

## ABSTRACTS

304 examinations (ex) were performed with CDET and 164 with PET. 230 CDET cases and 73 PET cases are currently evaluable according to histology or to follow-up. These examinations were performed for suspicion of recurrence (157 CDET cases, 39 PET cases), in search for other localisations when one or more resectable lesion(s) was (were) known (48 CDET cases, 24 PET cases) or for evaluation of the therapeutic efficacy (25 CDET cases, 10 PET cases).

**Results:** The results were the following, on patient-basis :

	Suspicion of recurrence	Search for other localisations	Therapeutic evaluation
CDET	104 TP ; 30 TN 3 FP ; 20 FN	48 TP ; 0 TN 0 FP ; 0 FN	11 TP ; 13 TN 0 FN ; 1 FN
PET	30 TP ; 5 TN 0 FP ; 4 FN	23 TP ; 0 TN 0 FP ; 1 FN	5 TP ; 5 TN 0 FP ; 0 FN

Globally, sensitivity was 89% with CDET and 92% with PET, specificity was 93% with CDET and 100% with PET and accuracy was 90% with CDET and 93% with PET.

**Conclusion:** These results confirmed that FDG is a powerful tool for the detection of colorectal recurrences and showed that no significant difference in accuracy ( $\chi^2 = .75$  ;  $p = .4$ ) was detectable between the two modalities interpreted by the same team and both performed 1 hour after injection.

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### **Modification of Patient Management when Using FDG-PET in Detection of Recurrences of Colorectal Cancer: 18 Month-Experience**

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**Aim:** The aim of this study was to evaluate the impact of [F-18] - FDG - PET on managing patients with colorectal cancer.

**Methods:** From January 2000 to July 2001, 164 examinations were performed by the team of hospital Tenon using a 3D dedicated PET system (C-PET, ADAC) for suspicion or recurrence of colorectal cancer (53 % of the cases), for search for other localisations when one or more resectable(s) lesion(s) was (were) known (37 %) or for evaluation of the therapeutic efficacy (10 %).

To evaluate the impact of PET imaging on patient management, a post PET questionnaire (corresponding to the french translation of the questionnaire presented by J. Meta et al., J Nucl Med, 2001, 42, 586-590) was sent to the referring physician.

**Results:** 94 responses are currently available, corresponding to:

- no change (n = 42),
- change from no treatment to surgery (n = 11),
- change from no treatment to medical treatment (n = 11),
- change from surgery to medical treatment (n = 9),
- change from medical treatment to no treatment (n = 5),

## ABSTRACTS

- change from medical treatment to surgery (n = 4),
- change from surgery to no treatment (n = 4),
- change in medical approach (n = 3),
- change in surgical approach (n = 2)
- change from no treatment to radiotherapy (n = 1),
- change from radiotherapy to medical treatment (n = 1),
- change from medical treatment to radiotherapy (n = 1)
- 

In summary, among 94 responses from referring physicians (corresponding to 57 % of the examinations), changes in patient management were reported for 52 of the 94 patients (55 %).

**Conclusion:** This result confirms, in France, the major impact of FDG-PET on the management of recurrences of colorectal cancer, as reported by the referring physician, already demonstrated in California (62 % in the 60 patients of Meta et al.).



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### Pre-Operative Image Fusion of CT and PET Data Sets in Oral-Maxillo-Facial Carcinoma

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**Aim:** The aim was to evaluate the clinical and therapeutical value of digital image fusion of F18-FDG-PET and CT in patients with oral-maxillo-facial carcinoma.

**Methods:** Nine patients (age 46-87, 5 male, 4 female) with oral-maxillo-facial carcinoma underwent CT and F18-FDG-PET (333-370 MBq). The time-interval between both diagnostic modalities varied between 1 to 9 days. The data of both imaging modalities were fused on an image workstation by automatic adaptation of pixel size and slice interval. The axes were corrected semi-automatically for differences in body positions. The fused images were reconstructed in the axial, coronal, and in the sagittal plane.

**Results:** PET showed a local pathological FDG-uptake of a high intensity in the tumor in 9 / 9 patients (sensitivity 100%). CT detected the tumor in 7 / 9 patients (sensitivity 77,8 %). Image fusion of PET and CT showed the tumor in 9 / 9 patients (sensitivity 100%). The final diagnosis was carcinoma of the mandible in 3 / 9 patients, carcinoma of the mouth floor in 3 / 9 patients, carcinoma of the tongue in 2 / 9 patients and carcinoma of the roof of the mouth in 1 / 9 patients. Histology ensured malignancy in all cases. The results were path-squamous-cell carcinoma, in 1 / 9 low differentiated (tongue), in 4 / 9 middle differentiated (3 mouth floor, 1 tongue), and in 4 / 9 patients high differentiated (3 mandibula, 1 roof of the mouth).

**Conclusions:**

- In CT in 2 / 9 patients it was not possible to discriminate between oral-maxillo-facial carcinoma and normal lesions because of the limitation in the small size of the lesion. In addition to that, most patients have metal-implants in their teeth, which cause a lot of artefacts and often make exact diagnosis impossible.
- PET shows the pathological lesions and dignity independent of metal-implants. In case of a very high intensity of FDG-uptake morphology is difficult to describe.
- Image Fusion of both methods is helpful for better definition of exact diagnosis, dignity, topography, differentiation osseous/extraosseous. Therefore the planing of surgery (visual