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Short-Term Outcomes of Anatomical Lung Resection Using Robotic-Assisted Thoracic Surgery (RATS) in Lung Cancer Patients : Single – Center Data

공지사항

- 소속기관이나 저자명이 드러나지 않도록 해주세요.
- 제목 슬라이드 포함 최대 6장, Font size 20 이상
- PPT 파일 작성 후 PDF로 전환해서 접수(필수)

Purpose

- Since its introduction, the robot-assisted surgery has continued to evolve, offering significant advancements in minimally invasive thoracic surgery.
- Recent studies indicate that the outcomes of robotic-assisted thoracic surgery may be comparable to those of video-assisted thoracic surgery (VATS).
- However, the surgeon's learning curve with the RATS remains a critical factor influencing these outcomes.
- This study aims to analyze the early postoperative outcomes of robot-assisted lung resections and assess the impact of the surgeon's learning curve using single-center data.

Methods

- Between january 2008 and may 2024, data of 304 patients who underwent anatomical lung resection with RATS at a single center.
- Key perioperative outcomes such as operative time, postoperative complications, and hospital length of stay were evaluated.
- Additionally, the surgeon's learning curve was assessed by examining the relationship between surgical experience and patient outcomes.

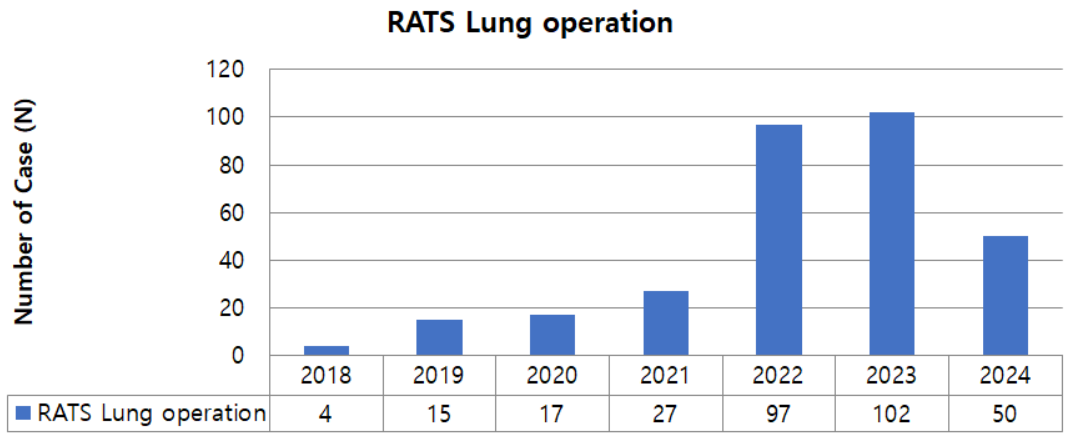
Variable	Value
Age (years), median (IQR)	61.3 ± 9.0
Less than 65	186 (61.2%)
65 or Older	118 (38.8%)
Sex	
Male	137 (45.1%)
Female	167 (54.9%)
The number of comorbidities	
0~1	226 (74.3%)
≥ 2	78 (25.7%)
Histologic structure	
ADC	260 (85.5%)
SqCC	32 (10.5%)
other NSCLC	11 (3.6%)
SCLC	1 (0.3%)
Neoadjuvant treatment	2 (0.7%)
Tumor size	26.6 ± 12.0
Concurrent malignant	17 (5.6%)
Adjuvant therapy	
Yes	82 (27.0%)
No	222 (73.0%)

Variable	Value
Operative method	
Lobectomy	261 (85.9%)
Bilobectomy	4 (1.3%)
Pneumonectomy	1 (0.3%)
Sleeve lobectomy	2 (0.7%)
Segmentectomy	36 (11.8%)
Clinical tumor factor (cT)	
cTis	2 (0.7%)
cT1a	29 (9.5%)
cT1b	90 (29.6%)
cT1c	86 (28.3%)
cT2a	51 (16.8%)
cT2b	24 (7.9%)
cT3	15 (4.9%)
cT4	5 (1.6%)
Clincal node factor (cN)	
N0	276 (90.8%)
N1	15 (4.8%)
N2	13 (4.3%)

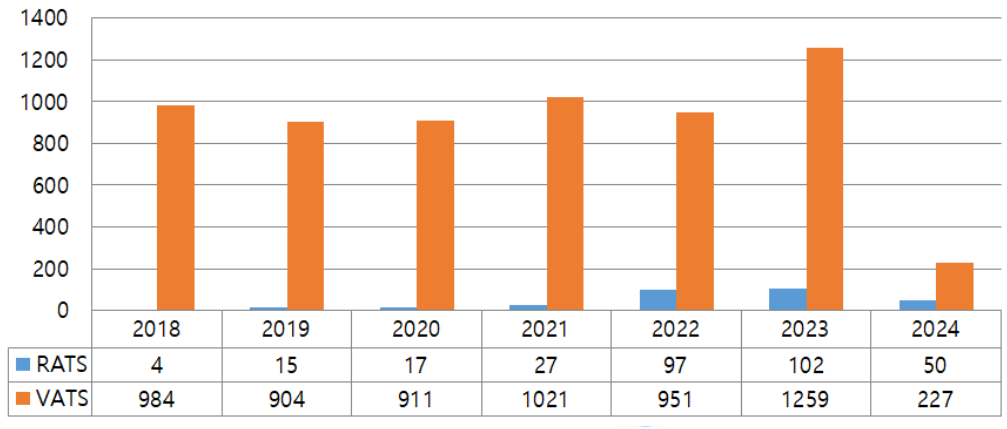
Results

- The number of robot-assisted surgeries increased significantly from 4 cases in the first year to over 100 cases annually as the surgeon gained experience.
- The number of VATS procedures remained stable regardless of the increase in robot-assisted surgeries.
- The learning curve was observed to plateau after approximately 30 cases, after which consistent improvements in surgical efficiency and patient safety were achieved.

Number of RATS \



Number of RATS& VATS



Results

- Early outcomes of the patients (n=304)

Variable	Number(%) or Median [IQR]
Thoracotomy conversion	3 (1.0%)
Hospital day	5.8 ± 2.4
Chest tube duration (days)	4.2 ± 2.2
Complication	10 (3.2%)
OP time	150.24 ± 35.41
30 day mortality	1 (0.3%)
Complete resection	299 (98.4%)
LVI	
Yes	123 (40.5%)
Extranodal invasion	
Yes	10 (3.2%)
No	294 (96.7%)
No of resected Lymph nodes	26.2 ± 10.2
No of resected metastatic Lymph nodes	1.0 ± 3.6

Conclusion

- The findings from this single-center study indicate that robot-assisted lung resections yield feasible early outcomes.

- As surgeons become more proficient with the robotic system, the benefits in terms of surgical efficiency and patient safety become more pronounced.

- These results underscore the value of continued training and experience in optimizing the use of robotic surgery in thoracic procedures.