Clinical Area: **FDG PET for head and neck cancer: Restaging**
Keywords: **FDG PET, recurrence, head and neck cancer**
Reference: **Lonneux M, Lawson G, Ide C, Bausart R, Remacle M, Pauwels S. Positron emission tomography with fluorodeoxyglucose for suspected head and neck tumor recurrence in the symptomatic patient. Laryngoscope 2000; 110: 1493-97.**

Study Type: Comparison of diagnostic tests
Study Aim: To analyze the impact of FDG PET in the treatment of patients suspected of having head and neck cancer recurrence.

Outcomes
- *Primary:* Sensitivity, specificity
- *Secondary:* Patient management

Design
- *Number of subjects:* N=44
- *Description of study population:* 39 men/ 5 women; mean age=57.5 ± 10.7 years (range, 39-80 years).
- *Inclusion and exclusion criteria:* Inclusion: Clinical presentation suggesting a tumor recurrence (pain, palpable mass, bleeding, dysphonia). Exclusion: Not discussed.
- *Procedure:* Patients received physical examination, fibroscopy, CT scan, MRI of the cervical region and FDG PET.

Validity
- *Independent blind comparison with a gold standard or follow-up of those not receiving the gold standard test?* Blinded comparison, FDG PET assessors blinded to other imaging results. Variable "gold standard", biopsy and/or clinical follow-up.
- *Was "normal" defined?* No, did not specify SUV cut-off for sensitivity and specificity comparisons or clearly define qualitative categories.
- *Appropriate spectrum of disease?* Yes.
- *Consecutive patients?* Not specified.
- *Methods described in enough detail to enable you to replicate the test?* Yes.
- *Reproducible results?* Yes.

Conclusions regarding validity of methods:
Study strengths were that it was prospective, comparisons were made with other diagnostic tests and there were some data on the impact of FDG PET on patient care. Study weaknesses were that there was not consistent use of a gold standard (some patients recurrences were verified by clinical follow-up with is likely to be less accurate than biopsy); the definition of a positive PET study was not clearly defined and the authors did not specify whether patients were consecutive.

Results

Diagnostic performance of FDG PET and CT plus MRI (n=44)

	Sensitivity	Specificity
FDG PET	96	61
CT + MRI	73	50
p-value	<0.05	0.47

Patient management in 38 patients for whom pandenoscopic exploration was a priori indicated

	FDG PET	CT + MRI
No. of patients for whom an unnecessary biopsy is avoided	14/21 (67%)	8/21 (38%)
No. of patients for whom a biopsy is correctly indicated on the basis of imaging modalities	16/17 (94%)	11/17 (65%)
Overall accuracy	79%	50%

Authors' Conclusions

"Whole-body FDG PET is more accurate than CT + MRI in the assessment of a symptomatic patient previously treated for a head and neck cancer, even early after therapy completion."

Reviewer's Conclusions

In this study, FDG PET had a higher sensitivity and specificity at identifying cancer recurrence than CT + MRI, but the specificity of FDG PET was relatively low. FDG PET also appeared to have a greater positive impact on patient management than combined CT + MRI results. CT and MRI seemed to perform less well than in other comparisons with FDG PET.