DOI: 10.7860/JCDR/2026/84547.23515

Oncology Section

Clinical Image of Ulcerated Defect on Left Cheek with Orocutaneous Fistula in a Patient with Recurrent Oral Cancer

RAM PUKAR BHARAT[1], VIJAY JEYACHANDRAN[2], YOGESH DAGAR[3], AMOL SHANKAR DONGRE[4]

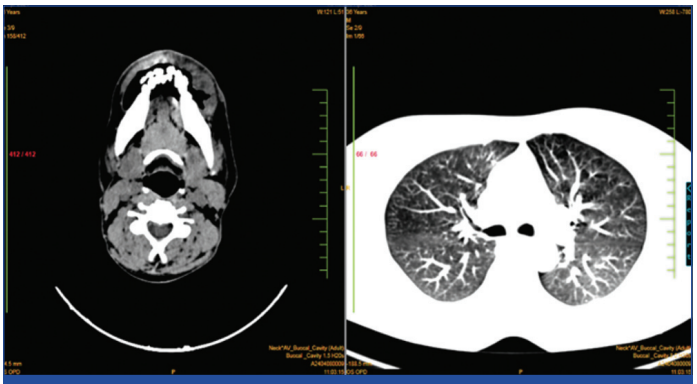
Keywords: Metronomic chemotherapy, Oral squamous cell carcinoma, Orocutaneous fistula, Pectoralis major myocutaneous flap, Recurrent cancer, Wound management

A 37-year-old male, a chronic gutkha chewer, presented with a non-healing ulcer measuring 3×3 cm in the left lower gingivobuccal sulcus [Table/Fig-1a,b]. He reported sticky, ropy saliva and increased salivation for one month, along with limited mouth opening of 15 mm and difficulty in chewing for four months. The lesion was initially painless but later became associated with severe pain on the left side of the face. There was no history of dysphagia or oral burning. Intraoral examination revealed a 3×3 cm ulceroproliferative growth arising from the left lower gingivobuccal sulcus, extending from teeth 33 to 37 [Table/Fig-2]. The tongue, palate, uvula and floor of mouth were uninvolved. Incisional biopsy confirmed moderately differentiated squamous cell carcinoma. Contrast-Enhanced Computed Tomography (CECT) of the face, neck, and thorax demonstrated a 3×3 cm mass arising from the left buccal mucosa with invasion of the masticator space and a 1×2 cm ipsilateral level IB lymph node, without pulmonary metastasis [Table/Fig-3]. The patient underwent wide local excision, segmental mandibulectomy, maxillary alveolectomy and left-sided type II modified radical neck dissection. Reconstruction of the composite intraoral and cheek defect was performed using a Pectoralis Major Myocutaneous (PMMC) flap. The PMMC flap was chosen because it provides a reliable, well-vascularised pedicle flap with adequate soft-tissue bulk for intraoral and cheek coverage, while avoiding the need for microvascular anastomosis and reducing operative time an important consideration in our resource-limited setting.

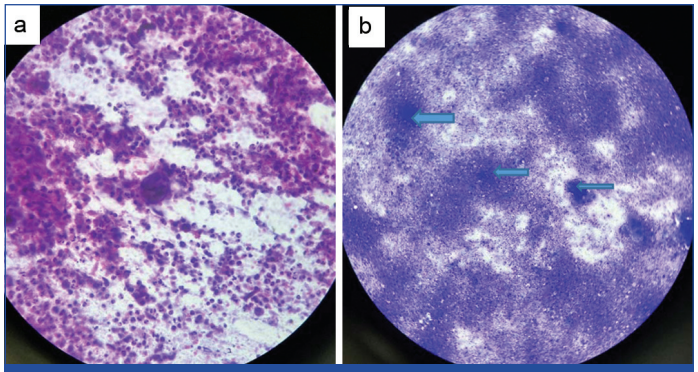
Histopathology confirmed moderately differentiated squamous cell carcinoma measuring 3×1.5×1.5 cm, with a depth of invasion of 7 mm. Lymphovascular and perineural invasion were absent, and all surgical margins were free of tumour. One of 15 cervical lymph nodes showed metastasis with extranodal extension. The disease was staged as pT2N3bM0 (Stage IVA). Adjuvant chemoradiotherapy was administered to a total dose of 60 Gy in 30 fractions over six weeks, concurrent with weekly cisplatin at 40 mg/m^2 (total of five cycles, 60 mg per cycle). At six-month follow-up, the patient was asymptomatic, with no clinical or radiological evidence of residual or recurrent disease, and was tolerating oral intake well. Subsequently, a 2×1 cm solid-cystic swelling developed over the left cheek at the previous surgical site. Cytological evaluation of the swelling revealed well-differentiated squamous cell carcinoma with cystic degeneration [Table/Fig-4a,b].

[Table/Fig-1]: a) Clinical photograph (frontal view) showing a 3×3 cm non-healing ulcer in the left lower gingivobuccal sulcus with indurated margins and surrounding mucosal erythema; (b) intraoral oblique view demonstrating an ulceroproliferative lesion extending from teeth 33 to 37, with irregular surface and early infiltration into adjacent gingivobuccal mucosa.

[Table/Fig-2]: Intraoral photograph showing a 3×3 cm ulceroproliferative lesion in the left lower gingivobuccal sulcus, extending from teeth 33 to 37, with indurated margins involving the left angle of the mouth and no involvement of the tongue, palate or floor of the mouth.

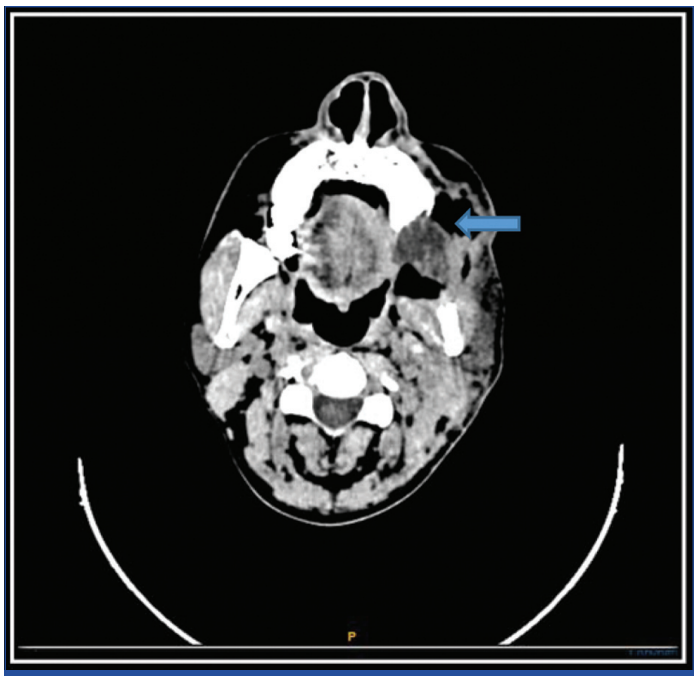


[Table/Fig-3]: Contrast-Enhanced Computed Tomography (CECT) of the neck and thorax shows a 3.7×1.6×3 cm heterogeneous, enhancing soft tissue mass arises from left buccal–buccinators complex with calcific foci; left level IB/II lymph nodes (largest measuring 1.2×0.9 cm); no lung or mediastinal metastasis.



[Table/Fig-4]: a) Cytology smear (Romanowsky stain, 40×) showing squamous cells in small sheets, micropearls, and clusters with hyperchromatic, pleomorphic nuclei and nuclear spindling. The background shows squamous cells with pyknotic nuclei, macrophages, cell debris, neutrophils, crenated red blood cells and granular necrotic material, suggestive of recurrent squamous cell carcinoma with cystic degeneration; (b) higher-power view of cytology highlighting clusters of atypical squamous cells with pleomorphic, hyperchromatic nuclei and keratinisation, consistent with well-differentiated squamous cell carcinoma.

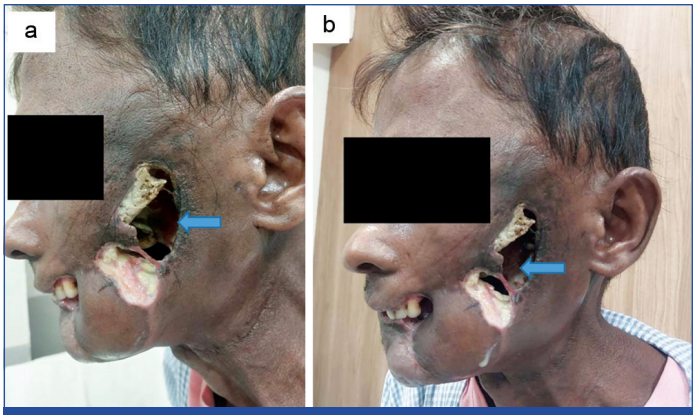
Repeat contrast-enhanced computed tomography (CECT) showed a 6×5.5×6 cm lesion with mandibular erosion and involvement of the lateral wall of the maxillary sinus, pterygoid muscles, and skull base, along with osteolytic changes of the zygomatic arch [Table/Fig-5]. No pulmonary metastasis was detected.



[Table/Fig-5]: Contrast-enhanced CT scan showing a large recurrent lesion with mandibular erosion, involvement of the lateral maxillary sinus wall, pterygoid muscles, and skull base, and osteolytic changes of the zygomatic arch.

The multidisciplinary tumour board considered the recurrent lesion to be unresectable. The patient was started on oral metronomic chemotherapy. He received oral methotrexate 10 mg once weekly, celecoxib 200 mg twice daily, and gefitinib 250 mg once daily as part of the metronomic regimen. After approximately two months of therapy, he developed a large ulcerated defect on the left cheek with an Orocutaneous Fistula (OCF). The defect extended from the region lateral to the nose towards the preauricular area, with irregular necrotic margins, exposure of underlying bone, and communication with the oral cavity. Intraorally, there was an opening near the upper alveolus with exposure of the maxillary bone, infratemporal fossa, and pterygoid region. The surrounding skin was hyperpigmented and indurated, with scarring suggestive of previous surgery and radiotherapy. Teeth adjacent to the lesion were exposed, and the adjacent oral mucosa was ulcerated [Table/Fig-6a,b].

Overall, the findings were consistent with recurrent oral squamous cell carcinoma presenting as a large ulcerated cheek defect



[Table/Fig-6]: (a) Clinical photograph of the left cheek demonstrating a large ulcerated defect with necrotic margins and exposure of underlying structures, extending from the area lateral to the nose towards the preauricular region, consistent with an Orocutaneous Fistula (OCF); (b) oblique view showing the OCF with communication between the cheek defect and the oral cavity, and exposure of the maxillary alveolus, infratemporal fossa and pterygoid region.

with OCF. Given the extent of disease and limited reconstructive options, further surgical intervention was not feasible. The patient was continued on chemotherapy and intensive wound care. Despite ongoing metronomic chemotherapy and palliative wound care, the disease progressed locally. The focus of care shifted to best supportive care, with emphasis on pain control, odour management, and nutritional support. Pain and symptom control were optimised with oral morphine 10 mg every 4 hours, along with neuropathic adjuvants (gabapentin/nortriptyline 100/10 mg) administered three times daily, supported by non-pharmacological strategies, breakthrough dosing, and frequent reassessment to maintain consistent comfort. Wound and odour management focused on gentle cleansing, non-adherent absorbent dressings, and topical or systemic metronidazole, along with careful protection of the surrounding skin, moisture regulation, and avoidance of traumatic manipulation to limit pain and bleeding. Infection and bleeding were managed with targeted antibiotics for superadded infection, haemostatic dressings, and tranexamic acid to support local haemostasis. Nutritional and oral care were optimised through a texture-modified, high-calorie diet with supplements, adequate hydration, and meticulous oral hygiene to improve intake and reduce discomfort. Psychosocial and end-of-life support included counselling, attention to body-image concerns, caregiver support, and advance care planning to preserve dignity and guide overall care goals. The patient died due to progressive disease ten months after fistula formation.

DISCUSSION

Orocutaneous fistula (OCF) is a challenging complication following surgery and reconstruction for oral squamous cell carcinoma. Fang Q et al., reported that OCF formation is relatively common after free-flap reconstruction, with cachexia, primary tumours of the oral cavity, T4 stage, and surgical site infection emerging as significant risk factors [1]. Despite prolonged healing times, most fistulas eventually resolve with conventional wound care [1]. Tassone P et al., estimated the pooled incidence of OCF after oral cavity resection and reconstruction to be approximately 7.7%, with a trend towards higher risk in previously irradiated patients and no clear difference between flap types or performance of mandibulectomy [2].

Choi BH et al., highlighted that OCF in the setting of prior radiotherapy can lead to recurrent infections, dysphagia, prolonged exposure of major vessels, and, in extreme cases, carotid blowout, often necessitating complex reconstructive procedures [3]. Girkar F et al., identified low preoperative haemoglobin, poor nutritional status advanced T stage, and wound infection as factors predisposing to fistula formation after oral cancer surgery, and emphasised the role of early recognition and aggressive management [4]. In contrast to many reports in which OCF

occurs in the early postoperative period, our patient developed a large ulcerated cheek defect with OCF in this case occurred in the setting of recurrent, unresectable disease following radical surgery, adjuvant chemoradiotherapy and subsequent metronomic chemotherapy. This scenario exemplifies the complex interplay between recurrent tumour, previously treated tissues, impaired vascularity, and poor wound-healing capacity. Surgical reconstruction was not feasible, underscoring that not all fistulas are amenable to aggressive reconstructive strategies and that palliative wound care may be the only realistic option in advanced disease [5,6].

From a preventive standpoint, measures to reduce the risk of OCF include optimisation of nutrition and haemoglobin; strict control of diabetes and other comorbidities; tension-free, multilayer closure; preservation of vascular pedicles; avoidance of excessive electrocautery; careful handling of irradiated tissues; effective drainage and early treatment of wound infection; and minimisation of salivary leakage into the wound [7]. In patients undergoing reconstruction with pedicled or free flaps, ensuring adequate flap perfusion and avoiding excessive pressure from dressings or hardware are crucial to minimise venous congestion, thrombosis and flap failure [8]. Quality of Life (QoL) is a key consideration in such advanced cases. Large cheek defects with OCF can cause severe pain, foul odour, drooling, difficulty eating and speaking, social isolation, and significant body image disturbance, consistent with broader QoL data in head and neck cancer and malignant cutaneous wounds [9]. Even when curative options are exhausted, meticulous wound care, appropriate dressings, odour control, adequate analgesia, nutritional support (including enteral feeding where indicated) and psychosocial counselling help preserve dignity and comfort. Early integration of palliative care services facilitates holistic management of symptoms and provides support to both the patient and family.

This case highlights that, in recurrent oral squamous cell carcinoma with extensive local destruction, OCF may represent not only a surgical complication but also a marker of advanced, incurable disease. Recognition of this transition is important to shift the therapeutic goal from cure to palliation, focusing on symptom relief and quality of life.

REFERENCES

[1] Fang Q, Yuan J, Du W, Dai L, Zhang X, Luo R. Orocutaneous fistula formation in free flap reconstruction for oral squamous cell carcinoma. Front Oncol. 2022;12:887118.
[2] Tassone P, Galloway T, Dooley L, ZitschIII R. Orocutaneous fistula after oral cavity resection and reconstruction: Systematic review and meta-analysis. Ann Otol Rhinol Laryngol. 2022;131(8):880-91.
[3] Choi BH, Park SO, Ahn HC. Reconstructive methods to resolve intractable fistulas that develop after radiation therapy in patients with head and neck cancer. Arch Craniofac Surg. 2021;22(5):247-53.
[4] Girkar F, Thiagarajan S, Malik A, Sawhney S, Deshmukh A, Chaukar D, et al. Factors predisposing to the development of orocutaneous fistula following surgery for oral cancer: Experience from a tertiary cancer center. Head & Neck. 2019;41(12):4121-27.
[5] Sezgin D, Geraghty J, Graham T, Blomberg K, Charnley K, Dobbs S, et al. Defining palliative wound care: A scoping review by European Association for Palliative Care wound care taskforce. J Tissue Viability. 2023;32(4):627-34.
[6] Rando T. A case series on improving the management of malignant cutaneous wounds through silicone SAP dressings. Wounds Int.. 2024;15(3):50-58.
[7] Locatello LG, Licci G, Maggiore G, Gallo O. Non-Surgical Strategies for Assisting Closure of Pharyngocutaneous Fistula after Total Laryngectomy: A Systematic Review of the Literature. J Clin Med. 2021;11(1):100. doi: 10.3390/jcm11010100.
[8] Lim BJ, Shin JY, Roh S-G, Lee N-H, Chung YK. Clinical analysis of factors affecting the failure of free flaps in head and neck reconstruction. Arch Craniofac Surg. 2023;24(4):159-66.
[9] Mili MK, Sarmah M, Goswami S, Saikia A. A study of quality of life of head and neck cancer patients attending ENT out-patient department of tertiary care centre in upper Assam region. Int J Otorhinolaryngol Head Neck Surg. 2022;8(6):511-16.

PARTICULARS OF CONTRIBUTORS:
1. Senior Resident, Department of Medical Oncology, Jawaharlal Nehru Medical College, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Wardha, Maharashtra, India.
2. Senior Resident, Department of Nephrology, Jawaharlal Nehru Medical College, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Wardha, Maharashtra, India.
3. Junior Resident, Department of Pathology, Jawaharlal Nehru Medical College, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Wardha, Maharashtra, India.
4. Professor, Department of Medical Oncology, Jawaharlal Nehru Medical College, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Wardha, Maharashtra, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Ram Pukar Bharat,
Senior Resident, Department of Medical Oncology, SGMCH, AVBRH, Sawangi, Wardha-442001, Maharashtra, India.
E-mail: rampukarbharat@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Oct 21, 2025
- Manual Googling: Jan 31, 2026
- iThenticate Software: Feb 03, 2026 (1%)

ETYMOLOGY: Author Origin

EMENDATIONS: 5

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Sep 24, 2025**
Date of Peer Review: **Dec 04, 2025**
Date of Acceptance: **Feb 05, 2026**
Date of Publishing: **Jun 01, 2026**