

Perioperative Nursing Care of a Case of Facial Dermatofibrosarcoma Protuberans with Free Flap Reconstruction

Jialing Huang, Xuemei Fang*

Department of Head and Neck Surgery, Sun Yat-Sen University Cancer Center, Guangzhou, China

Email: *fangxm@sysucc.org.cn

How to cite this paper: Huang, J.L. and Fang, X.M. (2026) Perioperative Nursing Care of a Case of Facial Dermatofibrosarcoma Protuberans with Free Flap Reconstruction. *Journal of Cancer Therapy*, 17, 500-511.

<https://doi.org/10.4236/jct.2026.1710041>

Received: September 10, 2026

Accepted: October 11, 2026

Published: October 14, 2026

Copyright © 2026 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

This article summarizes the nursing experience of one patient with facial dermatofibrosarcoma protuberans who underwent free flap reconstruction. Key nursing measures included close monitoring and care of the free flap's blood supply, development of an individualized nutrition plan, prevention of potential complications, and comprehensive perioperative psychological support based on the 5E care model. In addition, follow-up care was provided through an "Internet + continuous nursing" approach. After meticulous treatment and personalized nursing care, the patient was hospitalized for 10 days. The flap survived well with no complications such as vascular crisis, infection, or deep vein thrombosis. The patient was discharged with a nasogastric tube. Two months later, during follow-up, the nasogastric tube was removed, and the patient resumed normal oral intake with weight gain.

Keywords

Dermatofibrosarcoma Protuberans, Free Flap Reconstruction, Individualized Nursing Care

1. Introduction

Dermatofibrosarcoma Protuberans (DFSP) is a relatively uncommon low-grade malignant soft tissue tumor of dermal origin in clinical practice [1]. Epidemiological data indicate that DFSP accounts for approximately 1% - 2% of all soft tissue sarcomas, with an annual incidence of 0.8 - 4.1 per million population [2]. The trunk is the most common site (50%), while the head and neck region is less frequently affected (approximately 10% - 15%). Moreover, DFSP arising in the head and neck exhibits a notably high recurrence rate, reaching 50% - 75% [3]. Defects

in the oral and maxillofacial region can compromise facial aesthetics; in severe cases, they may result in facial deformity and impair mastication, speech, and respiration, thereby affecting patients' daily life and mental health [4]. The use of perforator flaps in oral-maxillofacial and head-and-neck reconstruction has significantly improved functional and aesthetic outcomes, with the anterolateral thigh (ALT) free flap being the most widely applied option [5]. Patients undergoing free-flap reconstruction for oral-maxillofacial tumors typically require extensive postoperative nursing care to ensure flap survival. Prolonged immobilization after surgery can lead to serious complications, including delayed functional recovery, deep-vein thrombosis, and pulmonary embolism [6]. The high recurrence rate of dermatofibrosarcoma protuberans (DFSP) in the head and neck region imposes significant physical and psychological burdens on patients and their families. In the management of DFSP, perioperative nursing care remains one of the major challenges, as it is critical for ensuring free flap survival, preventing postoperative complications, and supporting patients' psychological well-being. On May 25, 2025, our department admitted a patient with a recurrent large facial dermatofibrosarcoma protuberans. The patient underwent wide excision of the right facial cutaneous sarcoma combined with reconstruction using a left anterolateral thigh free flap. Based on the patient's clinical characteristics, we performed a comprehensive nursing assessment and implemented individualized nursing interventions, which led to favorable outcomes. The patient was discharged in good condition on June 3. This case is reported below.

2. Case Information

The patient was a 58-year-old male who presented with a recurrent dermatofibrosarcoma protuberans (DFSP) of the right facial skin. He had undergone two previous surgical resections, with the most recent surgery performed 4 years earlier. The patient first underwent surgical excision of a right facial mass at a local hospital in 2017, with postoperative pathology confirming dermatofibrosarcoma protuberans. In 2021, the tumor recurred, and he underwent a second surgical resection. One year later, the mass recurred again. Due to the lack of standardized treatment, the lesion gradually enlarged, with significant growth noted recently. He was subsequently referred to our department for further management. Physical examination revealed a large mass on the right maxillofacial region, involving the right cheek and facial skin, measuring approximately 25 cm × 10 cm. The mass exhibited an exophytic growth pattern with surface ulceration but no obvious tenderness. Upon admission, the patient avoided direct eye contact due to the large facial lesion. He covered his face with a scarf, leaving only his eyes exposed, spoke with his head lowered, and was generally quiet. On inquiry, he expressed fear of frightening others with the appearance of the tumor. General condition: height 170 cm, weight 50 kg, body mass index (BMI) 17.0. The patient denied any history of chronic diseases such as hypertension or diabetes. Magnetic resonance imaging (MRI) of the maxillofacial region (plain and contrast-enhanced) showed an irreg-

ular soft tissue lesion in the right maxillofacial area with ill-defined borders, measuring approximately 72 mm × 69 mm. Multiple tortuous and dilated vascular structures were observed within the lesion, which invaded the adjacent muscles of the right maxillofacial region and perioral area. The discrepancy between the clinical measurement (25 cm × 10 cm) and the MRI measurement (72 mm × 69 mm) was mainly due to differences in measurement methods: the former represented the external exophytic mass on physical examination, while the latter reflected the deep infiltrative component observed on imaging. Preoperative laboratory findings were as follows: hemoglobin 92 g/L, white blood cell count $10.14 \times 10^9/L$, C-reactive protein (CRP) 103.74 g/L, and albumin 40.1 g/L.

After completing the necessary examinations, on 26 May the patient underwent “wide local excision of the right facial skin sarcoma combined with left anterolateral thigh free flap reconstruction” under general anesthesia. Intraoperative exploration confirmed that the actual skin and soft-tissue defect after resection of the tumor with adequate margins measured approximately 10 cm × 10 cm, with surface ulceration and bleeding. The involved skin extended superiorly to 2 cm below the infraorbital rim, medially involving the upper lip, oral commissure, and buccal mucosa, inferiorly to 2 cm above the superior border of the mandibular ramus, and laterally to the level of the masseter. A 1.0 cm margin was taken beyond the tumor boundaries; the right facial skin was incised and the cheek was resected in continuity, achieving wide excision of the right facial sarcoma. A perforator was identified between the vastus lateralis and rectus femoris muscles; the descending branch of the lateral circumflex femoral vessels was located within the vastus lateralis. Centered on this pedicle, a 14 cm × 9 cm flap was designed. The flap was transferred to the right facial defect, and the lateral circumflex femoral artery and vein were anastomosed end-to-end to the superior thyroid artery and vein. The flap margins showed good bleeding and venous filling.

The surgery lasted approximately 5 hours and was completed smoothly. Intraoperative blood loss was about 800 mL, and the patient received 4 units of red blood cells and 400 mL of plasma. Postoperative pathology revealed diffuse spindle cell proliferation in the dermis and subcutaneous tissue, arranged in fascicular or storiform patterns, with 8 mitoses per 10 high-power fields. Stromal myxoid degeneration and vascular proliferation were observed. Based on the clinical history, immunohistochemistry, and molecular findings, the diagnosis was consistent with dermatofibrosarcoma protuberans (DFSP). The tumor involved striated muscle tissue, with no definitive evidence of vascular invasion or perineural invasion. Tumor cells were present at the peripheral margins, while the deep margin showed abundant neutrophil infiltration with abscess formation but no definite tumor involvement. Immunohistochemistry results: CD34 (+), S-100 (focal) (–), Desmin (–), EMA (–), SMA (–), Ki-67 (approximately 35% +). Molecular pathology: COL1A1-PDGFB gene fusion was positive by FISH. After surgery, a nasogastric tube, drainage tube, and urinary catheter were placed, and the patient was transferred back to the ward. According to medical orders, anti-inflammatory

treatment, microcirculation improvement agents, gastric protection, and intravenous nutritional support were administered. Due to the large surgical wound and the need for head immobilization to protect the free flap, the patient was required to remain in bed for three days. His Activities of Daily Living (ADL) score was 25, indicating severe dependency and requiring substantial assistance from others. This situation posed significant physical and psychological challenges for the patient. On May 30, head immobilization was discontinued, and his ADL score improved to 60, indicating moderate dependency. On June 3, the patient was discharged with a nasogastric tube in place, with an ADL score of 80, reflecting mild dependency. Throughout the hospitalization, ward nurses provided individualized nursing care for this patient, including free flap monitoring and care, nutritional intake planning and tracking, preoperative and postoperative psychological interventions, and prevention of potential complications. These measures achieved satisfactory outcomes.

3. Nursing

3.1. Implementation of Multidimensional Prehabilitation Nursing and Preoperative Assessment

3.1.1. Adoption of Primary Nursing and Case Management Model

On the day of admission, after the primary nurse received the patient, key information was shared in the WeChat work group for focused attention. Each nurse in the ward performed their respective duties: the psychological liaison nurse immediately provided psychological intervention; the nutrition specialist liaison nurse developed an individualized nutrition plan; the pressure injury liaison nurse monitored the patient's skin condition; and the primary nurse conducted close observation and documentation of the patient's condition, with timely updates posted in the WeChat group.

3.1.2. The Primary Nurse Completed the Admission Procedures and Introduced the Ward Environment to the Patient and Family Members

Preoperative preparations were carried out according to medical orders, and successful cases of patients who had undergone the same procedure in the ward were shared to enhance the confidence of the patient and family. Educational videos titled "Preoperative Instructions", "Pressure Injury Prevention After Flap Transplantation", and "Ankle Pump Exercises" were played on the ward television to reinforce understanding and help the patient prepare. Family members were also guided to prepare necessary postoperative items, such as lemons, a writing board, and tissues.

3.1.3. Initial Psychological Assessment by the Psychological Liaison Nurse

The psychological liaison nurse conducted the first psychological assessment using medical records, direct communication with the patient and family, and standardized scales. Expert consensus indicates that depression and anxiety are

the most common psychiatric comorbidities in cancer patients [7]. For patients with tumors who develop psychological distress, the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) scales are recommended to evaluate depressive and anxiety symptoms. The Body Image Scale (BIS) was used to assess the patient's perception of self-image over the past week [8]. The patient's scores were PHQ-9: 11 (moderate depression), GAD-7: 12 (moderate anxiety), and BIS: 28 (elevated), all indicating significant psychological burden consistent with his clinical presentation. The primary cause was body-image disturbance due to the visible facial mass, which triggered anticipatory social anxiety and behavioral avoidance, ultimately forming a vicious cycle of depression and anxiety. When the primary nurse first encountered the patient wrapped in a scarf covering his face and learned from the family that he avoided speaking because of the large mass, the psychological liaison nurse was immediately consulted. The liaison nurse escorted the patient and family to a private treatment room, allowed the patient to relax before conducting the interview, and worked to establish initial trust. During the conversation, the patient appeared calm but emotionally flat, with a blank expression and avoidance of eye contact. The nurse encouraged him to express his inner thoughts, listened patiently, validated his feelings, and taught him a simple breathing relaxation technique from mindfulness-based stress reduction, which was appropriate for his current state and helped mildly alleviate his anxiety.

3.2. Postoperative Nursing

3.2.1. Flap Observation and Nursing, with Vigilance for Vascular Crisis

Expert consensus [5] indicates that the first 72 hours postoperatively represent the period of highest risk for vascular crisis in perforator flaps. Tao Xian-yao *et al.* [9] demonstrated that flap color, temperature, degree of swelling, capillary refill time, and progression of ecchymosis are the five key parameters for monitoring flap microcirculation. Accurate documentation of the timing of vascular compromise and the appearance of ecchymosis enables early identification of arterial or venous crisis and improves flap survival rates.

Upon the patient's return to the ward, the right facial flap appeared slightly pale, closely matching the color of the donor thigh skin, with moderate swelling and capillary refill of 1 - 2 seconds. From postoperative day 3 onward, the flap gradually became pinker, swelling slowly subsided, and tissue elasticity remained good.

Specific nursing measures included:

(1) Implementation of the "Flap Circulation Observation Chart" with close monitoring of perfusion. Monitoring methods included infrared thermometry for temperature, cotton-swab compression test for capillary refill, and, when necessary, a 7-gauge needle prick test to assess bleeding. Monitoring frequency was adjusted according to the patient's condition: hourly for the first 24 hours, every 2 hours from 24 - 72 hours, and every 4 - 6 hours thereafter once stability was confirmed.

(2) Positioning and environmental management: During the immobilization period, the head was kept slightly turned to the right or in neutral position to avoid twisting or compression of the vascular pedicle. Room temperature was maintained at 20°C - 22°C to prevent vasospasm.

(3) Circulatory volume management: Effective circulating blood volume was maintained and blood pressure supported. Alprostadil and low-molecular-weight dextran were administered as ordered. Hemostatic agents were avoided unless an emergency arose, to prevent impairment of flap perfusion.

(4) Secure fixation of drainage tubes around the flap to avoid compression of the vascular pedicle.

The patient's free flap remained pink and soft, with rapid capillary refill (<1.5 seconds), good elasticity, and temperature comparable to the contralateral side, indicating excellent microcirculatory perfusion.

3.2.2. Observation and Documentation of Wound Condition to Prevent Infection

Zhou Yang *et al.* [10] reported that wound care is an essential component of post-operative flap nursing. Appropriate dressing selection and meticulous wound cleaning promote healing and reduce complications.

Specific measures included:

(1) On the first postoperative day, the suture line of the facial flap was covered with blood crusts. The wound was cleaned daily with normal saline, followed by disinfection with povidone-iodine to keep the area dry and clean.

(2) Because the flap bridged the facial skin and oral cavity, oral hygiene was suboptimal, with noticeable odor and moderate sputum production occasionally mixed with blood. Thorough oral care and observation of sputum characteristics were therefore critical. During the immobilization period, the oral cavity was wiped twice daily with gauze-wrapped hemostatic forceps. After immobilization was discontinued, an oral irrigator was used for cleaning, with frequency adjusted according to the degree of oral soiling.

(3) Body temperature was monitored and recorded regularly on the temperature chart, while laboratory results (complete blood count and inflammatory markers) were reviewed dynamically.

On postoperative day 1, laboratory results showed a white blood cell count of $13.4 \times 10^9/L$, C-reactive protein (CRP) of 82.7 g/L, and procalcitonin of 0.73 ng/mL. The patient's highest body temperature reached 38.7°C. Given the absence of purulent wound discharge or clear signs of localized infection at the time, the condition was considered a postoperative inflammatory response, with possible infection not excluded. The clinical rationale for antibiotic use was based on fever and elevated inflammatory markers; however, there was no definitive microbiological or localized evidence of infection. Antibiotics were administered as ordered. During hospitalization, the inflammatory markers gradually declined. On the day before discharge, the white blood cell count had decreased to $7.65 \times 10^9/L$, CRP to 37.1 g/L, and procalcitonin to 0.05 ng/mL. The wound remained normal,

oral hygiene had improved, there was no foul odor, and no signs of infection developed.

3.2.3. Monitoring the Patient’s Nutritional Intake and Developing an Individualized Nutrition Plan

Because the surgical wound was located in the oral and maxillofacial region, the large wound surface and flap transplantation resulted in increased intraoperative and postoperative exudation and bleeding, leading to greater nutrient loss. Postoperative tissue repair also significantly increased the demand for nutrients. In addition, the hypermetabolic state associated with malignancy elevates resting energy expenditure [11], making malnutrition more likely. Therefore, close monitoring of nutritional status and timely nutritional supplementation are essential in patients undergoing flap transplantation to reduce the incidence of malnutrition [12].

Upon admission, the primary nurse immediately performed Nutritional Risk Screening 2002 (NRS-2002), yielding a score of 4, indicating nutritional risk. The score remained 5 on the first postoperative day and on the day of discharge, confirming ongoing nutritional risk. The nutrition specialist liaison nurse applied the “five-step ladder” nutritional therapy model and used the body-weight formula method to estimate the patient’s energy and protein targets [13]: 1625 - 1950 kcal/day for energy and 65 - 130 g/day for protein. An individualized nutrition plan was then formulated based on the patient’s specific condition.

Table 1. Personalized postoperative diet plan and actual total energy intake versus target.

Date	Intravenous nutrition intake (kcal)	Actual nasogastric Neng Quansu intake (kcal)	Total intake (kcal)	Actual total energy achievement rate (%)
Postoperative day 1	280	Neng Quansu 4 scoops + 100 ml warm water (at 09:00, 12:00, 16:00, 21:00) ≈ 350 kcal	630	32~38
Postoperative day 2	280	Neng Quansu 5 scoops + 200 ml warm water (at 09:00, 12:00, 16:00, 21:00) ≈ 500 kcal	780	40~48
Postoperative day 3	280	Neng Quansu 6 scoops + 200 ml warm water (at 08:00, 11:00, 15:00, 18:00, 21:00) ≈ 750 kcal	1030	52.8~63.4
Postoperative day 4	280	Neng Quansu 9 scoops + 200 ml warm water (at 08:00, 11:00, 15:00, 18:00, 21:00) ≈ 1000 kcal	1280	65.6~78.8
Postoperative day 5 to discharge	280	Neng Quansu 9 scoops + 200 ml warm water (at 08:00, 10:30, 13:00, 15:30, 18:00, 21:00) ≈ 1200 kcal	1480	75.9~91.1

On the day of admission, the primary nurse and nutrition specialist liaison nurse inquired about the patient’s dietary habits and appetite, informed the attending physician, and the physician prescribed a complete enteral nutrition formula (Neng Quansu) together with intravenous nutritional support. From the

first postoperative day onward, nutrition was provided via nasogastric tube feeding combined with parenteral nutrition, with intravenous support used as a supplement. The dietary regimen was dynamically adjusted according to the patient's postoperative progress. During postoperative days 1 - 3, while the patient remained immobilized and bedridden, gastrointestinal function gradually adapted to nasogastric feeding, and the feeding volume was increased progressively (details shown in **Table 1**).

During hospitalization, the patient's nutritional intake gradually increased. On postoperative day 1, hemoglobin was 76 g/L and albumin was 28.6 g/L. On the day before discharge, hemoglobin had risen to 92 g/L and albumin to 39.2 g/L. The patient's body weight remained stable, and nutritional intake met the target requirements. However, hemoglobin and albumin levels did not show significant improvement compared with the values at admission.

3.2.4. Prevention and Management of Postoperative Complications

Zhu Gaifang *et al.* [14] emphasized that complication prevention is a critical aspect of perioperative nursing for patients undergoing oral-maxillofacial flap reconstruction. Because these procedures involve extensive resection, prolonged operative time, and extended postoperative immobilization in the supine position, pressure injuries and deep-vein thrombosis are common complications [15]-[17]. The patient's preoperative BMI was 17.0 (underweight), the operation lasted approximately 5 hours, and he required strict head immobilization and bed rest for 3 days.

Specific preventive measures included:

(1) Pressure injury prevention: The Waterlow Pressure Ulcer Risk Assessment Scale was used; the score on the day of surgery was 16, indicating high risk. Given the long operative duration, a Mepilex self-adhesive soft silicone foam dressing was applied to the sacral area before the patient was transferred to the operating room to reduce pressure and friction. A hydrogel pad was placed under the sacrum on the hospital bed, and the patient's position was changed every 2 hours using a turning pillow during the immobilization period. Room temperature was kept appropriate, and nutritional intake was maintained to support skin barrier function.

(2) Deep-vein thrombosis prevention: The Caprini thrombosis risk assessment scale was used. The score was 3 (moderate risk) on admission, rose to 7 (high risk) on the first postoperative day, and remained at 5 (high risk) after immobilization was discontinued and at discharge. The patient and family were taught ankle-pump exercises and straight-leg raises preoperatively. Postoperatively, active exercises (ankle pumps and straight-leg raises, 3 times daily, 10 repetitions each) and passive therapy (low-frequency pulsed electrical stimulation, twice daily for 20 minutes) were implemented. Limb movements were performed within the patient's pain-free tolerance. Ambulation was encouraged on postoperative days 5-7. With the collaborative efforts of the medical team, nurses, and patient, no pressure injuries or thromboembolic complications occurred during hospitalization.

3.2.5. Comprehensive Perioperative Psychological Support Based on the 5E Care Model

The 5E nursing model refers to Evaluate, Empathy, Ensure, Enable, and Encourage. This model has been studied and applied in the rehabilitation care of patients with chronic diseases and cancer [18]. The responsible nurse and psychological liaison nurse provided humanistic psychological support to the patient in three phases.

Phase 1 (Preoperative phase): On the day of admission, a trusting relationship was established with the patient to help him accept the medical team. A psychosocial assessment was then conducted. The patient's PHQ-9 score was 11 and GAD-7 score was 12, indicating moderate depression and anxiety. The BIS score was 28, suggesting the presence of body image disturbance. The patient was encouraged to express his inner thoughts, and his emotional needs were actively listened to [19] to help alleviate anxiety. He was also taught breathing techniques, including pursed-lip breathing (2 - 3 times per day, 15 - 20 minutes per session) and diaphragmatic breathing (2 - 3 times per day, 15 - 20 minutes per session).

Phase 2 (Immobilization period): Support was provided to help the patient cope with the most difficult postoperative period. This included alleviating physical discomfort, conducting close monitoring and care of the free flap, wound care, nutritional status monitoring, and prevention of complications. Through frequent ward rounds and communication, family support was mobilized. The patient was guided to practice mindfulness breathing and relaxation techniques, specifically breath control: placing both hands on the chest and abdomen, relaxing the shoulders and arms, inhaling through the nose and exhaling through the mouth, performing three deep, slow breaths, with the final inhalation held for 3 seconds, repeated 3 - 5 times [20].

Phase 3 (Gradual recovery): The patient was encouraged to reintegrate into society. With family support, he was motivated to leave the ward and engage with external stimuli. On the day of discharge, the psychological liaison nurse reassessed his mental status. The patient appeared cheerful, with bright eyes and a slight smile, although he still avoided direct eye contact. His PHQ-9 score was 4 and GAD-7 score was 4, indicating no significant or only minimal symptoms of depression and anxiety. The BIS score had decreased to 15, suggesting that body image concerns persisted but had improved compared with admission.

3.3. Discharge Follow-Up Using "Internet + Continuity of Care"

Relying on the hospital's self-developed "Internet + Full-Cycle Intelligent Management" platform, the patient was incorporated into a systematic management process. Li Yufei *et al.* [21] noted in their review that mobile health (mHealth) can effectively support transitional rehabilitation nursing care for patients with oral cancer. The platform regularly pushed standardized video guidance materials on oral function exercises and shoulder-neck rehabilitation training. These materials were simultaneously sent to the patient or family via a WeChat mini-program at discharge, with a check-in function enabled to monitor training adherence. In ad-

dition, the platform sent SMS reminders to the patient and family for timely return visits, which is particularly important for dermatofibrosarcoma protuberans (DFSP), especially in high-recurrence areas such as the head and neck. At the two-month postoperative follow-up, the patient's voice was clear and fluent. The nasogastric tube had been successfully removed, and oral intake had been resumed with good dietary tolerance. Body weight had increased to 55 kg. Mouth opening was currently limited to approximately one finger width, primarily due to local tissue reconstruction and scar formation following buccal flap repair.

4. Conclusion

Facial dermatofibrosarcoma protuberans (DFSP) treated with free flap reconstruction allows for both complete tumor resection and restoration of the defect. The quality of nursing care directly influences the patient's prognosis. This case suggests that for patients undergoing complex head and neck tumor reconstruction with free flap transfer, establishing a prehabilitation and perioperative management system based on quantitative assessment and multidisciplinary collaboration is of great importance. The combination of the 5E care model and the "Internet + Transitional Nursing" platform was associated with the patient's favorable outcome in this case. However, due to the single-case design, causal relationships cannot be inferred, and the findings cannot be generalized. This report summarizes the nursing experience of a single case with a follow-up period of only 2 months; therefore, long-term oncologic outcomes remain unknown. In addition, the patient's recovery resulted from multiple nursing interventions, surgical treatment, and multidisciplinary collaboration, and cannot be attributed to any single nursing measure. Future studies with larger sample sizes and longer follow-up periods are needed to further validate these findings.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Reilly, D.J., Loo, Y.L., Alexander, W.M., Wilks, D.J., MacGregor, D. and Coombs, C.J. (2022) Diagnostic and Management Considerations in Pediatric Dermatofibrosarcoma Protuberans. *Annals of Plastic Surgery*, **88**, 319-322. <https://doi.org/10.1097/sap.0000000000002970>
- [2] Fiore, M., Miceli, R., Mussi, C., Lo Vullo, S., Mariani, L., Lozza, L., *et al.* (2005) Dermatofibrosarcoma Protuberans Treated at a Single Institution: A Surgical Disease with a High Cure Rate. *Journal of Clinical Oncology*, **23**, 7669-7675. <https://doi.org/10.1200/jco.2005.02.5122>
- [3] Akhtar, A., Khan, A.H., Rashid, M., Eitezaz, F. and Ur Rashid, H. (2020) Resection and Reconstructive Options in the Management of Dermatofibrosarcoma Protuberans of the Head and Neck. *Cureus*, **12**, 416-423. <https://doi.org/10.7759/cureus.9423>
- [4] Guo, J.P. and Wang, X. (2016) Repair of Defects after Oral and Maxillofacial Tumor Resection Using Free Flap Transplantation. *The Practical Journal of Cancer*, **31**, 915-

917. (In Chinese)
- [5] He, Y., Jiang, C.H., Hou, J.S., *et al.* (2020) Expert Consensus on Perforator Flap Reconstruction of Oral, Maxillofacial, and Head and Neck Defects. *China Journal of Oral and Maxillofacial Surgery*, **18**, 385-389. (In Chinese)
- [6] Li, C.J., Bi, X.Q. and Zhu, G.Q. (2023) Prevention and Management of Complications in Free Flap Reconstruction for Oral and Maxillofacial Tumors. *International Journal of Stomatolog*, **50**, 127-137. (In Chinese)
- [7] Pang, Y., Cao, B.W., Qian, Z., *et al.* (2025) Multidisciplinary Diagnosis, Medication, and Rehabilitation Intervention for Psychiatric and Psychological Disorders in Cancer Patients: Expert Consensus from Capital Medical University—Clinical Findings. *Evaluation and Analysis of Drug-Use in Hospitals of China*, **25**, 769-778. (In Chinese)
- [8] Hopwood, P., Fletcher, I., Lee, A. and Al Ghazal, S. (2002) A Body Image Scale for Use with Cancer Patients. *European Journal of Cancer*, **37**, 189-197.
[https://doi.org/10.1016/s0959-8049\(00\)00353-1](https://doi.org/10.1016/s0959-8049(00)00353-1)
- [9] Tao, X.Y., Xue, M.Y., Mi, J.Y., *et al.* (2024) Analysis of Factors Related to Flap Necrosis after 1260 Anterolateral Thigh Free Flap Transplantations. *Chinese Journal of Clinical Anatomy*, **42**, 517-522. (In Chinese)
- [10] Zhou, Y., Chen, M. and Gao, G. (2024) Observation on the Effect of Flap Nursing after Oral Cancer Flap Transplantation. *Chinese Journal of Aesthetic Medicine*, **14**, 95-97. (In Chinese)
- [11] Zhang, H.M., Liu, J.J., Liu, J., *et al.* (2022) Evidence-Based Practice of Nutritional Risk Management in Patients with Oral Cancer. *Journal of Nursing Science*, **37**, 88-91. (In Chinese)
- [12] Chen, X.Y., Li, C.L., Qin, X.J., *et al.* (2023) Trajectory of Nutritional Status Changes and Influencing Factors in Patients with Oral Cancer. *China Journal of Oral and Maxillofacial Surgery*, **21**, 538-547. (In Chinese)
- [13] Chinese Society of Parenteral and Enteral Nutrition (2017) Guidelines for Nutritional Support in Cancer Patients. *Chinese Journal of Surgery*, **55**, 801-829. (In Chinese)
- [14] Zhu, G.F., Chen, C.Y., Jin, L.M., *et al.* (2017) Perioperative Nursing Care of Elderly Patients Undergoing Oral and Maxillofacial Flap Reconstruction. *Henan Medical Research*, **26**, 345-346. (In Chinese)
- [15] Zhang, L.P., Liu, Q.L. and Wang, Y.Y. (2022) Clinical Experience in Preventing Deep Vein Thrombosis of the Lower Limbs after Maxillofacial Tumor Resection with Simultaneous Flap Reconstruction. *Lingnan Modern Clinics in Surgery*, **22**, 404-407. (In Chinese)
- [16] Li, X.Q., Zhang, F.X. and Wang, S.M. (2017) Guidelines for The Diagnosis and Treatment of Deep Vein Thrombosis (3rd Edition). *Chinese Journal of Vascular Surgery (Electronic Version)*, **9**, 250-257. (In Chinese)
- [17] Zheng, J., Yan, Z.F., Liu, G., *et al.* (2024) Clinical Observation of Vacuum Sealing Drainage Combined with Mepilex Dressing in the Treatment of Pressure Ulcers. *Chinese Journal of Aesthetic Medicine*, **33**, 31-34. (In Chinese)
- [18] Yuan, M.J., Li, L., Lai, L., *et al.* (2021) Research Progress on the Application of the 5E Rehabilitation Model in The Rehabilitation of Patients with Chronic Diseases. *Chinese Nursing Research*, **35**, 4038-4042. (In Chinese)
- [19] Xu, P., Yan, R., Zhang, M.M., *et al.* (2025) Latent Profile Analysis of Body Image in Patients with Head and Neck Cancer and Its Influencing Factors. *Chinese Journal of Nursing*, **60**, 215-222. (In Chinese)

- [20] Ma, L.L., Pang, J. and Li, Q. (2025) Effects of Mindfulness Training Combined with Active Cycle of Breathing Technique Training in Patients with Non-Small Cell Lung Cancer Undergoing Chemotherapy. *Chinese Journal of Health Care and Medicine*, **27**, 786-790. (In Chinese)
- [21] Li, Y.F., Liang, Y.J., Wu, M., *et al.* (2023) Application Progress of Mobile Health in Transitional Rehabilitation Nursing for Patients with Oral Cancer. *Chinese Nursing Research*, **37**, 1961-1965. (In Chinese)