



EP07.31: RETROSPECTIVE ANALYSIS OF CASES WITH THORACOSCOPIC LUNG SEGMENTECTOMY REQUIRING PROCEDURE MODIFICATIONS DURING SURGERY

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INTRODUCTION

Thoracoscopic segmentectomy for clinical stage I peripheral small-sized primary lung cancer is an increasingly common procedure. However, modifications to the surgical approach may occur rarely during surgery.

METHODS

Preoperative staging was performed using contrast-enhanced CT and PET/CT scan. Additionally, the indication for segmentectomy was determined by performing three-dimensional reconstruction of the preoperative CT on a workstation to assess anatomical variations and evaluate the margin. Four-port video-assisted thoracoscopic surgery was used to perform anatomical segmentectomy. We conducted a retrospective examination of the causes and short-term outcomes of cases in which a planned thoracoscopic segmentectomy required an alteration to the procedure during surgery.

DISCUSSION AND CONCLUSION

Compared to lobectomy, segmentectomy requires a greater understanding of peripheral anatomy. Intraoperative misidentification of anatomical structures or injury to the preserved side may necessitate a change in the surgical procedure. Throughout the procedure in segmentectomy, the entire surgical team must maintain a shared understanding of the anatomy during surgery. In addition, there is a need to develop equipment that can project preoperative 3D CT images onto the intraoperative surgical field to facilitate comparison.

REFERENCES & ACKNOWLEDGEMENTS

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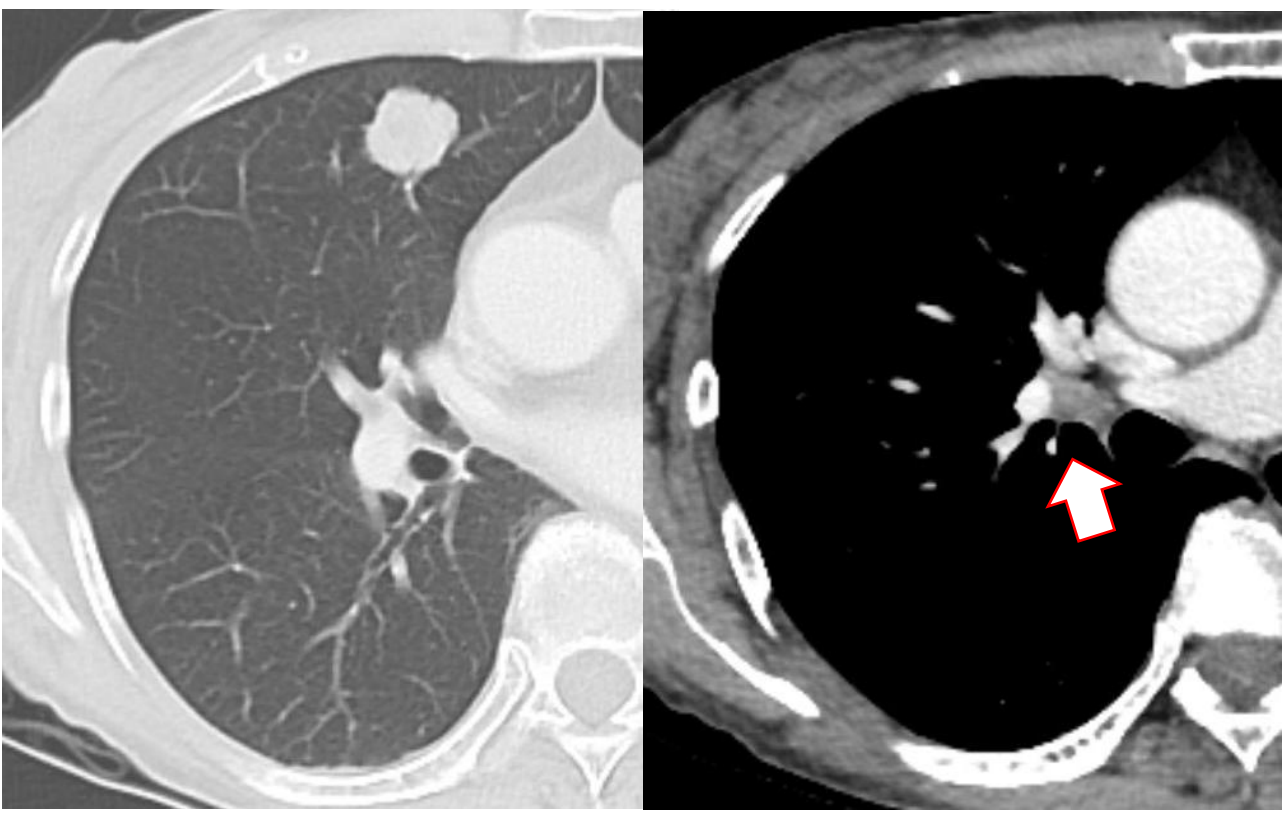
RESULTS

From 2014 to 2024, a total of 733 thoracoscopic segmentectomies were performed for peripheral small-sized lung cancer. Of these, eight cases (1.1%) required modifications to the procedure during surgery (seven cases were converted to lobectomy and one case to bi-segmentectomy).

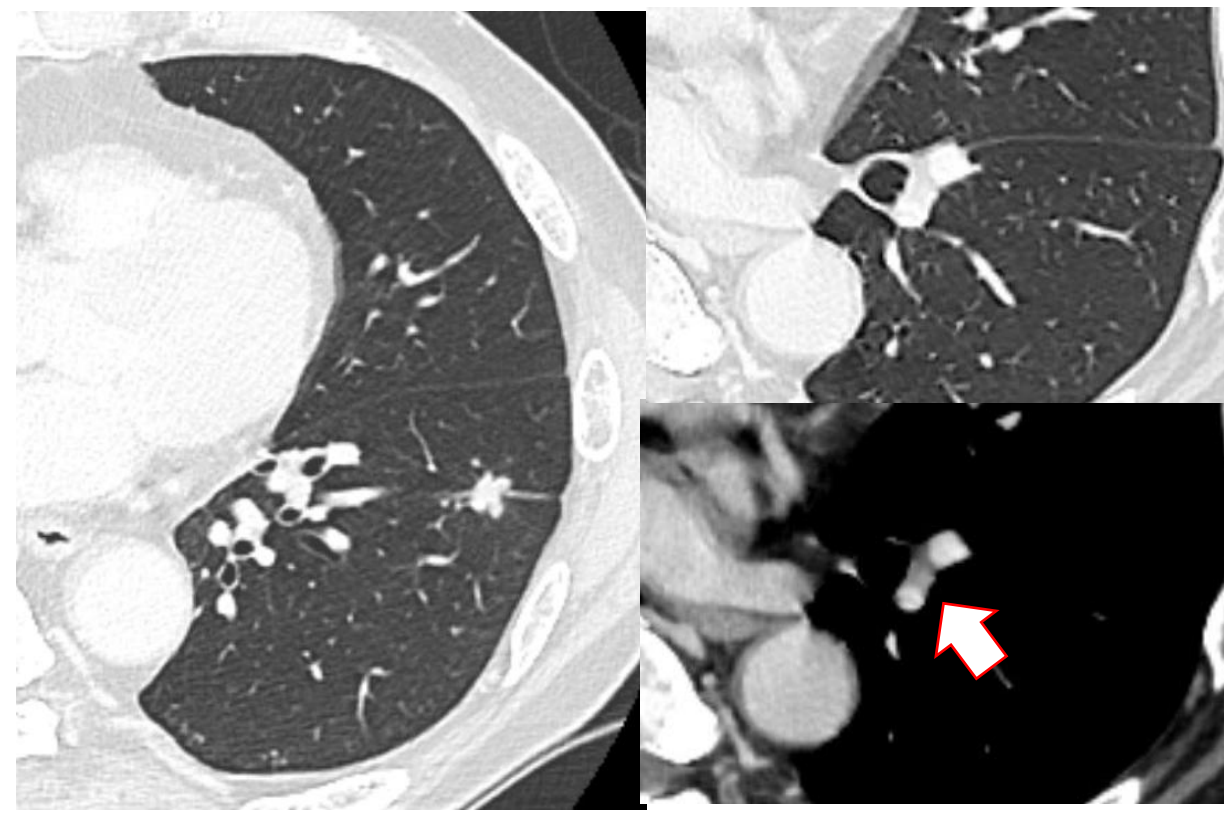
Table 1: Thoracoscopic segmentectomy requiring procedure modification

Case	Diseases	Segment	Conversion	Reasons	Operation time (m)	Bleeding (g)	ENT (POD)
1	Metastasis	Rt. S3	RUL	N1 (#12u) positive	180	20	5
2	Lung Cancer	Lt. S8	LLL	N1 (#13) positive	282	30	5
3	Lung Cancer	Rt. S3	RUL	Congestion	198	30	12
4	Lung Cancer	Rt. S6	RLL	Bronchial injury	169	5	7
5	Lung Cancer	Rt. Basal	RLL	V6 injury	267	950	6
6	Lung Cancer	Lt. S1+2+3	LUL	Misidentification of PV	225	40	5
7	Lung Cancer	Lt. S4+5	LUL	Misidentification of bronchus	223	40	5
8	Metastasis	Rt. S2	Rt. S2+3	Misidentification of bronchus	262	15	7

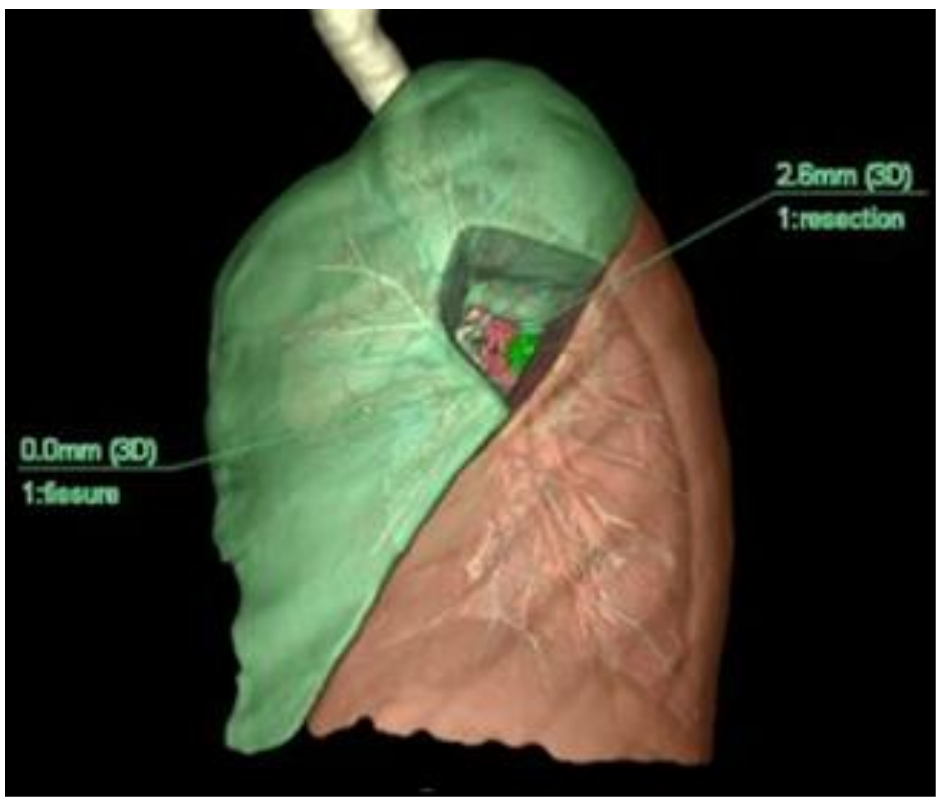
□ : Oncological reason
□ : Technical reason



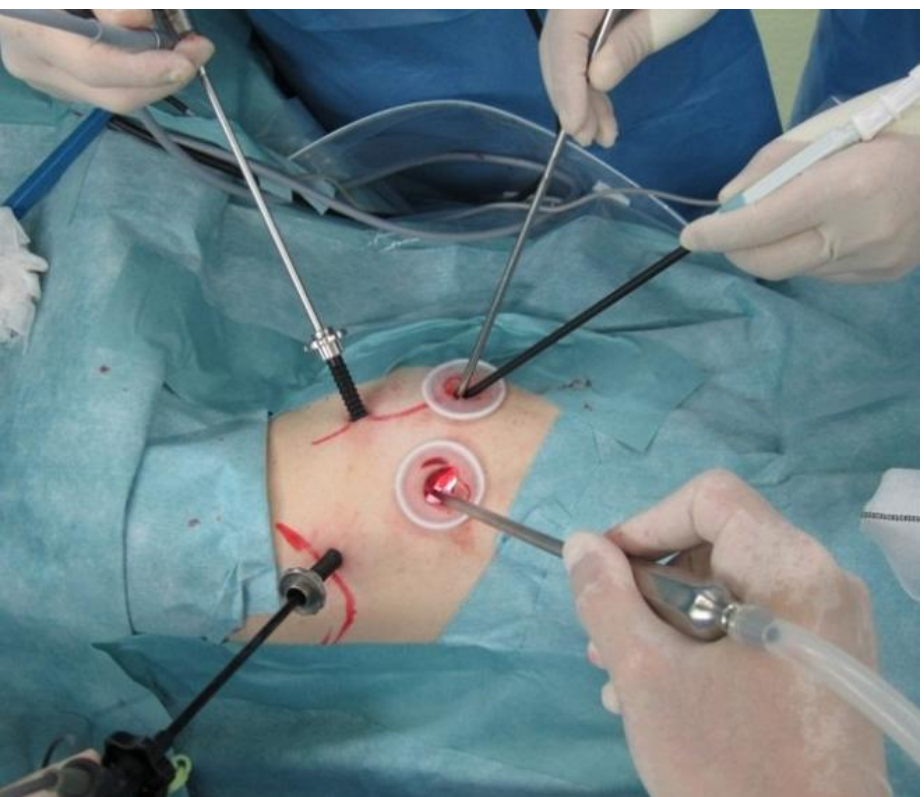
Case 1
Pulmonary metastasis from colorectal cancer
21 × 18 × 20 mm in size
#12u positive for cancer ⇒ Right upper lobectomy



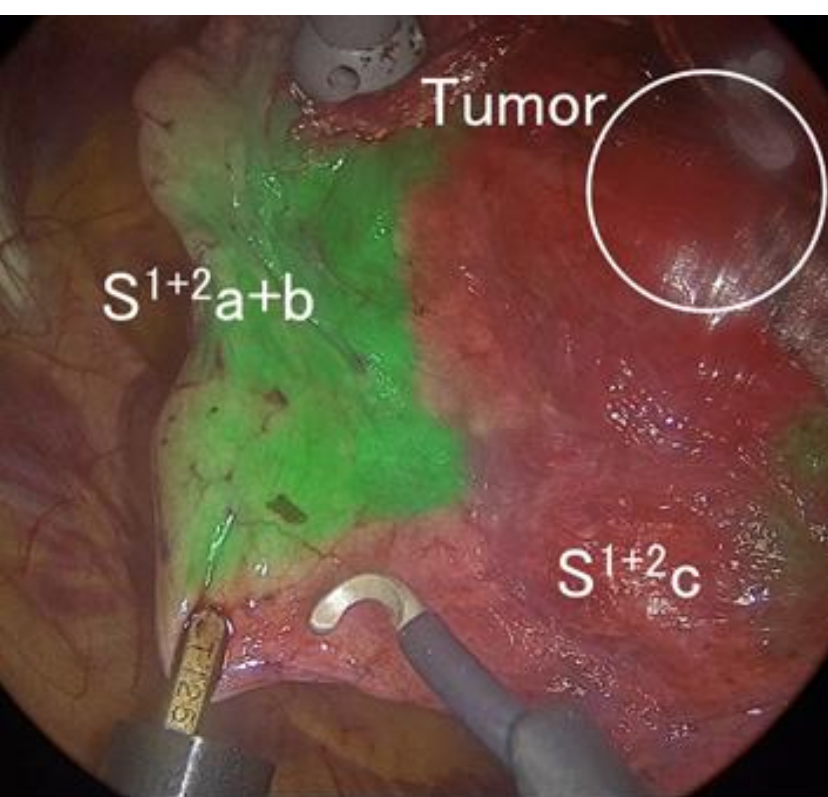
Case 2
Lung cancer, cT1bN0M0
11 × 11 × 11 mm in size
#13 positive for cancer ⇒ Left lower lobectomy



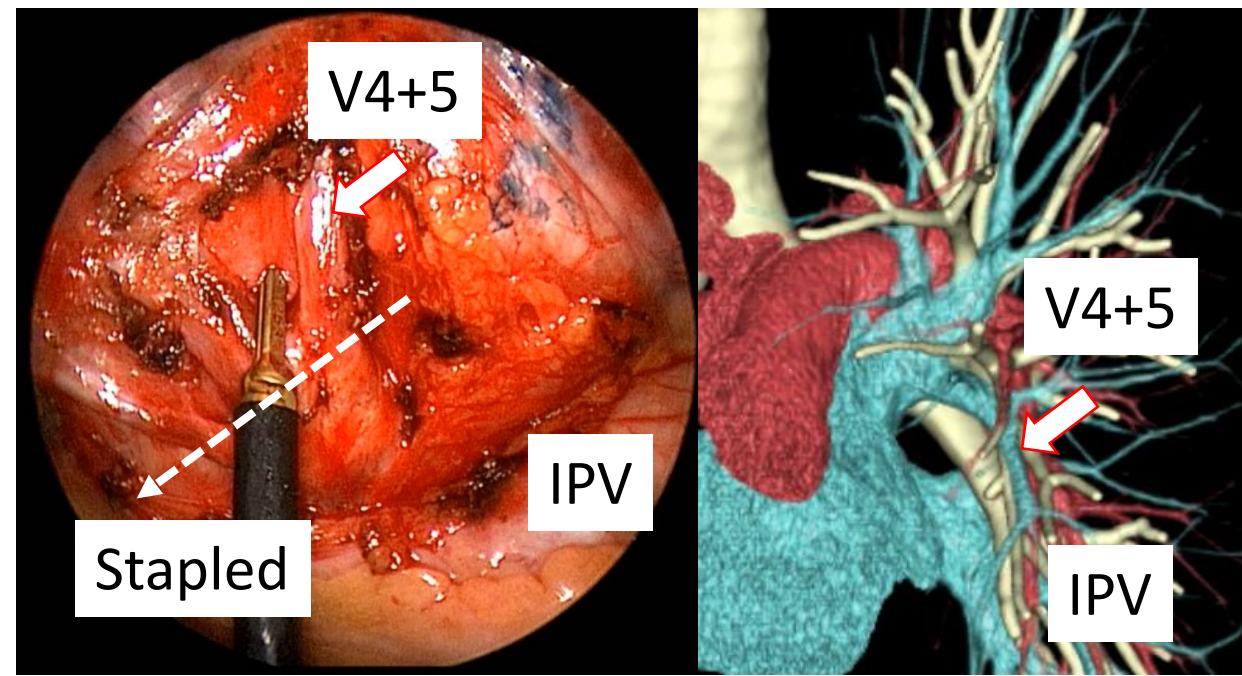
3D reconstruction CT image



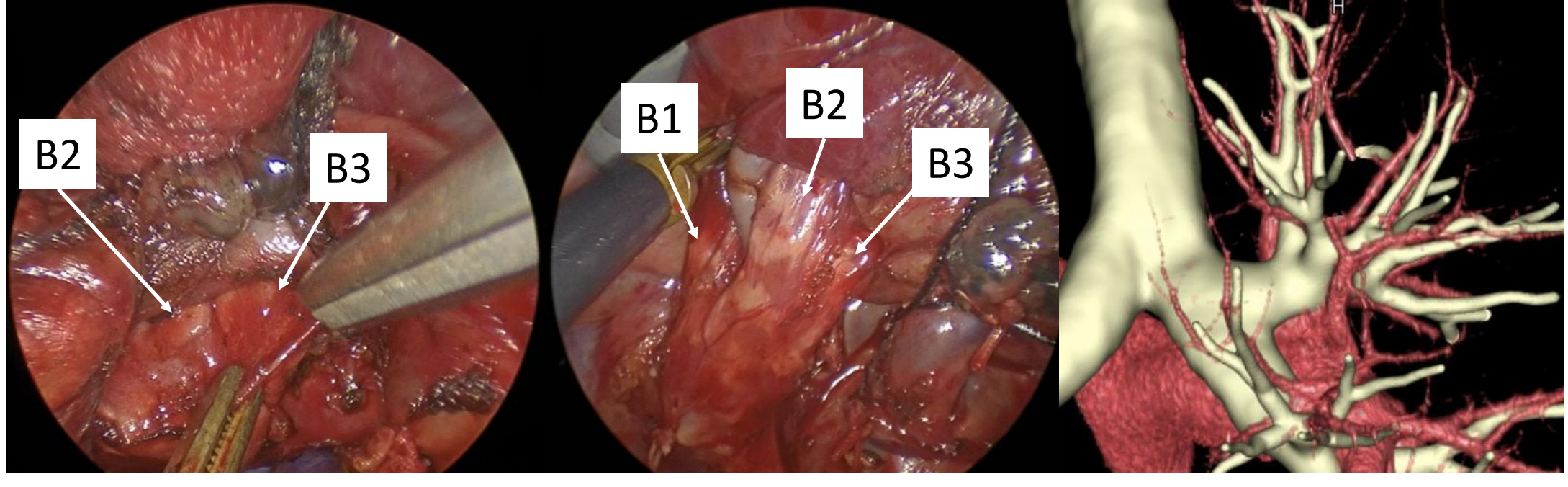
4 port VATS approach



ICG fluorescence image



Case 6
Lung cancer, cT1bN0M0, Left S1+2+3
Misidentification of PV (V4+5 was cut)
⇒ Left upper lobectomy



Case 8
Pulmonary metastasis from colorectal cancer
Right S2
Misidentification of B2 (B2+3 were cut) ⇒ Right S2+3 segmentectomy