

## A problem in diagnosing N3 disease using FDG-PET in patients with lung cancer —High false positive rate with visual assessment—

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**Objective:** To evaluate the accuracy of diagnosing N3 disease using positron emission tomography (PET) with 2-[fluorine-18]fluoro-2-deoxy-D-glucose (FDG) in patients with pulmonary disease. **Subjects and Methods:** Twenty patients diagnosed as FDG-PET N3 were enrolled. On FDG-PET, lymph nodes were considered to be positive when increased uptake as compared with that of the surrounding mediastinum was visually observed, or the mean standardized uptake ratio (SUR) was more than 2, 2.5, or 3. On CT, lymph nodes exceeding 1 cm in the shortest diameter were regarded as positive. **Results:** The PET result was true positive (TP) in 2 patients and false positive (FP) in 18 with an overall accuracy (OA) of 10% using visual criteria. Using an SUR of more than 2.5, the result was TP in 2, FP in 3, and true negative (TN) in 15, the false negative (FN) in 0, with an OA of 85%. CT diagnosis was TP in 2, FP in 9, and TN in 9 with an OA of 55%. The accuracy using the SUR criteria of more than 2.5 was superior to that of CT. **Conclusion:** Of 20 patients with the diagnosis of PET N3, we found frequent over-diagnosis in nodal staging using the visual criteria.

**Key words:** FDG-PET, nodal staging, false positive, N3, lung cancer