

Evaluating VATS versus Open Surgery for Non-Small Cell Lung Cancer: A 5-year Retrospective Study

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Abstract

Background and Objectives: The efficacy and safety of video-assisted thoracoscopic surgery (VATS) versus open thoracotomy in the treatment of non-small cell lung cancer (NSCLC) were evaluated with a focus on mediastinal lymph node dissection, postoperative recovery, and long-term outcomes including survival rates and disease-free intervals.

Materials and Methods: This retrospective study analyzed data from 228 NSCLC patients treated at the Institute of Oncology Bucharest from 2016 to 2022. Both VATS and open surgical approaches were compared, with variables including demographic data, comorbidities, surgical outcomes, and postoperative complications meticulously recorded. Statistical significance was assessed using chi-square and independent samples t-tests.

Results: Among the findings, VATS demonstrated significantly better two-year progression-free survival rates for patients in early stages (Stages 1-3) of NSCLC compared to open surgery, with p-values <0.01 and <0.001, respectively. In contrast, no significant difference was observed in Stage 4. Furthermore, VATS resulted in shorter operative times (mean 299 vs. 347 minutes, p<0.001), less estimated blood loss (98.68 mL vs. 160.88 mL, p<0.001), reduced chest tube duration (5.78 days vs. 12.17 days, p<0.001), and decreased hospital stays (12.0 days vs. 27.7 days, p<0.001).

Conclusions: VATS is associated with improved long-term disease-free survival for early-stage NSCLC and more favorable short-term surgical outcomes, highlighting its advantages over open thoracotomy. Despite its benefits, VATS did not significantly reduce postoperative complications compared to open surgery.

Key words: lung cancer, general surgery, oncology, thoracic surgery