

Segmentectomy Achieves Non-Inferior Survival Outcomes Compared to Lobectomy in Peripheral ≤ 3 cm Non-Small Cell Lung Cancer with Occult Lymph Node Metastases

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Disclosure

The authors declare no conflict of interest.

Structured Abstract

Background

This study aims to compare the survival outcomes of segmentectomy versus lobectomy in cN0 NSCLC patients with pathologically confirmed occult pN1/2 lymph node metastases and demonstrate that segmentectomy provides non-inferior long-term survival. While lobectomy remains the standard surgical approach for ≤ 3 cm non-small cell lung cancer (NSCLC), growing evidence suggests that segmentectomy offers comparable survival outcomes. However, whether segmentectomy provides equivalent prognostic benefit in patients with occult lymph node metastases remains unclear.

Methods

We retrospectively analyzed cN0 NSCLC patients with pathologically confirmed pN1/2 disease treated at Shanghai Cancer Center between 2015 and 2023. Patients were categorized into segmentectomy and lobectomy groups. After 1:2 nearest-neighbor propensity score matching (PSM), clinical and prognostic outcomes were compared between the groups.

Results

A total of 363 patients were included, and after 1:2 nearest-neighbor propensity score matching, 71 patients who underwent segmentectomy and 112 who underwent lobectomy were selected. Survival analysis showed no significant difference between the two groups in overall survival ($P=0.526$) and recurrence-free survival ($P=0.780$). Subgroup analyses revealed no significant differences in survival across most clinical variables.

Conclusions

Among patients with tumors ≤ 3 cm and occult pN1/2 lymph node metastases, segmentectomy was

associated with survival outcomes comparable to lobectomy. These findings suggest that segmentectomy may be a viable surgical alternative in appropriately selected NSCLC patients with occult nodal involvement.

Figure

