

# The Oncologic Significance of Station 9 Nodes During Lobectomies

**Objective:** To evaluate the clinical significance of sampling station 9 nodes during lobectomy for primary NSCLC and its association with oncologic outcome.

**Methods:** A single center retrospective analysis of patients who underwent a lobectomy for primary NSCLC from 8/2020 – 9/2022. Patients with fewer than 3 N2 stations sampled, secondary pulmonary metastasis, and diagnosis other than NSCLC were excluded. PET-avidity and final pathology results were documented for station 9 nodes along with the associated lobe of the primary tumor. Median follow-up was 12 months.

**Results:** 419 lobectomies were performed from 8/2020 – 9/2022 of which Station 9 was sampled in 126 cases. 37 cases with less than 3 N2 stations sampled and 1 case of pulmonary metastasis were excluded. 89 lobectomies with R0 resection for primary NSCLC with station 9 nodes sampled were analyzed (46 upper lobe, 3 middle lobe, 40 lower lobe). There were 46 females (52%) and 73 cases of adenocarcinoma (82%), 14 squamous cell carcinoma (16%) and 2 large cell cancers (2%). Station 9 nodes were pathologically positive in 5 cases (6%), negative in 79 cases (89%), and non-diagnostic in 5 cases (6%). The non-diagnostic results demonstrated fibroadipose tissue without lymphoid tissue. There was 1 case (1%) of PET-avid station 9 node. The 5 cases of positive station 9 nodes were only associated with tumors in the middle and lower lobes and none in the upper lobes. 68 patients (76%) were included in follow-up analysis. After excluding non-diagnostic nodes, 26 patients with middle and lower lobe tumors were included. 3 patients (12%) had locoregional recurrence (pathologic stages IA, IIIA), 2 (8%) had distant recurrence (IIA, IIB), and 1 patient (4%) had both (IIB). 2 of the patients who recurred (IIIA) had multi-station N2 disease. One had a positive station 9 node and one negative. Relationship among station 9 disease, pathologic stage, and number of recurrences is shown in table 1.

**Conclusions:** Occult metastasis to station 9 nodes associated with middle and lower lobe cancers is surprisingly common (4 of 43, 9%) and is not seen in primary NSCLC of upper lobes. Station 9 lymph nodes should be sampled for primary NSCLC of middle and lower lobes.

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<b>Negative station 9 (upper lobes)</b>	<b>N (38)</b>	<b>Patients with recurrence</b>	<b>Type of recurrence</b>
Pathologic stage: 0	3	0	-
IA	12	2	1 both*, 1 locoregional
IB	6	1	Distant
IIA	2	0	-
IIB	6	1	Distant
IIIA	3	0	-
IIIB	6	0	-
<b>Positive station 9 (middle + lower lobes)</b>	<b>N (5)</b>	<b>Patients with recurrence</b>	<b>Type of recurrence</b>
Pathologic stage: IIIA	3	1	Locoregional
IIIB	2	0	-
<b>Negative station 9 (middle + lower lobes)</b>	<b>N (21)</b>	<b>Patients with recurrence</b>	<b>Type of recurrence</b>
Pathologic stage: IA	7	1	Locoregional
IB	1	0	-
IIA	2	1	Distant
IIB	9	2	1 both*, 1 distant
IIIA	2	1	Locoregional
IIIB	0	0	-

\* = locoregional and distant

Table 1. After excluding non-diagnostic cases, recurrence data was available for 26 patients with middle and lower lobe tumors and 38 with upper lobe tumors. Various pathologic stages were associated with recurrence. Increased number of recurrences were not seen in patients with positive station 9 nodes.