



P1.116: Preoperative Predictors of Occult Lymph Node Metastasis and STAS in Clinical Stage IA Invasive Lung Adenocarcinoma

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INTRODUCTION

Sublobar resection has been increasingly adopted for early-stage lung cancer. However, the optimal surgical strategy remains controversial for patients with occult lymph node metastasis (OLM) or spread through air spaces (STAS). This study aimed to identify preoperative risk factors for OLM and STAS in clinical stage IA invasive lung adenocarcinoma to inform surgical decision-making.

METHODS

A retrospective analysis was performed in 492 consecutive patients with clinical stage IA invasive lung adenocarcinoma who underwent curative surgical resection at the Lung Cancer Center of West China Hospital. Clinical characteristics, preoperative serum tumor markers, and CT imaging features were collected. Univariable and multivariable logistic regression analyses were conducted to identify independent predictors of OLM and STAS.

DISCUSSION AND CONCLUSION

- In clinical stage IA invasive lung adenocarcinoma, elevated CEA and spiculation sign were independently associated with OLM, while male, tumor located in the right lung, tumor diameter >2 cm, elevated CEA, and solid nodules were independently associated with STAS.
- These findings may aid in preoperative risk stratification and support individualized surgical decision-making.

REFERENCES & ACKNOWLEDGEMENTS

Artificial Intelligence (AI) Use Disclaimer

No artificial intelligence (AI) tools were used in the development of this presentation.

Disclosure

The authors declare no conflict of interest related to this work.

RESULTS

- Among the 492 patients, OLM was identified in 32 cases (6.5%), and STAS was identified in 67 cases (13.6%).
- Multivariable analysis further identified **elevated CEA** (OR = 5.84, 95% CI: 2.41-14.19, $P < 0.001$) and **spiculation sign** (OR = 8.99, 95% CI: 1.11-72.59, $P = 0.039$) as independent predictors for OLM.
- For STAS, multivariable analysis demonstrated that **male** (OR = 2.83, 95% CI: 1.26-6.37, $P = 0.012$), **right lung location** (OR = 2.69, 95% CI: 1.39-5.21, $P = 0.003$), **tumor diameter >2 cm** (OR = 5.22, 95% CI: 1.03-26.44, $P = 0.046$), **elevated CEA** (OR = 3.08, 95% CI: 1.33-7.12, $P = 0.009$), and **solid nodules** (OR = 5.80, 95% CI: 2.13-15.84, $P < 0.001$) were independent risk factors.

Multivariable Logistic Regression predicting occult lymph node metastasis and STAS in stage IA invasive lung adenocarcinoma

Occult lymph node metastasis				Spread through air space			
Variables	Odds ratio	95% CI	P-value	Variables	Odds ratio	95% CI	P-value
BMI (Kg/m ²)	1.10	0.98, 1.24	0.119	Male	2.83	1.26, 6.37	0.012*
Diameter				Diameter			
1 – 2cm	1.74	0.21, 14.61	0.610	1 – 2cm	3.48	0.73, 16.53	0.117
> 2cm	2.51	0.29, 21.93	0.406	> 2cm	5.22	1.03, 26.44	0.046*
CYFRA21-1	2.27	0.98, 5.28	0.057	Smoking History	0.45	0.19, 1.08	0.073
CEA (ng/mL)	5.84	2.41, 14.19	<0.001*	CEA (ng/mL)	3.08	1.33, 7.12	0.009*
Lobulation sign	1.67	0.48, 5.83	0.422	Lobulation sign	1.20	0.47, 3.03	0.704
Spiculation sign	8.99	1.11, 72.59	0.039*	Spiculation sign	1.41	0.60, 3.30	0.435
Vacuole Sign	0.50	0.22, 1.12	0.093	Vacuole Sign	0.58	0.32, 1.05	0.073
Pleural traction sign	1.39	0.43, 4.53	0.587	Pleural traction sign	2.22	0.92, 5.36	0.076
Air Bronchogram Sign	1.85	0.63, 5.44	0.264	Air Bronchogram Sign	0.83	0.41, 1.69	0.608
				History of cancer	0.14	0.02, 1.10	0.061
				right lung	2.69	1.39, 5.21	0.003*
				Solid nodules	5.80	2.13, 15.84	<0.001*
				Solid component on mediastinal window	2.51	0.51, 12.44	0.259

CI, Confidence interval; BMI, Body Mass Index; CEA, Carcinoembryonic antigen; *, $P < 0.05$.