Objective: In an interim report we evaluate the diagnostic impact of texture analysis of lymph nodes in the mediastinum in patients with primary lung cancer. Histopathology is reference standard.

Methods: Using texture analysis, we analysed 19 lymph nodes from patients with primary lung cancer. The analysis was performed using TexRAD (an image heterogeneity analysis software developed by TexRAD Ltd, UK). Histology was reference standard. Mean (M), Entropy (E) and uniformity (U) were derived for different filter values (1.0-2.5: fine to coarse textures) on the entire volume of the individual nodes. M represents mean grey-level intensity (i.e. Hounsfield Units on unfiltered conventional CT images), E represents irregularity and U represents uniform distribution of grey-level. Combined, these values represent measures of heterogeneity within the selected lymph node.

Results: M (mean +SD) was significantly higher for malignant lymph nodes than for benign lymph nodes (mean + SD) when looking at coarse textures (p<0,028) and on unfiltered data (p<0,011) respectively. When other filters were applied, a tendency for higher M values on malignant nodes was noticed, but the difference was not statistically significant. There was no difference or tendencies when looking at neither E nor U.

Conclusion: Texture analysis seems to be a promising tool in the evaluation of lymph nodes in the mediastinum as presented on contrast-enhanced CT. However, in spite of the promising results, much larger studies must be applied before the discipline can be introduced to daily clinical work up.