Case Series

Supraomohyoid neck dissection in early carcinoma of oral cavity with clinically N0 neck: A case series

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ABSTRACT

Management of clinically N0 neck in early-stage oral squamous cell carcinoma (OSCC) remains controversial. Supraomohyoid neck dissection (SOHND) has emerged as an effective surgical technique for the elective treatment of cervical lymph nodes while minimizing functional morbidity. This case series evaluates the clinical outcomes, complications, and short-term prognosis of SOHND in early-stage oral cavity carcinoma patients with clinically negative neck nodes (N0). Five male patients with early-stage OSCC and clinically N0 neck underwent SOHND with primary tumor resection between December 2022 and February 2025. All patients had significant tobacco history (4–5 years). Surgical procedures involved lymph node clearance from Level I to Level III through a transverse horizontal neck incision. Patients were followed for 1.5 years without adjuvant radiotherapy or chemotherapy. All surgeries were completed without major intraoperative complications. Histopathological examination confirmed squamous cell carcinoma in all cases. No patients showed clinical signs of recurrence during the 1.5-year follow-up period. All patients experienced temporary speech difficulties that resolved with simple speech therapy. One patient developed a mucocele at 9 months, which resolved spontaneously. Neck scar contraction was observed in all cases without significant functional limitations. SOHND appears to be an effective and safe method for managing early-stage OSCC in clinically N0 patients, achieving satisfactory oncologic control while preserving function and minimizing surgical morbidity.

Key words: Early oral cancer, N0 neck, Oral squamous cell carcinoma, Selective neck dissection, Supraomohyoid neck dissection

Recent global data indicate that mouth and oral cavity cancers rank among the more commonly diagnosed cancers worldwide, with nearly 390,000 new cases reported in 2022, and a substantial proportion of diagnoses occurring at advanced stages, contributing to significant mortality [1,2].

Oral squamous cell carcinoma (OSCC) comprises 84–97% of all oral cancer cases. Risk factors include tobacco use, excessive alcohol, betel quid chewing, chronic irritation, poor oral hygiene, genetic predisposition, immunosuppression, and viral infections (human papillomavirus) [3]. Late-stage OSCC management is challenging and reducing treatment success and survival. A multidisciplinary approach (surgery, radiation, chemotherapy, targeted therapy, immunotherapy) is required. Surgery remains the primary and most effective modality in operable patients [4]. The presence of regional metastases in cervical lymph nodes is a significant prognostic factor, as nearly 40% of patients with OSCC present with nodal improvement at diagnosis. Thus, management of cervical lymph nodes is mandatory in treating OSCC [5].

Crile's radical neck dissection (RND) in 1906 removed all cervical lymph nodes and surrounding structures, causing significant functional and cosmetic deficits. Suarez's 1963 modified RND (MRND) preserved non-lymphatic structures, reducing morbidity. Selective neck dissection (SND) removes specific lymph node levels based on metastatic risk. Supraomohyoid neck dissection (SOHND) has emerged as an effective, function-preserving option for early-stage OSCC [6,7].

Research indicates that 91% of cervical node metastases from oral cavity cancers have been identified in levels I, II, and III. As a result, elective SOHND is increasingly being utilized for clinically N0 necks [8].

Access this article online

Received - 07 January 2026
Initial Review - 17 January 2026
Accepted - 17 February 2026

DOI: 10.32677/ijcr.v12i3.8038

Quick Response code

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However, debate persists on the most effective method for treating N0 neck, as several guidelines are presented in the literature. The present case series was selected due to the ongoing clinical controversy surrounding elective neck management in early-stage OSCC and the need for real-world outcome data from resource-limited settings. By documenting short-term oncologic and functional outcomes in clinically T2N0M0 patients, this series aims to address the practical applicability and safety profile of SOHND in routine surgical practice, thereby contributing to the evolving evidence base aligned with current surgical oncology guidelines. This case series aims to evaluate the morbidity, complications, and prognosis following SOHND in early-stage oral cavity carcinoma with clinically N0 neck.

CASE SERIES

Case 1

A 65-year-old male presented with a painful, non-healing ulcer on the right ventral tongue for 6 months (3.0 × 1.5 cm) with no cervical lymphadenopathy. Biopsy confirmed well-differentiated squamous cell carcinoma (T2N0M0). The patient underwent elective neck dissection (Levels I–III) and tumor resection. Follow-up to 18 months showed slurred speech at 3 months and a painless floor-of-mouth mucocele at 6 months, which resolved spontaneously (Fig. 1).

Case 2

A 44-year-old male presented with a 2-month history of a painful, non-healing ulcer of the left lower gingiva (4.0 × 1.0 cm) without cervical lymphadenopathy. Histopathology revealed well-differentiated squamous cell carcinoma of the alveolus (T2N0M0). Elective neck dissection (Levels I–III) with tumor resection was performed. Follow-up to 18 months was uneventful (Fig. 2).

Case 3

A 46-year-old male presented with a painful ulcer on the left lateral tongue for 2 weeks (3.0 × 1.0 cm) with no cervical lymphadenopathy. Biopsy confirmed well-differentiated squamous cell carcinoma (T2N0M0). The patient underwent elective neck dissection (Levels I–III) and tumor resection, with an uneventful 18-month follow-up (Fig. 3).

Case 4

A 65-year-old male presented with an ulcer and swelling of the right maxillary gingiva for 4 months (3.0 × 1.5 cm)

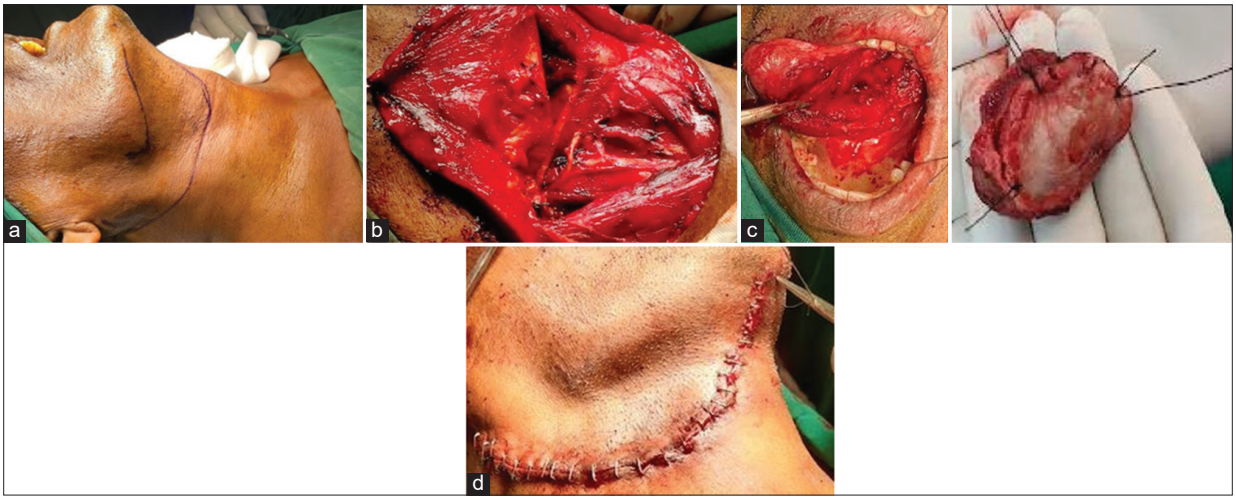

Figure 1: A) shows transverse horizontal incision placed for supra omohyoid neck dissection B) shows clearance of levels of lymph nodes from Level 1 to Level III c) shows intra oral view of the defect after resection of the primary tumour and partial glossectomy of tongue D) shows Final closure of the neck dissection with using staples

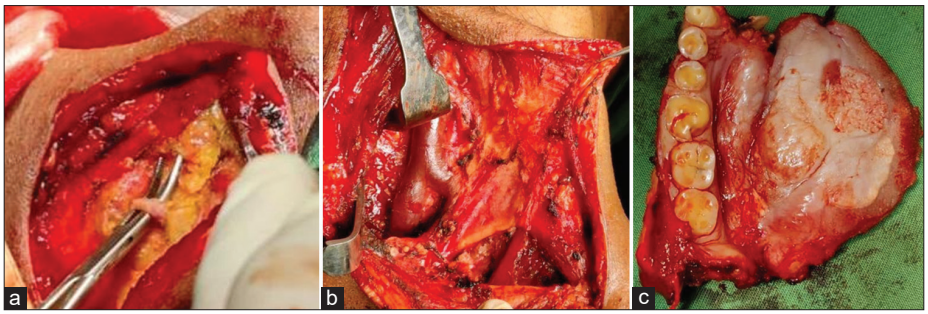

Figure 2: A) shows through transverse horizontal incision skin, subcutaneous, platysma and deep fascial plan reached and all-important vital structures identified, preserved and ligated B) shows level 1 to level III lymph nodes clearance C) shows primary tumour resection (hemi glossectomy along with marginal mandibulectomy)

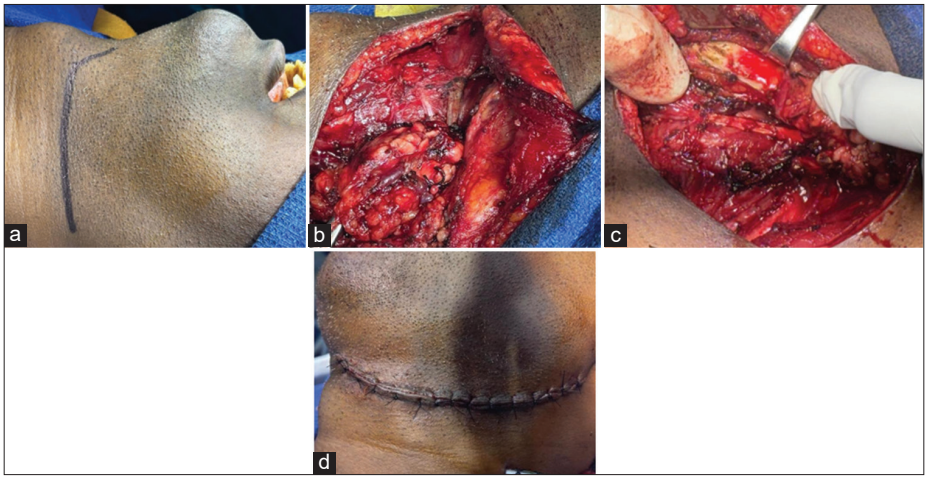

Figure 3: A) shows horizontal incision placed for supra omohyoid neck dissection B) shows presence of lymph nodes in level 1 to Level III c) shows clearance of lymph nodes from Level I to Level III D) shows final closure was done with using of 3 -0 non resorbable suture

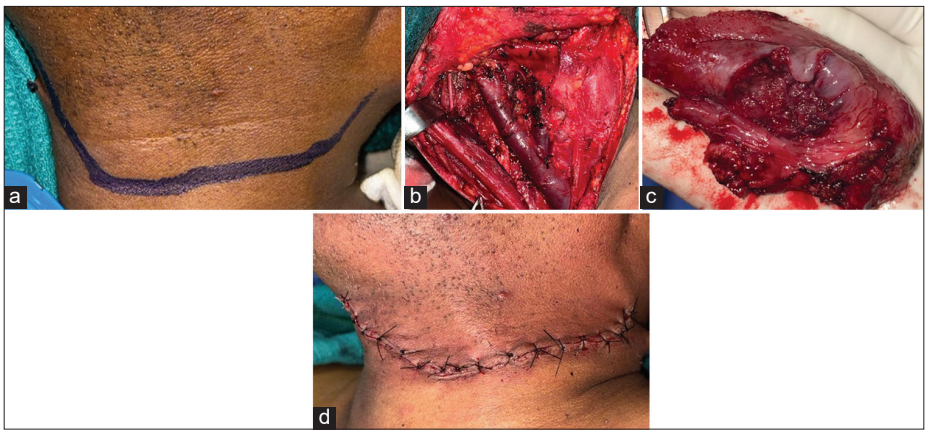

Figure 4: A) shows extended transverse horizontal incision placed for further dissection plane B) shows clearance of level 1 to Level III through supra omohyoid neck dissection C) shows resection of the tumour D) shows closure of neck dissection with using of non resorbable suture material

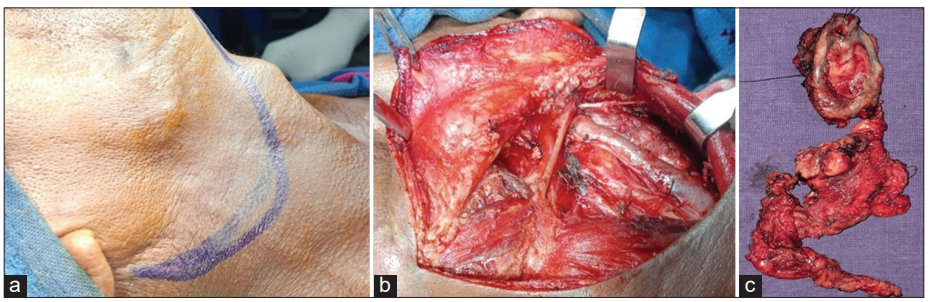

Figure 5: A) shows horizontal incision placed for supra omohyoid neck dissection B) shows presence of lymph nodes in level 1 to Level III c) shows clearance of lymph nodes from Level I to Level III D) shows final closure was done with using of 3 -0 non resorbable suture

and no cervical lymphadenopathy. Biopsy confirmed well-differentiated squamous cell carcinoma of the alveolus (T2N0M0). Elective neck dissection (Levels I–III) through a transverse neck incision followed by tumor resection was performed. Follow-up to 18 months was uneventful (Fig. 4).

Case 5

A 42-year-old male presented with a 15-day history of an ulcer on the left lateral tongue (2.5 × 1.5 cm) associated with a burning sensation and no cervical lymphadenopathy. Histopathology confirmed well-differentiated squamous cell carcinoma (T2N0M0). Elective neck dissection (Levels I–III) with tumor resection was performed. At 3-month follow-up, the patient reported slurred speech and was referred for speech therapy; subsequent follow-up to 18 months was uneventful. Table 1 depicts the summary of all five cases included in the present study (Fig. 5).

DISCUSSION

OSCC develops through a multistep carcinogenic process, beginning with dysplastic changes in the normal mucosa, which

Table 1: Clinical summary of cases

Case	Age/ Sex	Site of lesion	Size (cm)	Duration	Histopathology and margin status	Neck status	Treatment	Follow-up and outcome
1	65/M	Right ventral tongue	3.0×1.5	6 months	Well-differentiated SCC, clear margins	cN0	END (Levels I–III) + tumour resection	18 months; slurred speech at 3 months, transient mucocele at 6 months
2	44/ Male	Left lower gingiva (alveolus)	4.0×1.0	2 months	Well-differentiated SCC, clear margins	cN0	END (Levels I–III) + tumor resection	18 months; uneventful
3	46/ Male	Left lateral tongue	3.0×1.0	2 weeks	Well-differentiated SCC, clear margins	cN0	END (Levels I–III)+tumor resection	18 months; uneventful
4	65/ Male	Right maxillary alveolus	3.0×1.5	4 months	Well-differentiated SCC, clear margins	cN0	END (Levels I–III)+tumor resection	18 months; uneventful
5	42/ Male	Left lateral tongue	2.5×1.5	15 days	Well-differentiated SCC, clear margins	cN0	END (Levels I–III)+tumor resection	18 months; slurred speech at 3 months, referred for speech therapy

SCC: Squamous cell carcinoma

progressively evolve into invasive cancer capable of spreading to adjacent tissues and distant sites [9].

Literature reports 21–42% of oral cancers develop cervical nodal metastases. The primary prognostic factor for OSCC is the existence of lymph node metastases. Neck dissection techniques have evolved from RND to MRND, FND, and SND to reduce functional and aesthetic morbidity, since it preserves sternocleidomastoid muscle, internal jugular vein, and spinal accessory nerve. SND eliminates groups of lymph nodes having a high chance of occult metastases [6,7,10].

The highest incidence of nodal metastases from primary OSCC has been identified in research demonstrating that 91% of cervical node metastases from oral cavity tumors are concentrated in levels I, II, and III. The excision of lymph nodes located in levels I–III is referred to as SOHND. SOHND's objective is to eliminate positive nodes while maintaining functionality and lowering morbidity [8,11].

Previous clinical investigations have shown that elective SOHND with frozen section analysis in 57 newly diagnosed OSCC patients in 1991. Occult metastatic disease has been detected in 7 of the 41 frozen section analysis reports without metastatic disease. Only three cases of local failure had metastases. SOHND may detect clinically negative necks in squamous cell carcinoma patients [12].

In another analysis of N0-staged SOHND 43 patients in 1998. 7 of 48 N0-staged necks (15%) had occult metastases. Patients with pathologically N0 necks had an 88% survival rate, whereas those with N+ disease had 86%. They considered SOHND beneficial for staging [13].

The study examined SOHND with or without adjuvant radiation therapy in 2011. There had been 237 untreated oral cavity cancer patients in the research. In N0 and N1 necks, SOHND patients had 76.5% and 70.2% 5-year survival rates, respectively. Recurrence was 2% [1].

A large cohort study of T1/T2 oral tongue squamous cell carcinoma patients who received SOHND or MRND according to clinical nodal status (cN0 vs. cN+) in 2022 demonstrated that selective supraomohyoid neck dissection provided comparable oncologic control in clinically node-negative cases, whereas modified radical neck dissection remained appropriate for node-positive disease. The research project included 565 patients, with 501 undergoing SOHND and 64 MRND for nodal involvement. Multivariable analysis indicated no significant impact of neck dissection type on overall or disease-free survival. SOHND is safe for cT1-2N0/+ tongue cancer; research has observed [14].

In our case series, all five patients demonstrated satisfactory oncologic outcomes with no evidence of recurrence during the 1.5-year follow-up period. The findings from our study support the oncologic efficacy of SOHND in early-stage oral cavity squamous cell carcinoma with clinically N0 neck, as supported by previous clinical evidence. In their clinical trial, elective node dissection resulted in an improved rate of overall survival (80.5%), as compared with therapeutic dissection (67.5%) in N0 neck [15]. All patients achieved satisfactory cosmetic outcomes, as SOHND avoids excessive dissection of non-involved anatomical structures. No patients required major reconstructive procedures, further contributing to improved post-operative quality of life.

Despite temporary speech difficulties in one patient, recovery was achieved with simple speech therapy. Only one patient developed mucocele, which eventually resolved without intervention. No severe post-operative complications, such as hemorrhage, respiratory distress, or wound infections, were reported.

With no disease progression, no patients required radiotherapy or chemotherapy. All five patients had favorable outcomes with no recurrence, minimal complications, and maintained quality of life throughout follow-up.

CONCLUSION

SOHND effectively manages early-stage oral cavity SCC in clinically N0 patients with functional preservation,

and reduced morbidity. Although limited by small sample size and short follow-up, this series supports the role of elective SOHND as an oncologically sound and function-preserving approach in carefully selected early-stage OSCC patients. Further large-scale studies with extended follow-up and advanced imaging are needed.

ACKNOWLEDGMENTS

I would like to acknowledge Dr.Agalyah Kalyan Kumar for her assistance in Editing manuscript.

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Funding: Nil; Conflicts of interest: Nil.

How to cite this article: Periyasamy GP, Christopher P, Gopi G, Arafat Y, Afradh M. Supraomohyoid neck dissection in early carcinoma of oral cavity with clinically N0 neck: A case series. Indian J Case Reports. 2026; 12(3):136-140.