THE INFLUENCE OF PRIOR VATS EXPERIENCE IN THE LEARNING CURVE FOR SINGLE-PORT VATS LOBECTOMY: A MULTICENTRE COMPARATIVE STUDY

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Objectives:

Competency in VATS lobectomy is estimated to be complete after 50 cases. We aimed to explore the impact of previous multiport VATS lobectomy competency in completing this workload of Single-Port procedures

Methods:

In a retrospective multicenter study six individual surgeons [three with previous competency in multiport VATS lobectomy (Group A) and three without (Group B)] submitted their first 50 cases using single-port VATS lobectomy. Extended and sublobar resections were excluded. Pre, peri and postoperative data were compared between the groups of surgeons. Chi-square and Wilcoxon's Rank Tests were used. Less experienced surgeons had previously attended dedicated training courses and visits to experts.

Results:

Results. As median (range) or %			
	GROUP A	**GROUP B**	**p value**
Age	63 (18-82)	68 (11-85)	<0.01
FEV1%	84 (51-137)	86 (32-157)	0.9
DLCO%	79 (39-117)	71 (33-120)	0.02
Lower Lobes	31%	41%	0.1
Tumour size (cm)	2.8 (0.4-12)	2.5 (0.9-10)	0.4
N2 stations	3 (1-6)	3 (0-5)	0.5
Operation time (min)	195 (60-420)	180 (55-420)	0.08
Duration drainage (days)	2 (0-26)	3 (0-35)	0.01
Hospital Stay (days)	4 (1-21)	4 (1-36)	0.7
ICU admission	3.3%	2%	0.4
Hospital death	0.7%	1.3%	0.5
Conversion to open	4%	12%	0.02

Three hundred cases were included. There were three hospital deaths (respire failure, sepsis and fatal stroke) and a further patient died after discharge (bilateral pulmonary embolism). There were no significant differences in the practicing times to achieve 50 cases, however surgeons in Group B performed significantly more open lobectomies (58 vs 1, $p< 0.001$) during the learning curve than surgeons in Group A . Experienced surgeons also performed complex resections (bronchial or vascular reconstruction) via Single-Port VATS during this initial period while none were performed in Group A. There were no differences in operative time, ICU admissions, hospital stay, complications, tumour size or number of N2 stations explored between the groups. Duration

of drainage and conversion rates were better in Group A. These differences decreased with experience.

Conclusion:
Postoperative outcomes during the learning curve of Single-Port VATS lobectomies are not greatly affected by previous multiport VATS experience. Less experienced surgeons were more selective in order to achieve their competency (more lower lobectomies and more open surgery) and were initially more likely to convert to thoracotomy. Competency in Single-Port VATS lobectomy can be acquired safely with adequate training and case selection, but will be “faster” with previous competency in multiport VATS lobectomy

Keywords: surgical outcomes, learning curve, single-port VATS