2025

1. Single-cell sequencing reveals tumor microenvironment features associated with the response to neoadjuvant immunochemotherapy in oral squamous cell carcinoma

PMID: 40105941 | Cancer Immunol Immunother | 2025 Mar

Objectives: In recent years, immune checkpoint inhibitors have shown promise as neoadjuvant therapies in the treatment of locally advanced oral squamous cell carcinoma (OSCC). However, the factors affecting the tumor response to immune checkpoint inhibitors (ICIs) remain unclear. This study aimed to analyze the impact of neoadjuvant chemoimmunotherapy (NACI) on the tumor microenvironment of OSCC via single-cell RNA sequencing, with the goal of optimizing treatment strategies.

Methods: We analyzed biopsy, primary tumor, matched metastatic lymph node, and normal lymph node samples from four patients with OSCC receiving two cycles of tislelizumab (200 mg), albumin-bound paclitaxel (260 mg/m²), and cisplatin (60-75 mg/m²), with 3-week intervals between each cycle.

Results: We identified two major tumor cell subpopulations (C9 and C11), and patients with high expression of C11 subgroup-specific genes had a lower survival rate. FOXP3+ CD4 eTreg cells were found to potentially suppress the immune response. We found that NACI enhances antitumor immunity by promoting the proliferation of granzyme-expressing CD8+ T effector cells while simultaneously diminishing the effect of CD4+ T cells on Treg-mediated immune suppression. The CCL19+ fibroblastic reticular cell (FRC) subgroup was significantly associated with the efficacy of NACI in patients with OSCC.

Conclusion: We explored the immune landscape of primary OSCC tumors and metastatic lymph nodes in relation to clinical response to NACI. Our findings offer valuable insights into patient treatment responses and highlight potential new therapeutic targets for the future management of OSCC.

2. Neoadjuvant chemoimmunotherapy brings superior quality of life of patients with locally advanced oral or oropharyngeal cancer: A propensity score-matched analysis

PMID: 40015212 | Oral Oncol | 2025 Mar

Background: The outcomes and quality of life of patients with locally advanced oral or oropharyngeal squamous cell carcinoma (LAOOPSCC) following upfront surgery (US) are suboptimal. We aimed to investigate the antitumor efficacy and quality-of-life benefits of neoadjuvant chemoimmunotherapy (NACI) and compare them with those of US for LAOOPSCC.

Methods: A total of 570 patients with OOPSCC who underwent surgical treatment between January 2021 and January 2023 were initially reviewed and we obtained 51 unbiased patients in each of the NACI and US groups through propensity score matching.

Results: In the NACI group, the major pathological response rate was 58.8% (30/51), and the objective response rate was 66.7% (34/51). Patients experienced a shorter operative time ($p = 0.001$) and a reduced length of hospitalization post-surgery ($p = 0.041$), along with less intraoperative blood loss ($p < 0.001$) and fewer free flap reconstructions ($p < 0.001$). Those in the NACI group had significantly better postoperative quality of life.

Conclusion: The findings demonstrate the safety and feasibility of NACI and the de-escalation surgery after NACI is worth promoting to improve patient postoperative quality of life.

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3. Patterns of lymph node metastasis and treatment outcomes of parotid gland malignancies

PMID: 39987446 | BMC Oral Health | 2025 Feb

Background: This study aimed to characterize the pattern of cervical lymph node spread and evaluate prognostic factors and outcomes of surgery and postoperative adjuvant therapy in primary parotid carcinoma (PPC).

Methods: We retrospectively enrolled 136 patients with PPC. The primary outcomes were disease-free survival (DFS) and overall survival (OS).

Results: Pathology-confirmed lymph node metastasis was detected in 60.0% and 84.1% of the patients with cT1-2 and cT3-4 tumors, respectively. The occult metastasis rate in cN0 was 55.2%. Level II metastasis was most common (93.2%), followed by level I (49.3%). One- and five-year OS were 86.0% and 49.3%, respectively.

Conclusion: Histological high grade and advanced T classification were associated with occult lymph node metastasis. Postoperative radiotherapy conferred significant survival benefits in PPC.

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4. Integrated peripheral blood multi-omics profiling identifies immune signatures predictive of neoadjuvant PD-1 blockade efficacy in head and neck squamous cell carcinoma

PMID: 40544277 | J Transl Med | 2025 Jun

Background: Neoadjuvant PD-1 inhibitor therapy has shown promise in locally advanced head and neck squamous cell carcinoma (HNSCC), but only a subset of patients achieves major pathological responses. The aim of this study is to develop a predictive model for neoadjuvant PD-1 therapy response in HNSCC patients using exclusively liquid biopsy approaches.

Methods: In a prospective trial involving 50 HNSCC patients treated with neoadjuvant tislelizumab plus chemotherapy, peripheral blood samples were collected pre- and post-treatment. Immune cell subsets were analyzed by mass cytometry (CyTOF).

Results: A multimodal predictive model incorporating CD8+T cell subsets (c03, c17) and plasma biomarkers (IL-5, MMP7) demonstrated superior predictive accuracy (AUC = 0.9219).

Conclusions: Integrated peripheral immune profiling enables robust, noninvasive prediction of neoadjuvant PD-1 blockade efficacy in HNSCC.

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5. Correlation between maxillary defect and facial asymmetry

PMID: 39870547 | Int J Oral Maxillofac Surg | 2025 Jul

The aim of this study was to evaluate the correlation between maxillary defects and facial asymmetry, and to establish categories for visual perception of facial asymmetry. The facial data of 47 patients who underwent maxillary resection due to tumors were captured using stereophotogrammetry. Facial asymmetry was classified into three grades (I-III) based on visual perception. Maxillary defects significantly affect the midface soft tissue symmetry. Reconstruction should focus on sufficient soft tissue support in the zygomatic, buccal, suborbital, and superolabial areas. For grade III asymmetry, reconstruction is essential.

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6. Reconstructing defects following radical parotidectomy using superficial circumflex Iliac perforator flaps

PMID: 40050935 | BMC Oral Health | 2025 Mar

Background: The restoration of tissue defects following radical parotidectomy poses significant challenges. The superficial circumflex iliac perforator (SCIP) flap presents several advantages, including its adjustable volume and the ability to conceal scarring.

Results: The study included 10 patients with a median age of 45.5 years. All flaps survived without radiation-related recipient complications or donor site complications.

Conclusion: The use of SCIP flaps has been demonstrated to be a viable and safe option for the reconstruction of defects resulting from radical parotidectomy.

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7. Use of Superficial Temporal Vessels in Reconstructive Oral and Maxillofacial Surgery With Vascularized Free Flaps Among "Frozen Neck" Patients

PMID: 41255777 | Laryngoscope Investig Otolaryngol | 2025 Nov

Background: This study aimed to evaluate the feasibility of using superficial temporal vessels as recipient vessels for vascularized free flap reconstruction in "frozen neck" patients following radiotherapy for head and neck cancer.

Results: Between February 2022 and November 2024, 16 patients underwent vascularized free flap reconstruction. All patients attained optimal surgical outcomes with all flaps survived.

Conclusion: Superficial temporal vessels offer a safe, reliable approach for vascularized free flap reconstruction in challenging "frozen neck" cases.

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8. Reconstruction of lower lip defects with chimeric nasolabial flap with buccal artery myomucosal flap

PMID: 39855302 | J Stomatol Oral Maxillofac Surg | 2025 Jun

Purpose: This study aimed to evaluate a chimeric flap comprising a nasolabial flap and a buccal artery myomucosal flap used to reconstruct a large defect of the lower lip.

Results: Seven patients with lower lip carcinomas underwent radical resection and reconstruction. The flap survived without complications in 6 patients. All patients were able to intake oral diet in a public setting.

Conclusions: The chimeric flap offers a method for reconstructing near-total and total defects of the lower lip.

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9. Role of 18F-FDG PET/CT radiomics in predicting lymph node metastasis and prognosis in oral squamous cell carcinoma

PMID: 41478255 | Radiography (Lond) | 2025 Dec

Introduction: This study aimed to develop and validate 18F-FDG PET/CT radiomics-based models for predicting cervical lymph node metastasis (LNM) and prognosis in patients with oral squamous cell carcinoma (OSCC).

Results: The LNM diagnostic model achieved an AUC of 0.856 and an accuracy of 81.5%, outperforming conventional visual PET/CT assessment (accuracy = 74.6%).

Conclusion: PET/CT radiomics significantly improved the diagnostic accuracy for cervical LNM and possessed the potential as a supplementary component for the TNM staging system.

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10. Deep learning-based auto-segmentation model for clinical target volume delineation in brachytherapy after parotid cancer surgery

PMID: 41048621 | J Contemp Brachytherapy | 2025 Aug

Purpose: This study aimed to develop and evaluate a deep learning-based model for auto-segmentation of the CTVs in postoperative adjuvant brachytherapy for patients with parotid gland cancer.

Results: The deep learning model generated initial CTV contours in 9.4 seconds. Subsequent expert review required an average of 11.9 minutes, substantially shorter than the 46.7 minutes needed for fully manual delineation.

Conclusions: Automatic contouring with physician review enabled high-accuracy and rapid CTV generation, reducing the overall delineation workload by more than 30 minutes.

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11. Neoadjuvant tislelizumab plus chemotherapy in locally advanced oral and oropharyngeal squamous cell carcinoma: A single-arm phase II clinical trial

PMID: 41352160 | Oral Oncol | 2026 Jan

Background: This study aimed to evaluate the antitumor effect and safety of neoadjuvant chemotherapy plus tislelizumab for the treatment of resectable locally advanced oral or oropharyngeal squamous cell carcinoma (LAOOPSCC).

Results: A total of 82 patients completed two cycles of neoadjuvant therapy. An objective response rate of 67.9% and an MPR rate of 60.3% were achieved, with 34.2% achieving a pathological complete response. The two-year overall survival rate was 84.4%.

Conclusions: Neoadjuvant tislelizumab plus chemotherapy for LAOOPSCC achieved a high pathological response rate and favorable survival metrics with an acceptable safety profile.

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12. Is the use of intraoperative vasopressors associated with flap failure in head and neck free tissue transfer surgery?

PMID: 40914291 | J Stomatol Oral Maxillofac Surg | 2025 Sep

Background: The use of vasopressors to treat intraoperative hypotension is controversial. The purpose of this prospective cohort study is to evaluate the impact of intraoperative vasopressors on the incidence of flap necrosis.

Results: A total of 239 participants were enrolled. Although vasopressor use was not significantly associated with flap necrosis, operation duration and flap ischemia duration were significant factors.

Conclusions: Use of intraoperative vasopressors during free flap transfer surgery of the head and neck was not associated with early flap failure.

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13. Magnetic resonance neurography: Preoperative assessment of facial nerve invasion in malignant parotid gland tumors

PMID: 40220868 | J Stomatol Oral Maxillofac Surg | 2025 Oct

Background: Facial nerve invasion (FNI) in parotid gland malignancies significantly impacts treatment outcomes. Accurate preoperative assessment of FNI is crucial for surgical planning and tumor staging.

Results: The display rates of the main trunk of the intraparotid facial nerve were 100%. Twenty-three patients (82.1%) matched the surgical findings.

Conclusions: MRN can provide valuable information for predicting FNI in parotid gland malignancies, thereby improving tumor staging and aiding treatment decision-making.

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14. Progressive functional training in patients who underwent jaw defect reconstruction using vascularized iliac flaps: A randomized controlled trial

PMID: 39754999 | Oral Oncol | 2025 Feb

Objective: This trial investigated the effects of progressive functional training on hip mobility, lower-limb stability, quality of life, and hip complications in patients who have undergone jaw defect reconstruction using vascularized iliac flaps.

Results: The donor area function and quality of life of the patients in the training group were significantly improved at 1, 3, 6, and 12 months after surgery. The incidence rates of gait disturbance were significantly lower in the training group.

Conclusion: Progressive functional training can accelerate the restoration of hip function and stability of lower-limb movement, alleviate gait disorders, relieve pain, and improve patients' quality of life.