

Added value of para-aortic surgical staging to ¹⁸F-FDG PET/CT on the external beam radiation field for patients with locally advanced cervical cancer: an ONCO-GF study¹

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Objective: Extended field chemoradiation is recommended for patients with locally advanced cervical cancer (LACC) and para-aortic lymph node (PALN) metastases. The radiation planning may be based on PET/CT while others recommend to rely on surgical staging. We report the rate of patients for whom the radiation field defined on PET/CT was modified by the histological PALN status.

Methods: Between March 2010 and December 2016, 168 consecutive patients with LACC underwent a pre-therapeutic PET/CT and PALN dissection. The data were reviewed retrospectively. The diagnostic performance of the PET/CT for definition of PALN status was calculated. We determined the percentage of patients for whom PALN dissection altered the external beam radiotherapy (EBRT) field defined on the PET/CT basis.

Results: Of 151 patients with negative PALNs on PET/CT, 26 had histological PALN metastasis (17.2%). Of 17 patients with positive PALNs on PET/CT, 9 were negative on histology (false positive 52.9%), of which 7 were located in the common iliac region. Sensitivity, specificity, and positive and negative predictive value of PET/CT were 23.5, 93.3, 47.1 and 82.8% respectively. In total, 35 out of 168 patients (20.8%) underwent EBRT - field adaptation. The rate of radiation field modification (27.7%) was particularly high in the subgroup of patients with metastatic pelvic lymph nodes (LNs) on PET/CT.

| PLN metastasis ABSENT on PET/CT (85/168 patients) | | |
|---|------------------|--------------------------|
| PALN before PALND | PALN after PALND | Adapted EBRT field |
| 84 PALN negatif | 11 PALN positif | 11/85 (▲ 12.9%) |
| 1 PALN positif | 1 PALN negatif | 1/85 (▼ 1.2%) |
| PLN metastasis PRESENT on PET/CT (83/168 patients) | | |
| PALN before PALND | PALN after PALND | Adapted EBRT field |
| 67 PALN negatif | 15 PALN positif | 15/83 (▲ 18.1%) |
| 16 PALN positif | 8 PALN negatif | 8/83 (▼ 9.6%) |

PLN, pelvic lymph node; PALN, para-aortic-lymph node; PALND, PALN dissection

Table: External beam radiation (EBRT) field adaptation (Pelvic to Extended field / Extended to Pelvic field)

Conclusion: Para-aortic surgical staging contributes significantly to individualize the radiation treatment of patients with LACC, particularly for those with positive pelvic LNs at PET/CT. Indication of surgical staging deserves particular attention when the PET/CT suggests positive LNs in the common iliac region.