Mediastinoscopy as a standardised procedure for mediastinal lymph node staging in non-small cell lung carcinoma

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Staging is an essential part of the work-up of a patient presenting with non-small cell lung cancer (NSCLC). It is impossible to decide which treatment is appropriate for an individual patient without information regarding tumor extension, regional lymph node metastases and distant metastases. The ability to assess mediastinal involvement is important since the presence of pathologic mediastinal lymph nodes (MLNs) worsens the prognosis and, in most cases, precludes radical resection.

Cervical mediastinoscopy and computed tomography are the two most widely used techniques for the assessment of the MLN status. Their precise role in MLN staging however is not agreed upon. Therefore, in many clinics mediastinoscopy is not a standard procedure for MLN staging. We aimed to assess the benefits of routine mediastinoscopy.

In 1997 we started to perform mediastinoscopy on every patient with potentially operable NSCLC in response to a study of De Leyn et al., who had advised this strategy to reduce the number of exploratory thoracotomies [1]. Only patients with T1 squamous cell carcinoma were excluded because bypassing mediastinoscopy in these cases results in only a low exploratory thoracotomy rate [2]. We also started to take routine biopsies of all paratracheal (N2), tracheobronchial (N4) and subcarinal (N7) nodes during mediastinoscopy even if not suspect during inspection and palpation.

In this way we investigated 76 patients, with a mean age of 63 years from October 1997 until January 1999. Tumor histology was obtained by bronchoscopy and in a few cases by mediastinoscopy. Sixty-six patients underwent mediastinoscopy of which 16 showed MLN disease. Three more cases of N2 disease (all of the subcarinal node, N7) were missed by mediastinoscopy. In 10 cases mediastinoscopy was not performed. Eight of them had T1 squamous cell carcinoma. Two patients, in one of which N2 disease (N7) was found by MLN dissection, did not undergo mediastinoscopy due to logistical reasons. Of the 50 patients with a negative CT-scan, five were prevented from exploratory thoracotomy by the routine use of mediastinoscopy (10%), which limited the total number of exploratory thoracotomies from nine (17%) to four (4/57 = 7%). Sensitivity of mediastinoscopy was 16/19 = 84% and specificity was 100%.

In our opinion these results are satisfactory and therefore we advise to perform mediastinoscopy on every patient with possibly operable NSCLC, regardless of the outcome of CT, except for patients with T1 squamous cell carcinoma. During mediastinoscopy biopsies of all MLN stations should be taken routinely, even if not suspect during inspection and palpation.

Whether these recommendations will remain valid in the future is uncertain. One of the most promising developments for staging the mediastinum is radio-labeled 18F-fluoro-2-deoxy-D-glucose positron emission tomography (FDG-PET scan) for patients with NSCLC. In particular the negative predictive value of FDG-PET seems to be very high [3,4,5]. We are currently involved in a randomised study comparing conventional and PET staging. The results of that study may yet further define the value of staging investigations and the options for treatment.

References


