

SURGICAL TREATMENT OUTCOMES OF FACIAL BASAL CELL CARCINOMA AT VIET TIEP FRIENDSHIP HOSPITAL

Tran Quang Hung, Ha Xuan Khoi*, Hoang Van Duy,
Bui Ngoc Nam, Duong Thuy Trang, Do Thi Ha

ABSTRACT

Objective: To evaluate the treatment outcomes of facial basal cell carcinoma.

Patients and methods: A descriptive study was conducted on patients with facial basal cell carcinoma treated at Viet Tiep Friendship Hospital from January 2023 to March 2026.

Results: The study included 29 patients with facial basal cell carcinoma. The mean age was 72.03 ± 14.65 years (range: 39-100 years), with the 60-80-year age group accounting for the highest proportion (44.8%). Females predominated (62%). The disease duration was mainly less than 3 years (96.5%), with less than 1 year accounting for 51.7%. The most common tumor location was the cheek (34.5%). Tumor size <2 cm accounted for 55.2%, and a surgical margin of 5-10 mm was used in 96.6% of cases. Local flap reconstruction was the most frequently used technique, with rotation flaps accounting for 34.5%. No intraoperative complications occurred in 86% of patients. The rate of good early postoperative outcomes was 93.1%. At the 3-month follow-up, 95.8% of flaps demonstrated good color and thickness, while 93.1% showed good scar outcomes, indicating favorable functional and aesthetic results.

Keywords: Skin cancer, basal cell carcinoma, facial area.

1. INTRODUCTION

Skin cancer is one of the most common malignancies, particularly prevalent among Caucasians and individuals living in regions with high levels of ultraviolet radiation exposure. According to the World Health Organization

[1], the incidence of skin cancer has increased significantly in recent decades. Each year, approximately 2-3 million cases of non-melanoma skin cancer and around 132,000 cases of melanoma are reported worldwide [1]. The three main types of skin cancer include basal cell carcinoma, squamous cell carcinoma, and adnexal skin tumors.

Basal cell carcinoma (BCC) is the most common type of skin cancer, arising from the basal layer of the epidermis and skin adnexal structures. It generally has a favorable prognosis, with rare lymphatic or distant metastasis, and accounts for approximately 70-80% of all skin cancer cases. Lesions typically occur in sun-exposed areas such as the head, face, neck, and arms, with the facial

Viet Tiep Hospital

*Corresponding author: Ha Xuan Khoi
Email: haxuankhoi05041997@gmail.com

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region being the most frequently affected site [2,3]. The disease mainly progresses through local invasion and may extend into adjacent structures such as subcutaneous tissue, cartilage, or bone.

Wide local excision combined with reconstructive surgery is the main treatment approach, aiming for complete tumor removal while restoring both function and aesthetic appearance of the facial region. In recent years, Viet Tiep Friendship Hospital has routinely implemented various advanced excision and reconstruction techniques, achieving notable functional and cosmetic outcomes. However, comprehensive studies describing the clinical, paraclinical characteristics and surgical outcomes of facial basal cell carcinoma at this institution remain limited and require further investigation.

2. SUBJECTS AND METHODS

2.1. Study subjects

The study included 29 patients diagnosed with facial basal cell carcinoma who underwent surgical tumor excision and reconstruction of the defect using local flaps or primary closure at the Oncology and Nuclear Medicine Center, Viet Tiep Friendship Hospital, during the period from January 2023 to March 2026.

Inclusion criteria

- Patients with histopathologically confirmed facial basal cell carcinoma who underwent complete tumor excision and reconstruction of the resulting defect.
- Patients with complete medical records sufficient for study analysis.
- Patients who consented to participate in the study and attended postoperative follow-up visits.

Exclusion criteria

- Patients treated with other surgical approaches.
- Patients with distant metastasis or those who could not undergo curative surgery.
- Patients with severe general condition (ASA > 4).
- Patients with incomplete medical records.

2.2. Study methods

This study was designed as a descriptive study combining both retrospective and prospective components, including a total of 29 patients with facial basal cell carcinoma treated at the Oncology and Nuclear Medicine Center, Viet Tiep Friendship Hospital, from January 2023 to March 2026. The retrospective phase, conducted from January 2023 to January 2025, included 19 cases, while the prospective phase, from February 2025 to March 2026, comprised 10 cases. A convenience sampling method was applied.

All patients underwent wide local excision of the tumor with oncologically appropriate safety margins. Surgical specimens were submitted for histopathological examination to confirm the diagnosis and assess margin status, which was classified as negative (R0) or positive (R1).

Following tumor excision, the reconstructive technique was selected based on the location, size, and characteristics of the defect, including primary closure or local flap reconstruction (advancement, rotation, or transposition flaps).

Postoperative outcomes were assessed during hospitalization and at 3 months postoperatively based on flap viability, adequacy of defect coverage, wound healing, deformity, and postoperative complications. Outcomes were categorized as good, fair, or poor according to predefined criteria.

A good outcome was defined as complete flap survival, satisfactory functional restoration, and favorable aesthetic results (flat, supple scars with good color match and no contracture). Scar quality was further evaluated using the Vancouver Scar Scale.

3. RESULTS

3.1. Age

Table 1. Age groups in the study

Age group	Number	Percentage (%)
< 60	5	17.3
60 - 80	13	44.8
> 80	11	37.9
Total	29	100.0
$\bar{X} \pm SD$ (min - max)	72.03 $\pm$ 14.65 (39 - 100)	

The mean age was 72.03 ± 14.65 years, with the oldest patient being 100 years old and the youngest 39 years old.

The majority of patients were in the 60-80 years age group, accounting for 44.8% of the study population.

3.2. Gender

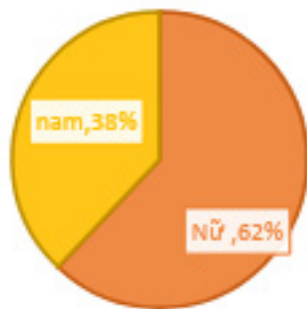


Chart 1: Gender distribution

Female patients predominated, accounting for 62%, while male patients accounted for 38%.

3.3. Duration of disease onset

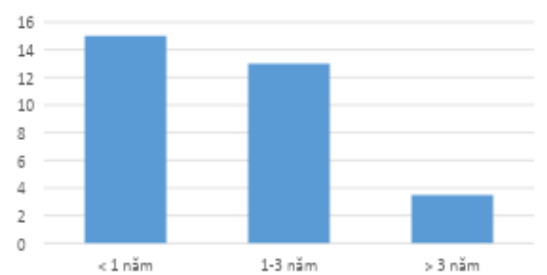


Chart 2: Duration of disease onset

The duration of disease was mainly less than 3 years (96.5%), with the highest proportion occurring within <1 year (51.7%).

3.4 Tumor location

Table 2. Tumor location

Lesion location	Number	Percentage %
Eye	6	20.7
Nose	7	24.1
Cheek	10	34.5
Lip	1	3.4
Forehead	5	17.3
Total	29	100%

The cheek region was the most common tumor location, accounting for 34.5%.

3.5. Tumor size



Chart 3: Tumor size

Tumor size < 2 cm accounted for the highest proportion, at 55.2%.

3.6. Tumor surgical margin

Table 3. Tumor surgical margin

Tumor surgical margin	Number	Percentage (%)
3 - 4 mm	1	3.4%
5 - 10 mm	28	96.6%
Total	29	100.0%

Surgical margins of 5-10 mm accounted for the majority of cases (96.6%), while margins of 3-4 mm accounted for 3.1%.

3.7. Methods of defect reconstruction

Table 4. Methods of defect reconstruction

Surgical reconstruction methods		Number	Percentage (%)
Primary closure		5	17.2
Local flap reconstruction	Rotation flap	10	34.5
	Advancement flap	8	27.6
	Transposition flap	6	20.7
Total		29	100

Local flap reconstruction was the most commonly used method for defect repair. Among these, rotation flaps were the most frequently performed technique (34.5%), followed by advancement flaps (27.6%) and transposition flaps (20.7%). Primary closure accounted for a lower proportion of cases (17.2%).

3.8. Intraoperative and postoperative complications

Most patients had no complications (86%). Surgical site infection occurred in 10% of cases, while postoperative bleeding accounted for 4%.

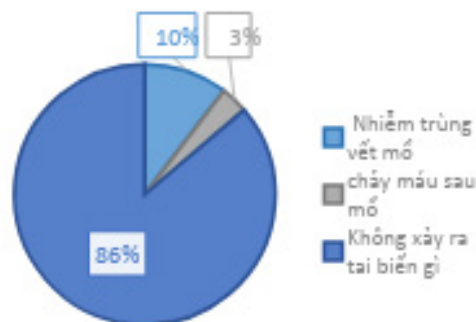


Chart 4: Intraoperative and postoperative complications

3.9. Evaluation of early surgical outcomes

Table 5. Early surgical outcomes

Evaluation criteria of early surgical outcomes	Good	Fair	Bad	Total
Flap viability	23 (95.8%)	1 (4.2%)	0 (0.0%)	24
Coverage function	22 (91.7%)	2 (8.3%)	0 (0.0%)	24
Wound condition	27 (93.1%)	2 (6.9%)	0 (0.0%)	29
Donor site condition	24 (100.0%)	0 (0.0%)	0 (0.0%)	24
Overall surgical outcome evaluation	27 (93.1%)	2 (6.9%)	0 (0.0%)	29

Flap survival was excellent in 95.8% of cases. Coverage function was good in 91.7% of patients, wound healing was good in 93.1%, and the overall surgical outcome was good in 93.1% of cases.

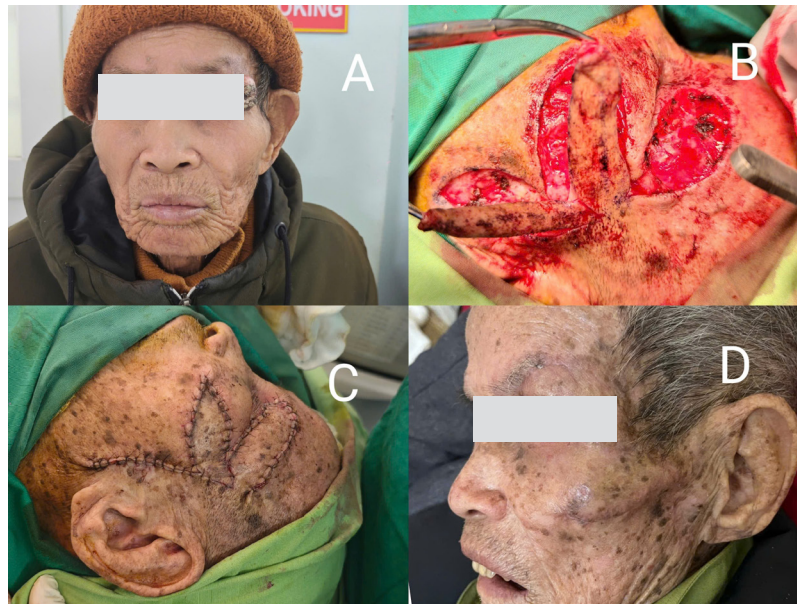
3.10. Evaluation of outcomes at 3 months after surgery

Table 6. Outcomes at 3 months postoperatively

Evaluation criteria	Good	Fair	Bad	Total
Flap color	23 (95.8%)	1 (4.2%)	0 (0.0%)	24
Flap thickness	23 (95.8%)	1 (4.2%)	0 (0.0%)	24
Scar condition	27 (93.1%)	2 (6.9%)	0 (0.0%)	29
Donor site condition	24 (100.0%)	0 (0.0%)	0 (0.0%)	24

Flap color and thickness were rated as good in 95.8% of cases. Scar condition was good in

93.1% of patients, while the donor site condition was good in 100% of cases.



Picture 1. Case report: 90-year-old male with basal cell carcinoma of the left eyelid

(A) Basal cell carcinoma located in the left eyelid region; (B) A transposition flap was raised and mobilized to cover the defect; (C) The flap was sutured into the defect site; (D) Three months postoperatively: the flap was completely viable, fully covered the defect, with good flap contour and satisfactory scar healing.

4. DISCUSSION

4.1. Age and Gender

Basal cell carcinoma can occur at various ages

but is more commonly seen in elderly patients. In our study, the youngest patient was 39 years old and the oldest was 100 years old, with a mean age of 72.03 ± 14.65 years. This result is consistent

with Nguyễn Trần Thúc Huân (2023), who reported a mean age of 72.2 ± 12.8 years [4], and Dương Mạnh Chiến (2022), who reported a mean age of 68 ± 13.1 years [5]. The most common age group was 60-80 years (44.8%), followed by patients over 80 years (37.9%). These findings are consistent with the epidemiological characteristics of basal cell carcinoma, which typically occurs in older individuals due to the cumulative long-term effects of ultraviolet radiation exposure on the skin.

Regarding gender distribution, females accounted for 62% and males 38%, indicating a higher prevalence in females. This result is similar to Nguyễn Trần Thúc Huân (2023), who reported 85.3% females and 14.7% males [4], and Dương Mạnh Chiến (2022), who reported 54.5% females and 45.5% males [5].

4.2. Duration of disease detection

In our study, the duration of disease was mainly less than 3 years, accounting for 96.5%, of which cases detected within less than 1 year accounted for 51.7%. Patients with a longer disease duration were less common. This suggests that most patients presented with lesions that had been present for a certain period but were not yet at an advanced stage. However, in cancer management in general, early detection and treatment remain crucial in limiting tumor progression and local invasion.

4.3. Tumor characteristics

Regarding tumor location, the cheek was the most frequently affected site, accounting for 34.5%, followed by the nose at 24.1%. This result is consistent with Nguyễn Trần Thúc Huân (2023) [4], who reported the nose as the most common site (37.1%), followed by the cheek (31.4%). These are areas that are frequently exposed to direct sunlight, which is in line with the pathogenesis of basal cell carcinoma.

Regarding tumor size, lesions <2 cm accounted for 55.2%, while those measuring 2-5 cm accounted for 44.8%. Similarly, Nguyễn Trần Thúc Huân (2023) reported that tumors <2 cm accounted for 94.2% [4]. Most patients were diagnosed when the tumor was still relatively small, facilitating complete surgical excision and effective reconstruction of the resulting defect.

4.4. Surgical and reconstructive methods

In our study, surgical margins of 5-10 mm accounted for the majority of cases (96.6%), while margins of 3-4 mm accounted for only 3.1%. This rate is higher than that reported by Nguyễn Trần Thúc Huân (2023), which was 71.4% [4]. Selecting an adequate surgical margin helps ensure oncological safety and reduces the risk of local recurrence.

After tumor excision, local flap reconstruction was the most commonly used method. Among these, rotation flaps accounted for 34.5%, advancement flaps 27.6%, and transposition flaps 20.7%, while primary closure accounted for 17.2%. Compared with Dương Mạnh Chiến (2022), who reported rotation flaps at 53.6%, transposition flaps at 25%, and advancement flaps at 24% [5], our study showed a relatively different distribution. Local flaps have advantages in terms of color, thickness, and tissue characteristics similarity, which generally provide good aesthetic outcomes.

Intraoperative complications were uncommon, with 86% of patients experiencing no complications. Surgical site infection occurred in 10% of cases and postoperative bleeding in 4%, indicating that the surgical approach was relatively safe.

4.5. Evaluation of surgical outcomes

Primary closure cases were evaluated based on wound healing status. For cases reconstructed

with flaps (local or regional flaps), the assessment criteria included flap perfusion, flap condition, and healing at both the recipient and donor sites. Early postoperative outcomes showed that 95.8% of flaps had good viability, 91.7% achieved good coverage function, and 93.1% demonstrated good wound healing. Overall surgical outcomes were classified as good in 93.1% of cases and moderate in 6.9%, with no poor outcomes reported.

At 3 months postoperatively, flap color and thickness were rated as good in 95.8% of cases, scar condition was good in 93.1%, and donor site outcomes were good in 100% of cases. The facial region, with its rich vascular network and good skin elasticity, allows local flap reconstruction to achieve favorable functional and aesthetic results.

4.6. Limitations of the study

This study has several limitations. The relatively small sample size ($n = 29$) and the use of convenience sampling may limit the generalizability of the findings. The combined retrospective–prospective design may introduce heterogeneity in data collection. In addition, the short follow-up period (3 months) precludes adequate assessment of long-term outcomes, including recurrence and late aesthetic results.

5. CONCLUSION

In a study of 29 patients with facial basal cell carcinoma treated surgically at the Oncology and Nuclear Medicine Center, Viet Tiep Friendship Hospital, the mean age was 72.03 ± 14.65 years, with the 60-80 age group accounting for 44.8%, and females comprising 62% of cases. The disease duration was mainly less than 3 years (96.5%), of which cases diagnosed within less than 1 year accounted for 51.7%. The most common tumor location was the cheek (34.5%), and most lesions were smaller than 2 cm (55.2%). Wide local excision with 5-10 mm surgical margins

(96.6%), combined with local flap reconstruction, yielded favorable outcomes. Overall, good surgical results were achieved in 93.1% of cases, flap survival was good in 95.8%, and coverage function was satisfactory in 91.7%. At 3 months postoperatively, good outcomes were observed in flap color and thickness in 95.8% of cases and in scar condition in 93.1%, indicating that this approach is safe, effective, and provides both functional and aesthetic benefits in facial reconstruction. Future studies with larger cohorts and longer follow-up periods (over 5 years) are recommended to accurately assess long-term recurrence and late cosmetic outcomes.

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