

Case Report

Skin Graft for Reconstruction of the Lower Right Eyelid Following Wide Excision of Basalioma Tumor

Ragil Yulianto^{1*}, Nofri Suriadi¹, Yulia Wardany¹

ABSTRACT

Basal cell carcinoma (BCC) is the most common eyelid malignancy, often linked to chronic ultraviolet (UV) exposure, and typically affects the lower eyelid. The primary treatment involves wide surgical excision, which may leave defects requiring reconstruction to preserve eyelid function and aesthetics. A 74-year-old woman with a 3×2.5 cm nodular BCC on her right lower eyelid underwent excision with histologic margin evaluation. Reconstruction was performed using a full-thickness skin graft (FTSG) from the right retroauricular area. Postoperative evaluations on the first and fifth days assessed graft viability, complications, eyelid function, and cosmetic results. The graft showed good viability without necrosis or infection. Mild complications, such as mild ectropion and local hyperemia, were observed on the fifth day, but eyelid function, including the ability to close the eye, remained intact. No major complications were noted. FTSG reconstruction after excision provides effective aesthetic results, optimal skin elasticity, and minimal complications. Identifying risk factors like UV exposure and comorbidities, such as diabetes, is crucial for preventing recurrence and complications. Regular postoperative evaluations are necessary for ensuring long-term success. FTSG from the retroauricular area is a safe, effective method for reconstructing moderate-sized lower eyelid defects post-BCC excision.

Keywords: basal cell carcinoma, eyelid reconstruction, full-thickness skin graft, lower eyelid, surgical excision

Basal Cell Carcinoma (BCC) is a malignant skin tumor originating from basal cells in the stratum basale of the epidermis. This cancer is the most common type of malignancy on the eyelids, accounting for about 90% of all eyelid tumors, and is most frequently found in individuals over the age of 65.¹ The nodular subtype is the most common form of BCC, characterized by a slow-growing lesion that is slightly raised, often ulcerated, with a pearly, glossy, and curved border.²

The main risk factor for BCC is ultraviolet (UV) exposure, particularly UVB, which causes DNA damage to skin cells. This risk is increased in individuals with fair skin, older age, a family history of skin cancer, and immunosuppressive conditions.³ BCC diagnosis is made based on clinical evaluation, dermoscopy, and is confirmed

through histopathological examination of biopsy tissue.² In more advanced cases, imaging such as MRI or CT scans can help assess the involvement of deeper structures, while immunohistochemistry can be used to identify specific subtypes

BCC has local invasive properties and is a slow-growing malignant tumor. Therefore, the primary treatment is surgical excision, which allows for complete removal with histological margin control. This approach has been shown to reduce recurrence rates and provide better cosmetic outcomes compared to other therapeutic modalities, such as radiotherapy.^{4,5} However, tumor excision on the eyelids often leaves defects that require reconstruction. Eyelid reconstruction aims to maintain normal eyelid function, including the ability to close the eye, preserve vertical height and stable margins, and achieve a symmetrical aesthetic result.

The choice of reconstruction technique depends on the size of the defect, location, involvement of the eyelid margins, and the

* Corresponding author: ragilyulianto007@gmail.com

¹ Department of Ophthalmology, Arifin Achmad General Hospital, Faculty of Medicine, Universitas Riau, Pekanbaru, Riau Province, Indonesia

orbicularis oculi muscle. Flaps are typically used for larger defects or those involving important functional structures, while full-thickness skin grafts (FTSG) can be an option for moderate-sized defects with well-vascularized wound bases and appropriate aesthetic considerations.⁶

This case report aims to describe the management of a patient with right lower eyelid BCC, where a wide excision was performed followed by reconstruction using the FTSG technique with donor skin from the retroauricular area. An evaluation was conducted to assess graft adherence success and postoperative complications from both functional and cosmetic perspectives.

CASE REPORT

A 74-year-old woman presented with complaints of a black lump on the right lower eyelid since 2 years ago, the lump felt itchy and bled easily. Initially the lump was like a small mole and gradually enlarged, black in colour and covered the right eye. complaints such as weight loss (-), decreased appetite (-) and bumps elsewhere (-). The patient had no previous history of malignancy. The patient has dm and hypertension and is taking medication. The patient works as a vegetable seller and is often exposed to sunlight.

Physical examination found blood pressure 164/ 89 mmHg and other vital signs within normal limits and no enlarged lymph nodes. In the ophthalmological status, the position of both eyeballs was found to be orthophoric, visus od 20/70 and os 20/50, right eyeball pressure and left 15 and normal left and right eyeball movements in all directions. The anterior segment examination of the left eye is normal. In the anterior segment of the right eye, a mass on the inferior palpebra measuring 3x2.5 cm, irregular shape, firm boundaries, palpable rubbery, blackish in colour, there are ulcerations on it and bleeds easily. (As shown in Figure 1)



Figure 1. Clinical Photo at the Clinic of Arifin Ahmad Hospital Pekanbaru

The patient underwent surgery on 11 October 2024 at Arifin Ahmad hospital Pekanbaru. Anti-septic measures were carried out in the operation area and surrounding areas. Marking was made around the tumour. Wide excision of the tumour was performed on the marked area. Graft was taken from the retro auricular area dextra and then the graft was sutured over the tumour defect. The excised mass was marked and submitted to anatomic pathology. (As shown in Figure 2)

The patient received medical therapy such as Ciprofloxacin tab 2 x 500 mg, Mefenamic acid tab 3 x 500 mg, and Gentamicin eye ointment. After 1 day of treatment, the patient complained of pain in the surgical wound. On ophthalmological examination, the patient's right eye visus was 20/70 and left 20/50 with right eyeball pressure 12 and left 11. Left and right eyeball movements are good in all directions, in the anterior segment of the left eye within normal limits, in the right eye there is a graft on the inferior palpebra, there is no bleeding, no signs of infection, no visible tissue necrosis, the eye can close completely and there is an ectropion on the margo inferior palpebra. Other anterior segment examinations were within normal limits. In the scar in the retro auricular area, it was found that the wound was still sutured, there were no signs of infection and bleeding. The patient was then discharged and told to control 3 days later at the clinic of Arifin Ahmad Hospital Pekanbaru. (As shown in Figure 3)

On the 5th postoperative day, the patient had no complaints. The patient's right eye vision was 20/70 and left 20/50 with right eyeball pressure 12 and left 11. The left and right eyeball movements were good in all directions. In the anterior examination of the left eye within normal limits, in the right eye there was a graft on the inferior palpebra, no visible tissue necrosis, no visible bleeding, the eyelids could be completely closed, there was ectropion on the margo of the inferior palpebra and appeared slightly hyperemic and oedema. The rest of the right anterior examination was within normal limits. In the scar in the retro auricula area, it was found that the wound was still sutured, there was no sign of infection and no bleeding. The patient was given antibiotic therapy in the form of clindamycin tab 300 mg 3x1 and gentamicin EO 3x1. (As shown in Figure 4)

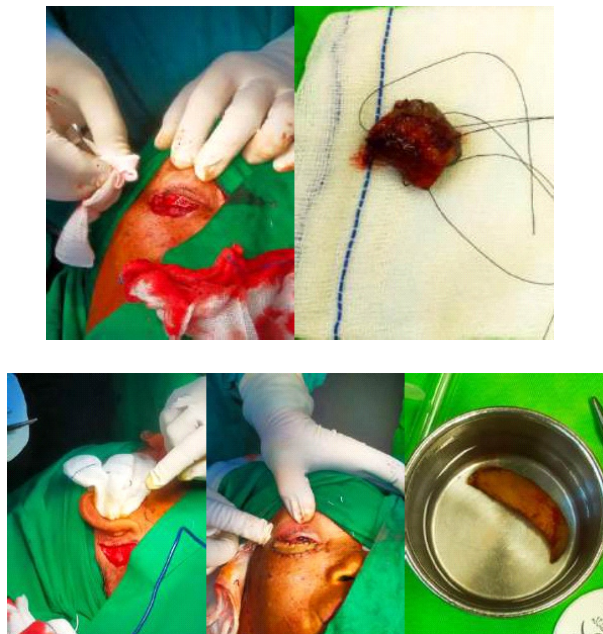


Figure 2. Intraoperation



Figure 3. Post Operation Day 1



Figure 4. Post Operation Day 5

DISCUSSION

Basal cell carcinoma (BCC) is the most common malignant tumor of the eyelids, accounting for about 90% of all eyelid malignancies, with the highest prevalence in elderly individuals.¹ This case demonstrates the classic clinical manifestation of the nodular subtype, presenting as a black-colored mass with an ulcerative surface, pearly, glossy borders, and a tendency to bleed spontaneously. These characteristics align with the typical clinical picture of nodular BCC, which has a slow growth pattern, minimal invasiveness, and relatively low recurrence potential.²

The main risk factor in this case is chronic exposure to ultraviolet (UVB) radiation, which is relevant to the patient's daily outdoor activity as a vegetable seller. Other contributing factors include advanced age and comorbid diabetes mellitus (DM), a secondary immunosuppressive condition associated with an increased incidence of BCC. However, while DM is linked to a higher frequency of BCC, it has not been consistently shown to increase tumor aggressiveness or size.^{3,8}

Surgical excision is the main therapy for eyelid BCC as it effectively controls histologic margins, reduces the risk of local recurrence, and provides superior cosmetic results compared to radiotherapy.^{4,5} According to Gogoi RN, surgical intervention offers a good prognosis, ensuring excellent functional and aesthetic outcomes.⁸ The ideal surgical method is Mohs micrographic surgery (MMS), especially for high-risk tumors or those in complex anatomical locations, as it has a lower recurrence rate compared to conventional excision. However, limitations in facilities and resources make conventional excision the main and effective choice in daily clinical practice.⁹⁻¹¹

In this case, the post-excision defect was moderate in size (3×2.5 cm), involving part of the orbicularis oculi muscle without margin involvement. Skin grafts are classified based on origin, thickness, composition, time, and area (As shown in Table 1).¹⁶ Based on functional and aesthetic considerations, a full-thickness skin graft (FTSG) from the right retroauricular area was chosen, as this method provides superior outcomes in terms of color, contour, elasticity, and skin texture compared to other methods such as split-thickness skin grafts (STSG) or flaps (As shown in Figure 5).^{6,12,13,17} FTSG has been shown to be effective in managing eyelid defects with excellent cosmetic results and minimal risk of long-term contracture. A similar approach was also used by Actis AG in cases of BCC on the eyelid, resulting in good functional and aesthetic outcomes.¹⁴

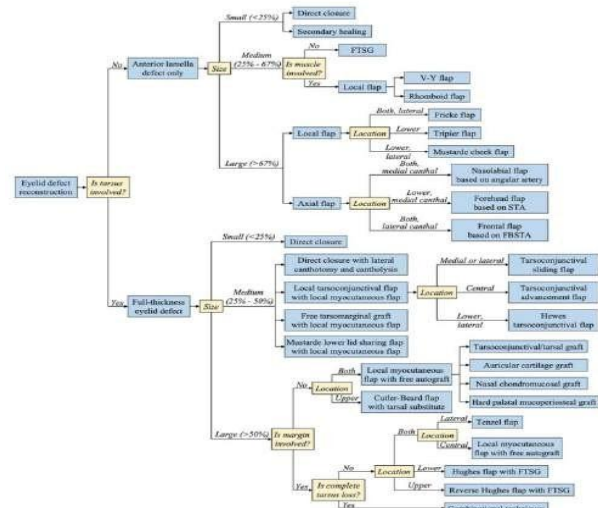
In general, potential complications of the FTSG technique include ectropion, graft contracture, and graft failure due to impaired vascularization.¹⁵ In this case, the graft demonstrated good viability without signs of infection, bleeding, or tissue necrosis. The complications observed were mild ectropion and local hyperemia on the fifth postoperative day, which are common minor complications seen with FTSG use. These should continue to be monitored during regular follow-up visits to ensure optimal long-term functional and aesthetic outcomes

The prognosis for BCC is generally very good due to its slow local growth pattern and very low risk of metastasis. However, tumors that are not treated optimally can invade deeper structures such as the orbit, leading to significant morbidity and severe visual dysfunction. Therefore, the importance of regular postoperative follow-up cannot be overlooked. Monitoring is recommended every 3–6 months during the first three years, followed by annual evaluations to detect early recurrence of the tumor or the development of new lesions at the surgical site or on the contralateral eyelid.¹⁸

Thus, this case demonstrates that the conventional surgical excision followed by reconstruction using FTSG is an effective therapeutic strategy for managing moderate-sized BCC of the inferior eyelid. This approach successfully achieved the therapeutic goals, namely complete tumor eradication, while preserving optimal eyelid function and providing satisfying aesthetic results.

Table 1. Classification of Graft¹⁶

Character	Types
Origin	1. Autograft
	2. Allograft
	3. Xenograft
Thickness	1. Split thickness
	2. Full thickness
	3. Composite
Time	1. Immediate
	2. Differed
Expansion	1. Sheet graft
	2. Meshed graft


Figure 5. Eye Lid Defect Reconstruction Strategies¹⁷

CONCLUSION

This case shows that wide surgical excision followed by full-thickness skin graft (FTSG) from the retroauricular area is an effective treatment for moderate-sized basal cell carcinoma (BCC) of the inferior eyelid. The procedure provided good aesthetic results, optimal elasticity, and preserved eyelid function, despite mild complications like ectropion and hyperemia. Identifying risk factors such as chronic UV exposure and diabetes mellitus is crucial. While the prognosis is generally favorable, regular follow-up is necessary to monitor for recurrence and maintain long-term functional and aesthetic outcomes.

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