Jadvar*, J. Go, R. Henderson, O. Boyko, E. Grant, M. Law

Department of Radiology, Keck School of Medicine of USC, University of Southern California, Los Angeles, United States

A 34-year-old female with recurrent papillary thyroid carcinoma who was previously treated with total thyroidectomy and cervical lymph node dissection was referred for imaging evaluation after treatment (Fig. 1). PET/CT was performed to evaluate for treatment response 8 weeks after the end of radiation therapy to the neck for recurrent disease. PET showed asymmetric focal hypermetabolism in the hypopharynx on the left at the edge of hyoid cartilage with a maximum SUV of 6.7. The activity was difficult to localize on PET/CT due to the lack of IV contrast. MRI was requested for further characterization and anatomic localization. MRI showed slight medialization of the right vocal cord and aryepiglottic fold but no enhancing mass in the area of focal increased FDG uptake. Physical examination did not reveal lymphadenopathy, neck masses, or tenderness. Laboratories, including thyroglobulin level were within normal limits. PET/MRI fusion facilitated the localization of focal FDG uptake to the left cricoarytenoid muscle that represented the compensatory increased movement of the left cricoarytenoid muscle due to contralateral true vocal cord paralysis. Major causes of vocal cord paralysis include trauma and malignancy, which more commonly affect the left recurrent laryngeal nerve due to its longer course through the aortopulmonary window. Our patient was confirmed by laryngoscopy to have right vocal cord paralysis presumably due to thyroidectomy. Her follow up MRI at 6 and 12 months showed no interval changes. Image fusion software can play an important role in defining the potential clinical applications for the emerging hybrid PET/MRI imaging systems.

Fig. 1. Imaging studies of a patient with recurrent papillary thyroid carcinoma. FDG PET showed asymmetric focal hypermetabolism in the hypopharynx on the left at the edge of hyoid cartilage (right top panel: axial, right bottom panel: coronal). MRI showed no enhancing mass in the area of focal increased FDG uptake (left top panel). PET/MRI fusion localized the focal FDG uptake to the left cricoarytenoid muscle that represented the compensatory increased movement of the left cricoarytenoid muscle due to contralateral true vocal cord paralysis (bottom left panel).

* Corresponding author.
E-mail address: jadvar@usc.edu (H. Jadvar).

2253-654X/5 – see front matter © 2012 Elsevier España, S.L. and SEMNIM. All rights reserved.
http://dx.doi.org/10.1016/j.remn.2012.03.011
Funding

H. Jadvar was supported in part by NIH/NCI grant R01-CA111613.

References

