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10th International Workshop on Surgical Exploration of the Mediastinum and Systematic Nodal Dissection
Hospital Universitari Mútua Terrassa | Universitat de Barcelona

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VAMLA FOR RESTAGING: PRELIMINARY RESULTS

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Introduction

Mediastinal downstaging as a criterion to select patients for resection after neoadjuvant treatment requires a reliable restaging method to identify persistent nodal disease.

Objectives

This study aims to analyse the accuracy of video-assisted mediastinoscopic Lymphadenectomy (VAMLA) and to assess the rate of persistent N2-3 disease in patients with clinical (c) N2-3 non-small cell lung cancer (NSCLC) after neoadjuvant treatment. The diagnostic performance of integrated positrón emisión tomography (PET) – computed tomography (CT) as well as the diagnostic performance of the whole restaging protocol have also been analysed.

Methods

Prospective observational single-centre study of patients with NSCLC and histologically proven mediastinal involvement (cN2-3), treated with neoadjuvant therapy who underwent restaging prior to lung resection. The restaging protocol included PET-CT at completion of treatment, and, for patients with stable disease or partial response and feasible complete resection, invasive restaging by VAMLA was performed. Extended cervical mediastinoscopy (ECM) was added to VAMLA in patients with left-lung cancers. Systematic nodal dissection (SND) at lung resection was considered the reference test to confirm negative VAMLAs. Pathologic findings were reviewed and staging values were calculated using the standard formulas.

Results

Forty-one patients with cN2-3 NSCLC received neoadjuvant therapy after which the tumours were restaged with EBUS-TBNA and VAMLA. The most common neoadjuvant therapy was concomitant cisplatin-based chemotherapy and radical radiotherapy (mean 58.3 Gy +/- 3.9) (n=33). Other therapies used were chemoradiotherapy and immunotherapy (n=2), chemotherapy alone (n=2), chemotherapy and immunotherapy (n=2), tyrosine-kinase inhibitor and immunotherapy in (n=1), and immunotherapy alone in (n=1).

VAMLA was technically feasible in all patients, although 6 were incomplete due to fibrosis. The mean number of lymph node stations explored was 3 (SD 0.8) with a mean number of 10 lymph nodes (SD 6.1) per patient. The most common complication of VAMLA was the temporary palsy of left recurrent nerve that ocurred in four patients. VAMLA detected ycN2-3 disease in 10 patients, 8 cases of single-level N2 disease and 2 cases of multi-level N2 disease.

Thirty-one patients with negative VAMLA underwent lung resection. Final pathologic findings from SND were: ypN0 in 28 patients, ypN1 in 2 patients and ypN2 in 2 patients (one positive #9 station and one positive #5 station; these were considered true negative results of VAMLA because these nodes fall beyond the reach of the exploration. However, they were considered false negative of the whole restaging protocol).

The diagnostic performance of VAMLA in restaging was: sensitivity, 1 (95% CI: 0.72-1); negative predictive value (NPV), 1 (95% CI:0.89-1); accuracy, 1 (95% CI: 0.91-1). The diagnostic performance of PET-CT was: sensitivity 0.08 (95% CI: 0.01-0.35), NPV 0.68 (95% CI: 0.52-0.81) and accuracy 0.61 (95% CI 0.47-0.74). The restaging values of the whole restaging protocol, including PET-CT, EBUS-TBNA, VAMLA and ECM and SND were: sensitivity, 0.83 (95% CI: 0.55-0.95); NPV, 0.93 (95% CI: 0.80-0.98); and accuracy, 0.95 (95% CI: 0.84-0.98).

The rate of persistent N2-3 disease for the whole series was 29.3% (10 cases identified at VAMLA and 2 cases at tumour resection).

Conclusions

This preliminary results with VAMLA to restage cN2-3 NSCLC after neoadjuvant therapy demonstrated high accuracy and a high rate of persistent N2 that might be undetected if restaging was based solely in imaging techniques. Therefore, VAMLA should be included in restaging algorithms to select patients that would benefit from multidisciplinary approach.