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RESEARCH ARTICLE

DEPTH OF INVASION, TUMOR BUDDING, SATELLITE TUMOR: A PREDICTOR OF NODE INVOLVEMENT IN ORAL SQUAMOUS CELL CARCINOMA

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ABSTRACT

Background: The most overwhelming area in head and neck area for essential threatening tumors are oral cavity and over 90% malignant growth comprises of squamous cell carcinoma (SCC). It has a high inclination for extensive lymph node metastases. There are different elements anticipating node involvement and among them tumor related factor is progressively dependable. **Objectives:** Correlation between the depth of invasion, tumor budding, and presence of satellite tumors in node involvement and treatment planning of T1/T2/T3 N0 M0 oral tongue SCC. **Methods:** Depth of invasion, tumor budding, satellite tumors were studied in 20 cases of T1, T2, T3 and clinically N0 nodes. **Results:** Tumor budding (5 clusters at the invasive front of the tumor) depths of invasion (2.5cm), presence of satellite tumors were associated with poor prognosis in patients with early oral tongue SCC. **Conclusion:** Analyzing the depth of invasion, tumor budding, and presence of satellite tumors in node involvement and treatment planning of T1/T2/T3 N0 M0 oral tongue SCC is recommended.

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INTRODUCTION

The most predominant location in head and neck for primary malignant tumors are oral cavity and more than 90% cancer consists of squamous cell carcinoma. It has a high affinity for early lymph node metastases (Van Den Brekel, 1999). Tumor thickness (TT)/ depth of tumor invasion give off an impression of being a solid indicator of cervical lymph-node involvement in squamous cell carcinoma of the oral cavity. The expanding profundity of depth of invasion and the micro vascular brought about by neoplastic development may decide vicinity to vessels and lymphatics, consequently encouraging the tumor's capacity to metastasize (DiTroia, 1972). During the 1970s, Breslow set up a solid connection between tumor thickness and both without tumor endurance and metastasis in patients with cutaneous melanoma (Breslow, 1970; Breslow, 1975). Mohit-Tabatabai *et al* and Spiro *et al* previously applied Breslow's speculation in regards to the connection between lymph node involvement and TT to oral squamous cell carcinoma (OSCC) (Mohit-Tabatabai, 1986; Spiro, 1986). From that point forward, numerous investigations have been done to test this relationship.

Most examinations have proposed that TT is a solid indicator for lymph node involvement in OSCC, including perceptions from our institution (Kane, 2006; Asakage, 1998; Al-Rajhi, 2002; Clark, 2006). However, contention exists about the ideal TT cutoff point for a clinically pertinent take an enormous risk of harboring microscopic disease. Our investigation has depicted a solid relationship between's tumor thickness and node involvement.

MATERIALS AND METHODS

The indicative histological slides of 20 patients of T1, T2, T3 and clinically N0 with oral SCC oversaw between January 2016 and January 2017 were gathered. All examples were assessed in the light magnifying lens independently.

- Depth of invasion was estimated from the surface of the tumor to the deepest point of invasive tumor in paraffin-embedded sections.
- Tumor budding was characterized as a solitary malignancy cell or a bunch of <5 disease cells in the stroma of the intrusive front.
- Tumor budding is a statement of 2 properties of malignancy: loss of cellular cohesion and active invasion.

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Satellite tumor is one that has spread from the primary tumor through the lymph system and is not more than 2 centimeters away from the original tumor.

RESULTS

Increased tumor budding, depth of invasion, and presence of satellite tumor were strongly associated with node involvement in the patients of OSCC. This comparison was statistically significant ($P < 0.0001$). In spite of the fact that we were not able to determine cut off point because of small sample size, mean tumor thickness about or more noteworthy than 2.5cm indicated 25% node involvement.

Table No 1: Depth of Tumor Invasion
SD=Standard deviation

Depth of Tumor	No. of Patients	Percentage
≤ 4	12	60%
≥ 4	08	40%
Total	20	100%
Mean ± SD	9.40±10.98	

Table No 2: Tumor Budding (Number of Cells) SD=Standard deviation

Number Of Cells	No. of Patients	Percentage
≤ 5	5	25%
≥ 5	15	75%
Total	20	100%
Mean ± SD	5.15±3.34	

Table 4. Correlation of Mean Depth of Tumor in Node Positive Patients

Satellite involvement	No. of Patients	Percentage
Present	3	15%
Absent	17	85%
Total	20	100%

Nodal Involvement	No. of Patients	Mean ±SD	t-value	p-value
Present	5	25.80±10.73	8.02	$P < 0.0001$
Absent	15	3.93±1.71		S

DISCUSSION

Mohit-Tabatabai *et al.* (1986) and Spiro *et al.* (1986) were the principal authors to apply Breslow's speculation with respect to the connection between nodal involvement and tumor thickness to OSCC. Mohit-Tabatabai *et al.* (1986) arranged a review study dependent on 84 patients with stage I–II SCC of the floor of the mouth. The authors assessed three thickness ranges (<1.5 mm, from 1.6 to 3.5 mm, and >3.6 mm) and found a metastases occurrence of 2%, 35%, and 60%, respectively. Statistical analysis uncovered a huge connection among thickness and metastasis in tumors >1.5-mm thick. As an outcome, they recommended performing modified neck dissection in cases of tumor thickness >1.5 mm and with no clinical nodal evidence. Spiro *et al.* (1986) retrospectively analyzed 92 patients with T1–T2–T3 disease who had been treated for carcinoma of the tongue or floor of the mouth and followed up for at least 2 years. Some of them likewise experienced elective neck dissection on clinically negative necks.

Using univariate and multivariate analysis, they found a critical distinction when they picked a cutoff thickness of 2 mm, both for locoregional recurrences and survival. At last, he considered elective neck dissection proper for N0 oral cancer when the thickness of the primary tumor surpassed 2 mm, on the grounds that the danger of metastasis moved toward 40% in his study. Hosal *et al.* (1998) chose to utilize a cutoff point of 9 mm, yet they evaluated carcinomas of any stage and discovered importance just for the presence of nodal involvement at presentation, but not for locoregional recurrences. Woolgar, 1999 found a huge increment in nodal metastases and a declining of survival for thickness of T2 lesions surpassing 8 mm. Al-Rajhi *et al.* (2002) discovered better relapse-free and disease-specific survival rates for thickness estimating under 10 mm in stage I–II carcinoma, yet no essentialness was found at a 5 mm cutoff.

Conclusion

An association between TT and cervical lymph node involvement is confirmed in this study. For oral tongue tumors thicker than 2.5cm, prophylactic neck management is generally recommended.

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Conflicts of Interest: None declared.

Keynotes

- A correlation was found between tumor thickness and node involvement.
- For oral tongue, tumors thicker than 2.5 cm, neck dissection is recommended.
- Prophylactic neck dissection can prevent mortality rate.

REFERENCES

- Al-Rajhi NM., Khafaga YM., Saleem M., Al-Zahrani AM., Al-Hebshi AS., El-Husseiny GA., Mourad WA., Al-Otieschan AT., Al-Amro AS. 2002. A study comparing different approaches in managing neck nodes in early carcinoma of the tongue. *Saudi medical journal*. Nov 1;23(11):1343-6.
- Asakage T., Yokose T., Mukai K., Tsugane S., Tsubono Y., Asai M., Ebihara S., 1998. Tumor thickness predicts cervical metastasis in patients with stage I/II carcinoma of the tongue. *Cancer: Interdisciplinary International Journal of the American Cancer Society*. Apr 15;82(8):1443-8.
- Breslow A. 1970. Thickness, cross-sectional areas and depth of invasion in the prognosis of cutaneous melanoma. *Annals of surgery*. Nov;172(5):902.
- Breslow A. 1975. Tumor thickness, level of invasion and node dissection in stage I cutaneous melanoma. *Annals of surgery*. Nov;182(5):572.
- Clark JR., Naranjo N., Franklin JH., Almeida JD., Gullane PJ. 2006. Established prognostic variables in NO oral carcinoma. *Otolaryngology—Head and Neck Surgery*. Nov;135(5):748-53.
- DiTroia JF. 1972. Nodal metastases and prognosis in carcinoma of the oral cavity. *Otolaryngol Clin North Am.*, 5(2):333-42.
- Hoşal AŞ., Ünal ÖF., Ayhan A. 1998. Possible prognostic value of histopathologic parameters in patients with carcinoma of the oral tongue. *European archives of oto-rhino-laryngology*. Apr 1;255(4):216-9.

- Kane SV., Gupta M., Kakade AC., D'Cruz A. 2006. Depth of invasion is the most significant histological predictor of subclinical cervical lymph node metastasis in early squamous carcinomas of the oral cavity. *European Journal of Surgical Oncology (EJSO)*. Sep 1;32(7):795-803.
- Mohit-Tabatabai MA., Sobel HJ., Rush BF., Mashberg A. 1986. Relation of thickness of floor of mouth stage I and II cancers to regional metastasis. *The American journal of surgery.*, Oct 1;152(4):351-3.
- Spiro RH., Huvos AG., Wong GY., Spiro JD., Gnecco CA., Strong EW. 1986. Predictive value of tumor thickness in squamous carcinoma confined to the tongue and floor of the mouth. *The American journal of surgery.* Oct 1;152(4):345-50.
- Van Den Brekel MW., Reitsma LC., Quak JJ. *et al.*, 1999. Sonographically guided aspiration cytology of neck nodes for selection of treatment and follow-up in patients with N0 head and neck cancer. *American journal of neuroradiology.* Oct 1;20(9):1727-31.
- Woolgar JA. 1999. T2 carcinoma of the tongue: the histopathologist's perspective. *British Journal of Oral and Maxillofacial Surgery.* Jun 1;37(3):187-93.
