

Clinical Significance of [18F]Fluorodeoxyglucose Uptake in Larynx on [18F]FDG PET/CT

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Objective/Background : To retrospectively evaluate the clinical significance of [18F]FDG uptake in larynx with [18F]FDG PET/CT in patients with no known abnormality in this region. The aims of this study were to confirm the association with clinical prevalence and differentiate physiologic from pathologic uptake.

Materials and Methods : From Oct 2003 to Jun 2006, 420 healthy subjects and 4625 cancer subjects (included 261 head and neck cancer subjects except larynx cancer) underwent PET/CT. PET/CT was interpreted concentrating on the presence of pathologic lesions, the maximum SUV of the lesion, and other otolaryngologic examination and laryngoscopic evaluation and pathologic confirmation were performed.

Results : Laryngeal lesions incidentally identified by PET/CT were 2 lesions in healthy subjects (0.48%), 8 lesions in head and neck malignant subjects (3.1%), 24 lesions in cancer subjects (0.6%) unrelated primary region. 27 lesions were revealed physiologic uptake in bilateral larynx and 7 lesions were observed benign lesion in larynx. Vocal cord palsy was observed 6 lesions in lung and esophageal cancer and other lesion was related laryngitis. [18F]FDG accumulates in the laryngeal muscles (the mean maxSUV=2.11) in proportion to contractile activity during speech and breathing, and compensatory hyperfunction of vocal cord in vocal cord palsy showed the focal increased [18F]FDG uptake (maxSUV=2.84).

Conclusion : Increased [18F]FDG uptake in larynx related to vocal cord mobility. In vocal cord palsy, compensatory hyperfunction of vocal cord was associated with focal [18F]FDG uptake. A complete preparation prevents physiologic [18F]FDG uptake in the laryngeal muscles.