

**PATTERN OF SPREAD TO THE LATERAL NECK IN METASTATIC WELL DIFFERENTIATED THYROID CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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**Background/Purpose:** There remains controversy surrounding the extent of lateral neck dissection required in patients with papillary thyroid cancer (PTC) and metastatic lateral neck lymphadenopathy. This meta-analysis aims to better characterize the pattern of spread.

**Methods:** Meta-analysis using MEDLINE and EMBASE including all cohort studies reporting pattern of lateral neck disease in PTC patients who underwent a neck dissection for metastatic lymphadenopathy. Our main outcome was number of patients with positive involvement at a given level as a percentage of the cohort of patients with positive lateral neck disease, each level being measured separately.

**Results:** Eighteen studies were included in our meta-analysis. Levels IIa and IIb had disease in 53.1% (95% CI 46.6-59.5%) and 15.5% (95% CI 8.2-27.2%) respectively. Level III and Level IV were involved in 70.5% (95% CI 67.0-73.9%) and 66.3% (95% CI 61.4-70.9%) of specimens. Studies that did not distinguish between level Va and Vb or in which both were collapsed into one category showed a total level V involvement of 25.3% (95% CI 20.0-31.5%).

**Discussion & Conclusion:** This systematic review of the literature and a meta-analysis of the pattern of spread indicates significant rates of lymph node metastasis to all lateral neck levels in PTC patients with regional involvement. This evidence leads us to recommend a comprehensive selective neck dissection of levels IIa, IIb, III, IV and Vb in patients with lateral neck disease from PTC. The evidence for level Va is lacking as most studies did not distinguish between levels Va and Vb, and the border between the two levels was inconsistent. Future studies will need to address these sublevels separately.