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SEGMENTECTOMY VERRSUS LOBECTOMY IN NON-SMALL CELL LUNG CANCER SMALLER THAN 2.5 CENTIMETERS (CM): A MULTICENTER, RETROSPECTIVE, NON-INFERIORITY STUDY

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OBJECTIVES

Current studies in early-stage non-small cell lung cancer (NSCLC) have shown that segmentectomy is non-inferior to lobectomy in patients with non-small cell lung cancer smaller or equal to 2 cm. Nevertheless, due to the disparity between radiologically measured tumor diameter and surgical-pathological diameter, performing segmentectomy becomes inevitable for patients with tumors larger than 2 cm. Our aim was to explore whether segmentectomy was non-inferior to lobectomy in patients with NSCLC smaller than 2.5 cm.

METHODS

A total of 290 patients who underwent segmentectomy for N0 NSCLC measuring less than 2.5 cm and 229 patients who underwent lobectomy were analyzed. Primary end point was overall survival. Overall survival was analyzed on an intention-to-treat basis.

RESULTS

Tumor diameter, surgical margin distance, and hospital stay duration were statistically significantly higher in the lobectomy group ($p<0.001$, $p<0.001$, $p<0.001$, respectively). Five-year survival rates were 90.3% and 66.8% for in segmentectomy and lobectomy groups respectively ($p=0.142$; HR:0.720; 95%CI:0.463-1.120; Figure) Pleural invasion, lymphatic invasion, vascular invasion, surgical margin positivity, presence of STAS and postoperative complications were statistically significantly less in the segmentectomy group ($p<0.001$, $p<0.001$, $p<0.001$, $p<0.001$, $p=0.021$, $p=0.007$, respectively). Multivariate analysis revealed that cardiac risk index, pulmonary risk index and pathological diagnosis (adenocarcinoma/non-adenocarcinoma) were found to be independently associated with survival($p=0.016$, HR:0.051, 95%CI:0.004-0.577; $p=0.033$, HR: 0.308, 95%CI:0.104-0.911, $p=0.022$, HR:1.667, 95%CI:1.077-2.580, respectively).

CONCLUSIONS

Segmentectomy is non-inferior to lobectomy in terms of survival in patients with NSCLC smaller than 2.5 cm. Adenocarcinoma histology, pulmonary and cardiac risk indices have an impact on overall survival. The consideration of these parameters is essential in deciding between lobar or sublobar resection.

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Keywords: Non-Small Cell Lung Cancer, Segmentectomy, Lobectomy.

