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Objectives: The use of video-assisted thoracoscopic surgery (VATS) approach for Stage III Lung Cancer (LC) is controversial due to doubts on oncological radicality, with no data available on the results of Robotic Assisted Thoracic Surgery (RATS). This study wants to assess the safety and effectiveness of RATS for major lung resections in Stage III LC patients.

Methods: Retrospective multicentre study of patients with clinical or pathological N2 LC who underwent RATS lung resection. Perioperative outcomes, recurrence patterns, and overall survival were assessed.

Results: From 2007 to 2016, 194 patients underwent RATS major lung resection for Stage IIIA LC at 7 high volume robotic centres. Preoperative N2 disease was diagnosed in 64 cases (33.3%), and occult N2 in 128 cases (66.7%). Neoadjuvant treatment (Group A) was given in 32 cases (16.5%); adjuvant treatment (Group B) in 109 (56.2%), and no treatment (Group C) in 51 (26%). Mean duration of surgery was 199±83 min. The rate of conversion was 14%, with no difference among groups ($P=0.8$). R0 resection was achieved in 96.6%. Postoperative morbidity grade III-V (Clavien-Dindo) occurred in 13%, 6% and 18% in groups A, B, and C respectively, with no difference between groups ($P=0.11$). 30 days postoperative mortality was 2.2%. The median length of stay was 4 days ($P=0.98$). The 3-year Overall Survival (OS) was 56% with no differences between clinical and occult N2 ($P=0.57$) and between Group A, B and C ($P=0.574$). However, 3-year OS was 59% for patients with ≤ 2 positive lymph nodes and 49% for more than 2 ($P=0.001$). Local recurrence was observed in 11 cases (5.7%).

Conclusions: Even with the limitation of a retrospective analysis, RATS major lung resection for Stage-III N2 LC patients was safe and feasible, with low conversion and complication rates. Oncological outcomes appear to be comparable to those reported after an open approach.

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ROBOTIC APPROACH IN THE TREATMENT OF STAGE III LUNG CANCER: A RETROSPECTIVE MULTICENTRE ANALYSIS OF PERIOPERATIVE AND ONCOLOGICAL RESULTS

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