Title: The prevalence of metastasis to the aortopulmonary window lymph nodes (stations 5 and 6) in patients with left lung carcinoma: A retrospective analysis of 566 patients

Body: Objectives. The two major drainage pathways of the left lung are the subaortic and para-aortic lymph node pathways. However, the prevalence of metastasis to the aortopulmonary window lymph nodes (APW-LNs) in patients with lung cancer remains unknown. Methods. Between 1995 and 2011, 566 patients with left lung carcinoma, were retrospectively investigated. Patients with mediastinal lymph node metastasis (stations 2R, 4R, and/or 7) that could only be accessed by standard mediastinoscopy (n=97) were excluded, whereas patients with APW-LNs found to be positive by extended cervical mediastinoscopy (ECM) (n=26) were included. Results. Tumor was located central in 232, upper-lobe in 178, lower-lobe in 59 of the patients. The rate of metastasis to the APW-LNs was 17.6% (n=83) (#5 in 41, #6 in 23, both #5 and #6 in 19 patients). Metastasis was detected in 26 patients by ECM, and in 57 by thoracotomy. We found that upper-lobe tumors had more APW-LNs metastasis compared with central and lower-lobe tumors (29.2%, 11.6%, 6.8%, respectively, p<0.0001). Adenocarcinoma was a predisposing factor for APW-LNs metastasis (p=0.04), whereas tumor size had no effect (p=0.789). Upper-lobe tumors were found to have more multiple APW-LNs metastasis (p=0.005). By multivariate analysis, the upper-lobe tumor was an independent risk factor for APW-LNs metastasis (p<0.0001). Independent risk factors for multiple APW-LNs metastasis were upper-lobe tumor and female sex. Conclusion. The rate of metastasis to the APW-LNs is high in patients with left lung carcinoma. The most important risk factors for metastasis are upper-lobe tumor and adenocarcinoma.