# LYMPHATIC VESSEL DENSITY AS A PROGNOSTIC FACTOR IN ORAL SQUAMOUS CELL CARCINOMA USING D2-40

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## Introduction

- OSCC is characterized by a high local invasion rate and cervical metastasis. The presence of lymph node metastasis at the time of diagnosis is an indication of poor prognosis[1]. The density of lymphatic vessels could play a key role in the dissemination and metastasis of carcinomas[2]

## Objectives

- The aim of the study is to calculate the lymph vessel density (LVD) in oral squamous cell carcinoma cases.
- To correlate the results with the positive and negative lymph node cases.

## Methods

- Twenty-two surgical specimens were taken from the primary tumor of eleven OSCC cases proven histologically to have positive lymph nodes and eleven cases with negative lymph nodes.
- Immunohistochemical (IHC) marker of mouse monoclonal antibody D2-40 Cat.#CM 266 (0.1ml) was used. Immunohistochemical staining was performed using the Labeled- Strept Avidin Biotin (LSAB)complex method.

- The density of the lymphatic vessels (D2-40-positive cells) was determined following the Hot spot method described by Weidner et al[3].
- The selected areas were imaged using the cell A imaging software for life science microscopy® Olympus soft imaging system, and the immunohistochemically positive cells were counted using the Image J free software package.

## Results

- All the studied cases (100%) showed immunoreactivity to D2-40.
- The difference in the mean LVD between the lymph node positive and negative groups using (student t-test) was statistically significant (P< 0.001).

Table (1): Comparison Between the Two Studied Groups According to LVD

| | Lymph node status | | t | p |
|---|---|---|---|---|
| | Negative (n=11) | Positive (n=11) | | |
| **LVD** | | | | |
| **Min-Max** | 16.50 – 28.0 | 23.0 – 47.50 | 5.221* | <0.001* |
| **Mean ± SD.** | 21.86 ± 3.83 | 36.64 ± 8.57 | | |
| **Median** | 21.50 | 40.50 | | |

t, p: t and p values for **Student t-test** for comparing the two groups
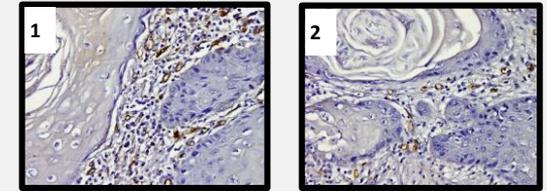*: Statistically significant at p ≤ 0.05



**Figure 1 and 2:** (1: LN positive, 2: LN negative cases of mod diff SCC) showing the difference in density between the stained lymph vessels (Immuno Stain of D2-40 x200)

## Conclusions

- Lymphangiogensis could be useful for selecting OSCC patients who are more susceptible to metastatic spread via lymphatic pathways to undergo elective cervical lymph node dissection
- Use anticancer inhibitors of lymphangiogenic factors to destroy lymphatic vessels, which could inhibit lymphatic metastasis.

## References

1. Kohler HF, Kowalski LP. Prognostic impact of the level of neck metastasis in oral cancer patients. Braz J Otorhinolaryngol. 2012;78(6):15-20.
2. Mashhadiabbas F, Mahjour F, Mahjour SB, Fereidooni F, Hosseini FS. The immunohistochemical characterization of MMP-2, MMP-10, TIMP-1, TIMP-2, and podoplanin in oral squamous cell carcinoma. Oral Surg Oral Med Oral Pathol Oral Radiol. 2012;114(2):240-50.
3. Weidner N, Semple JP, Welch WR, Folkman J. Tumor angiogenesis and metastasis--correlation in invasive breast carcinoma. N Engl J Med. 1991;324(1):1-8.