

# Can EBUS-TBNA Differentiate Pulmonary Large Cell Neuroendocrine Carcinoma From Other Histologic Subtypes?

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## Title

Can EBUS-TBNA Differentiate Pulmonary Large Cell Neuroendocrine Carcinoma From Other Histologic Subtypes?

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## Background

Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is known to be the “best first test” modality for mediastinal staging in patients with lung cancer who is suspected to have lymph node metastasis by radiology. Large cell neuroendocrine carcinoma (LCNEC) is a subtype of high-grade neuroendocrine carcinoma of the lung like as small cell lung cancer (SCLC). The prognosis of the patients with this type of tumor shows poorer survival and therapeutic strategy for the LCNEC is a unique; i.e. surgical indication is conformed to non-small cell lung cancer (NSCLC) but chemotherapeutic regimen is conformed to SCLC. Hence, it is very important to differentiate LCNEC from other histologic subtypes.

## Methods

We performed retrospective chart review of the 1365 patients who underwent EBUS-TBNA for the diagnosis or staging of lung cancer between January 2004 and December 2011.

## Results

In this study, 471 Lung Cancer patients with mediastinum or hilar lymph node metastasis were enrolled and 13 patients were diagnosed as LCNEC by EBUS-TBNA. 12 out of 13 (92.3%) cases were histologically diagnosed and one case was diagnosed by cytology alone. Within the 12 cases, 6 cases were diagnosed by morphology and other 6 cases were diagnosed by immunohistochemistry. The histological diagnosis rate for LCNEC (92.3%) was higher than for other histologic subtypes (Adenocarcinoma 91.1% 206/223 or Squamous carcinoma 83.3% 40/65). Eleven out of the 13 LCNEC cases were treated with platinum-based combined chemotherapies including etoposide or irinotecan. In 2 out of the 11 cases, the chemo therapies were performed in neoadjuvant setting.

## Conclusion

LCNEC can be diagnosed by EBUS-TBNA if adequate sampling was performed including histological evaluation. EBUS-TBNA is useful modality for the diagnosis of lymph node metastasis as well as determines the histological subtypes and contributes to improve the quality of lung cancer treatments.

# Characteristics, Diagnosis methods and chemotherapy of LCNEC

No	Age	Sex	Positive LN	Diagnosis			Chemotherapy
				Cytology	Morphology	IHC	
1	69	M	7	Carcinoma	○		×
2	75	M	4L	Carcinoma	○		CBDCA+ <b>VP-16</b>
3	54	M	4R	LCNEC			CDDP+ <b>VP-16</b> /CDDP+ <b>CPT-11</b>
4	74	M	4R	No malignancy		○	Unknow
5	76	M	4L	SCLC	○		CDDP+ <b>VP-16</b> /CBDCA+ <b>CPT-11</b>
6	77	M	4R	Carcinoma		○	CDDP+ <b>VP-16</b>
7	36	M	4R	LCNEC susp	○	○	Unknown
8	68	M	7,4L,11L	No malignancy		○	CDDP+ <b>VP-16</b> / <b>CPT-11</b>
9	71	M	4R,11s	P/D,P/D	○	○	×
10	62	M	7	NEC susp		○	CDDP+ <b>VP-16</b> /CDDP+ <b>CPT-11</b>
11	69	M	4R	LCNEC susp	○	○	CDDP+ <b>VP-16</b> /AMR/CDDP+ <b>CPT-11</b>
12	77	M	4R	LCNEC susp	○		CDDP+ <b>VP-16</b> /CDDP+ <b>CPT11</b>
13	67	M	4R	Carcinoma		○	CDDP+ <b>VP-16</b>