

2023 대한심장혈관흉부외과학회

# 제55차 추계학술대회 & APELSO 2023

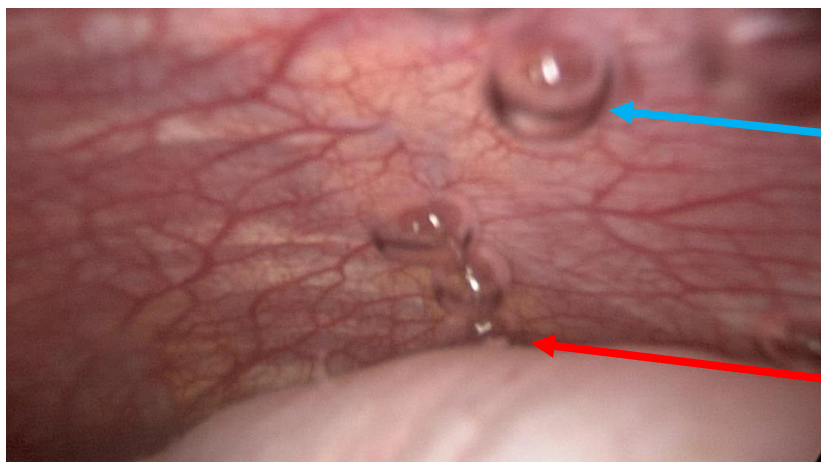
2023. 11. 02 (Thu) - 11. 04 (Sat), 그랜드 인터컨티넨탈 파르나스 서울

## Impact of Intraoperative Ruptured Bullae in Patients with Primary Spontaneous Pneumothorax



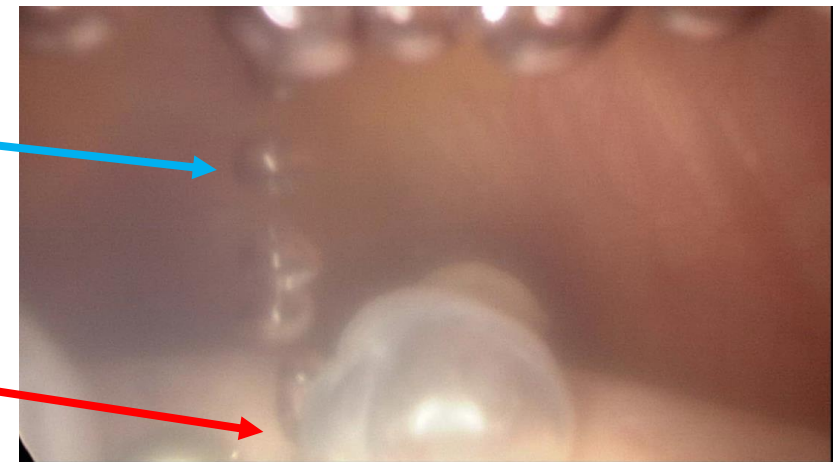
- Primary spontaneous pneumothorax (PSP) was mainly caused by rupture of bleb or bullae. However, the intraoperative prevalence of ruptured bleb or bullae was not common.
- Postoperative recurrence rate was reported as 3-7%. Neo-bullae formation was considered the reason for post-operative recurrence in PSP patients.
- The author assumed that incomplete resection of air leak site might developed without ruptured bullae and it might be other possible reason for post-operative recurrence in PSP patients, especially early period.
- The aim of this study was to evaluate impact of resection of ruptured bullae on early recurrence.

## Methods

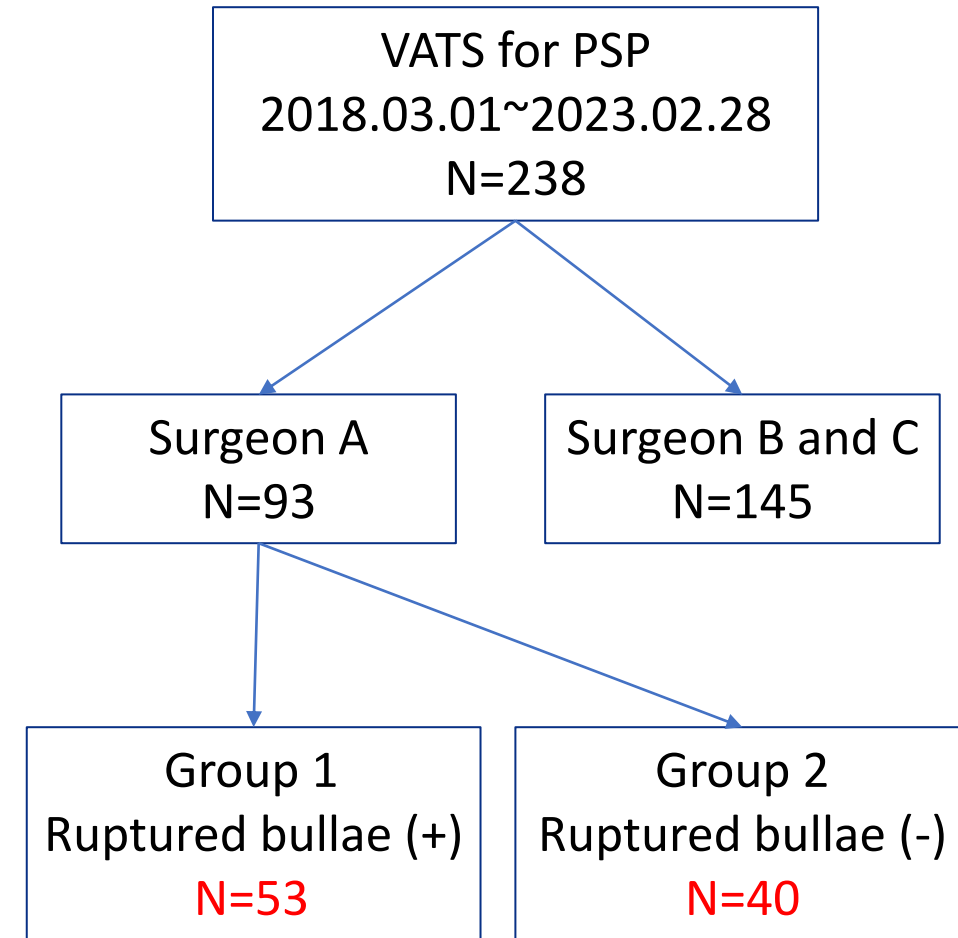


Air bubble

Air leak site

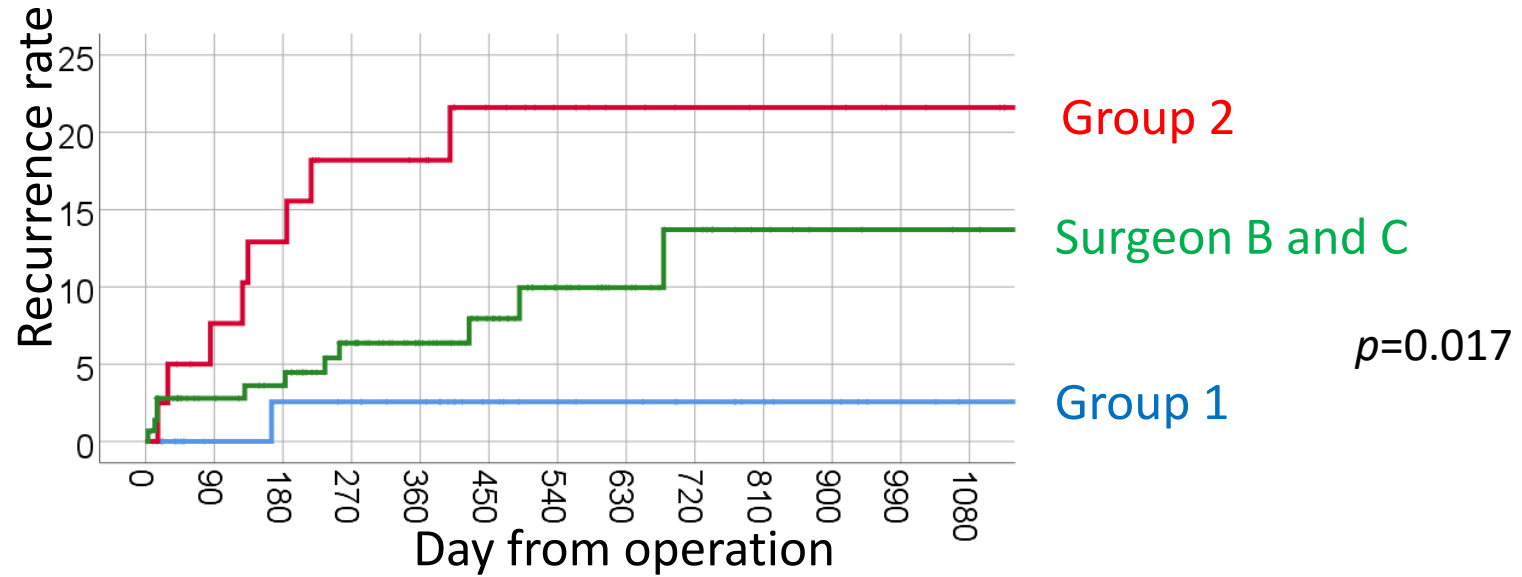


- This study was retrospectively to review medical record of patients with VATS operation for PSP.
- The study period was from Mar. 2018 to Feb. 2023
- During this period, three surgeon were employed by the hospital.
- From Mar. 2018, surgeon A had **intensively** tried to find air leak site during operation as his own surgical strategy and recorded in detail.
  - ✓ If the air leak site was not found **at least 15 minute of air leak test**, visible bullae was resected.
  - ✓ If bullae or bleb was not visible, blind wedge resection of apical pleura was performed.
  - ✓ All stapler line was covered with polyglycol acid sheet and fibrin glue.
- Surgeon B and C had sometimes tried to find air leak site and operation record was not proper.
  - ✓ Stapler line was also covered with same maneuver.



	Surgeon A (N=93)	Surgeon B and C (N=145)	<i>p</i> value
Sex (male)	85 (91.4%)	126 (86.9%)	0.285
Age (years, mean)	25.43	25.74	0.855
Smoking (current and ex-smoker)	18 (19.4%)	26 (17.9%)	0.782
Laterality, (right)	47 (50.5%)	76 (52.4%)	0.777
BMI (mean, kg/m <sup>2</sup> )	20.5 ± 3.37	19.4 ± 2.74	0.01
Wedge resection (mean, number)	1.5 ± 0.68	1.8 ± 1.00	0.007
Postoperative hospital stay (mean, day)	2.45 ± 1.37	3.95 ± 2.61	<0.001
Prolonged airleak	0 (0%)	4 (2.8%)	0.106
Overall recurrence	9 (9.7%)	11 (7.6%)	0.57
3 month recurrence	3 (3.2%)	4 (2.8%)	0.835
6 month recurrence	7 (7.5%)	6 (4.1%)	0.262

	Group 1 (N=53)	Group 2 (N=40)	<i>p</i> value
Sex (male)	46 (86.8%)	39 (97.5%)	0.068
Age (years, mean)	26.9 ± 10.86	23.4 ± 13.98	0.191
Smoking (current and ex-smoker)	11 (20.8%)	7 (17.5%)	0.694
Laterality, (right)	25 (47.2%)	22 (55.0%)	0.455
BMI (mean, kg/m <sup>2</sup> )	20.9 ± 3.69	19.9 ± 2.86	0.183
Wedge resection (mean, number)	1.45	1.60	0.308
Postoperative hospital stay (mean, day)	2.28 ± 1.50	2.68 ± 1.26	0.188
Overall recurrence	1 (1.9%)	8 (20.0%)	<b>0.003</b>
3 month recurrence	0 (0%)	3 (7.5%)	<b>0.043</b>
6 month recurrence	1 (1.9%)	6 (15.0%)	<b>0.018</b>



## Conclusion

- About 57% of PSP revealed ruptured bullae during operation with intensively air leak test.
- The surgical strategy of intensively air leak test before wedge resection did not influence the overall recurrence compared with who did not used it.
- But using this strategy, high risk patients for early recurrence within 6 months could be selected.
- Beyond stapler line covering to prevent neo-bullae formation, additional procedure such as whole apical covering, pleurectomy or pleurodesis could be considered in patients without ruptured bullae to prevent possible unresected target lesion.