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Tenzel flap for reconstruction of full-thickness inferior ocular defects following basal cell carcinoma resection: Case report

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Abstract. The relevance of this study lies in the development and implementation of an effective method of the Tenzel flap for the reconstruction of full-layer defects of the lower eyelid after resection of basal cell carcinoma. The purpose of this scientific study was to reconstruct the lower eyelid after resection of basal cell carcinoma using the Tenzel flap method and to investigate its effectiveness and results. The main feature of the surgical procedure was the use of a semicircular rotary Tenzel flap to repair moderate eyelid defects. This method involved the formation of a flap that starts from the outer corner of the eye, then moves up and along the temple, without crossing the outer edge of the eyebrow. After that, lateral cantolysis was used. The uniqueness lies in the ability to effectively correct moderate eyelid defects in one step, which simplifies the surgical process and minimises trauma to the patient. A significant condition in this procedure is the preservation of the tarsal plate on both sides of the excision, which allows preserving the structural integrity of the eyelid. Furthermore, this modification involves the use of the chondrocytic part of the nasal septum as a substitute and shows the effectiveness of this approach in the reconstruction of the eyelid after removal of basal cell carcinoma. Thus, the specific feature of the described surgical intervention is its effectiveness for moderate eyelid defects and the possibility of using modified methods of substitutes for complex defects. Given the results of the study, this modified method may become a major step in the treatment of patients with basal cell carcinoma, contributing to satisfactory cosmetic and functional results

Keywords: carcinoma; plastic surgery; non-melanoma malignant tumours of the lower eyelid; microsurgical methods of eyelid reconstruction; surgical methods of treatment

Introduction

The relevance of this study lies in the fact that basal cell carcinoma (BCC) is the most common malignancy of the eyelids, accounting for up to 90% of all malignant tumours [1]. As noted by S. Yinon *et al.* [2], more than 50% of basal cell carcinomas occur in the lower eyelid, 30% in the medial corner of the eye, 15% in the upper eyelid, and 5% in the lateral corner of the eye. The development of basal cell carcinoma is caused by exposure to ultraviolet rays, genetic factors, age, scarring, and chronic skin damage. The studies by K. Taniguchi *et al.* [3], C. Barrancos *et al.* [4] found that sunlight exposure is the main environmental cause of BCC, with the development of the disease being related to the nature of the exposure. The disease has local growth and is characterised by painless spread to the surrounding tissues. Undetected and incurable tumours are doubling in volume every year. The periorbital area is a place where BCC can show aggressive and invasive growth. Given the extensive vascular system, sparse connective tissue and particularly thin skin, basal cell carcinoma can easily penetrate tissues and spread to the surrounding areas, complicating the treatment process. Invasion usually requires orbital exenteration, as noted by N.J. Damico *et al.* [5]. There are several treatment options for basal cell carcinoma. S.K. Zöllner *et al.* [6] point out that the choice of treatment depends

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mainly on the risk of recurrence, which depends on the presence or absence of aggressive clinical and histopathological features. Depending on the size and location of the lower eyelid defect after surgical resection of the BCC and other factors, there are different methods of reconstruction.

Thus, C. Trigaux *et al*. [7] highlight the problem of reconstruction of total defects of the upper eyelid and compare their approach with already known methods. The technique included three clinical cases where it was necessary to remove tumours of the upper eyelid, leading to total defects. A two-stage procedure was used for the reconstruction, including a folding Mustard flap, a rotational flap, and lateral canthoplasty using a periosteal bipedic flap and a Tenzel flap. The results of the study suggest that this approach is an alternative for the reconstruction of total upper eyelid defects. S. Abbasi *et al*. [8] compared the effectiveness of the Tenzel and Cutler-Beard reverse flap in cases of upper eyelid defects. The results showed that the reverse Tenzel flap was superior due to its lack of complications, one-stage surgery, and rapid healing compared to the Cutler-Beard flap, which caused problems with flap entropy and retraction, requiring reoperation and delaying the healing process. A study conducted by J.B. Holds [9] examines the problem of reconstruction of total eyelid defects. The author describes the importance of an expanded arsenal of techniques to achieve the best possible surgical results.

Various methods of reconstruction after resection of basal cell carcinoma of the lower and upper eyelids highlight the need for an individualised approach to achieve the best possible surgical results. Therefore, the purpose of this study was to investigate and implement an effective method of reconstruction for basal cell carcinoma, specifically the Tenzel flap method, to improve the results of treatment and eyelid reconstruction.

Materials and Methods

This study involved a patient aged 80 years who was diagnosed with nodular basal cell carcinoma of the lower eyelid. The study was conducted at the Department of Plastic, Reconstructive and Aesthetic Surgery, L. Pasteur University Hospital and the Faculty of Medicine of Pavol Jozef Šafárik University in Košice during July and September 2022. Before the patient was included in the study, it was found that there was no history of obesity, alcohol consumption, diabetes, Cushing's syndrome, and long-term use of corticosteroids and medicines that affect lipid levels, such as corticosteroids and oestrogens. After explaining the purpose of the study and filling out the consent form, the dermatologist conducted a medical examination, and personal information such as age, gender, location of the lesion and, ultimately, the histopathological type of tumour was recorded in a developed information form. Notably, the patient's preoperative blood test was performed according to the routine surgical treatment of patients in the hospital (5 mL of intravenous blood taken after 8 hours of fasting). The obtained values corresponded to the disease process and did not reveal any parameters that would cause restrictions for the operation, and the data obtained were entered into the information form. After the biopsy, the diagnosis of the biopsy was confirmed by a dermatologist through microscopic analysis of the lesion. Both histological and cytological methods were used. The analysis revealed oval, round, and spindle-shaped cells.

For the reconstruction, authors used the Tenzel methodology, which included the following steps. The Tenzel flap method is one of the techniques for restoring the lower eyelid after removal of a tumour or other surgical procedure. However, for the best defect reconstruction, the Mustard method was also used in this study due to the specific needs of the patient and the characteristics of the defect, which required a more detailed and individualised reconstruction. This technique allows for the reconstruction of defects to be tailored to the patient's individual characteristics and provides greater coverage of the defective area. Surgical intervention was performed under local anaesthesia with propofol sedation, using a 27G-30G needle, and 0.5-1% bupivacaine with epinephrine 1:100,000. The equipment used during the operation is presented in Figure 1 and described below.

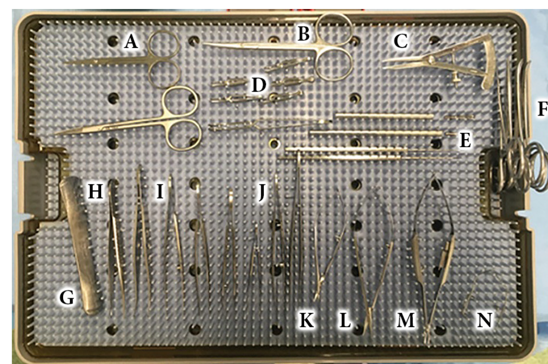

Figure 1. Main devices and equipment used during the operation

Notes: A – iris scissors; B – Stevens scissors; C – surgical callipers; D – bulldog clamps; E – skin retractors; F – arterial forceps; H – tissue forceps; I – small forceps; J – large Adson's forceps; K – Vannas spring scissors; L – Westcott tenotomy scissors; M – needle holder with a lock; N – eyelid mirror

Source: photographed by the authors of this study

First of all, this is a step in which the affected BCC tissue was marked and resected using a standard surgical procedure. Then the upper flap was separated from the upper eyelid for further reconstruction. At the next stage, a small incision was made on the upper eyelid to create a fascia flap, which was then used for reconstruction. The fascia flap created on the upper eyelid was transferred and fixed at the site of the defect. This allowed restoring the eyelid structures. At the end of the procedure, the results were evaluated. This technique required great precision and experience from the surgeon. Subsequently, the upper flap was transplanted to the lower eyelid to close the defect and restore the anatomy. After the surgery, the patient was

under systematic observation and constant monitoring of the postoperative field for a week.

The results of functional recovery and the cosmetic effect of the reconstruction were assessed using standardised scales and clinical indicators. The study was conducted following the ethical standards of the World Medical Association's Declaration of Helsinki "Ethical Principles for Medical Research Involving Human Subjects" and the international standard "Good Clinical Practice" – ICH GCP, which define the general principles and requirements for all clinical trials involving human subjects [10, 11]. The patient has given their informed consent to take part in the study and to use this treatment.

Results

The first stage of surgery included marking and resection of the affected basal cell carcinoma tissue according to the standard procedure. This key step was aimed at complete removal of the tumour while minimising damage to the surrounding healthy tissue. In this study, authors chose the method of reconstruction of the lower eyelid after preliminary surgical removal of the tumour, which is presented in Figure 2.

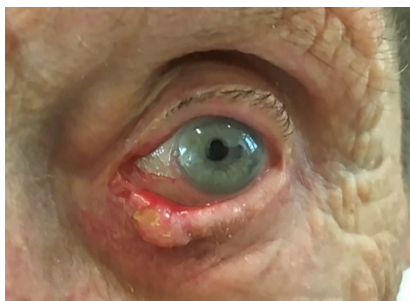

Figure 2. Nodular basal cell carcinoma of the lower eyelid
Source: photographed by the authors of this study

When the defect is moderate within 30-60%, it is possible to use a semicircular Tenzel rotary flap. The incision line of the semicircular Tenzel's musculocutaneous flap started from the outer corner of the eye and led upwards and temporally, without crossing the border of the outer edge of the eyebrow. Figure 3 shows this stage of the operation. Next, the flap was separated for further use in the reconstruction procedure.

The flap was transferred and fixed at the site of the defect, which allowed restoring the anatomical structure of the eyelid. This stage required great precision and experience from the surgeon, as the quality of the reconstruction depended on it. Then lateral cantolysis was performed. After direct suturing of the edges of the defect, the entire flap was mobilised, and a new external angle was formed. This flap was used to close the anterior plate (skin and muscle), but it did not eliminate the defect in the posterior plate. The main condition for this procedure was to preserve the tarsal plate on both sides of the excision.

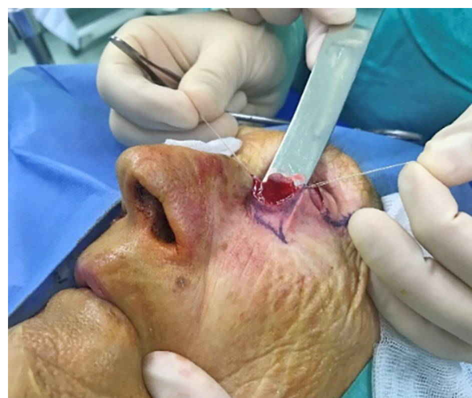

Figure 3. Condition of tumours after removal with a 5 mm safety line
Source: photographed by the authors of this study

In this study, the patient who took part in the study required a modification of the Tenzel flap method, which is the Mustard technique, where the incision line is extended to the preauricular region. The Mustard method is distinguished by the fact that the incision line is extended to the preauricular region, which gives surgeons more flexibility in the shape and positioning of the flap. Considering the needs of a particular patient and the specifics of the defect, the Mustard method was the best choice to ensure a comprehensive and accurate reconstruction. Its application helped to consider the anatomical features and ensure the best restoration results, which is important for improving the functional and aesthetic aspects of the patient. Figure 4 shows this stage of surgery.

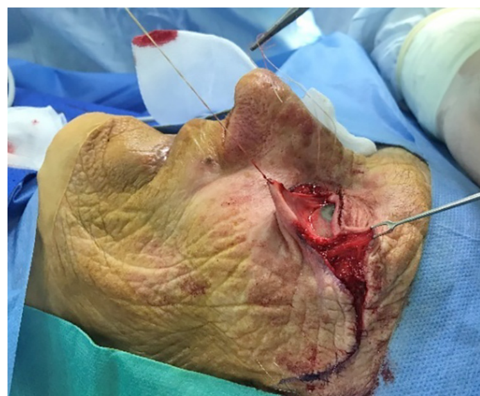

Figure 4. Reconstruction of the Tenzel flap with a tarsal replacement
Source: photographed by the authors of this study

For defects affecting both the anterior and posterior eyelid laminae, the residual tarsal plate does not allow for a straight suture. Therefore, plastic surgery was performed using the Tenzel flap method with the use of pre-plate substitutes (suitable materials can be ear cartilage, chondrosaline part of the nasal septum or nasal mucosa, possibly synthetic substitutes). Figure 5 shows the place where the chondromycotic part of the nasal septum was taken.

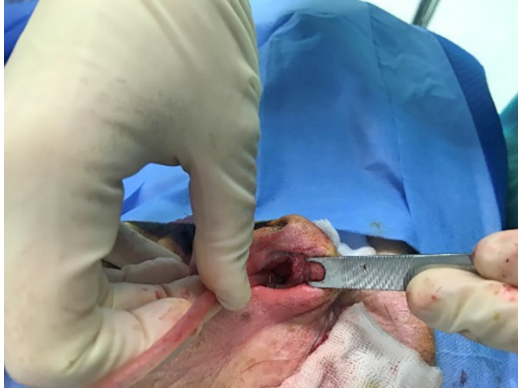

Figure 5. Replacing the bridge of the nose – chondromucous part of the nasal septum
Source: photographed by the authors of this study

The use of the chondromycotic part of the nasal septum in surgical interventions was conditioned by several factors. The chondromucosal part of the nasal septum is a biocompatible tissue because it contains chondral components. This can help reduce the risk of rejection and improve the healing process after surgery. The chondromucosal part of the nasal septum has high structural strength and can be used to restore and maintain structures that have lost their integrity due to disease or surgery. The nasal septum is easily accessible for surgery, and its use for chondromucosal tissue harvesting can reduce the need for additional graft sites. Chondromucosal tissue can be well modelled and adapted to the specific needs of reconstruction. This allowed the surgeons to create a precise and individualised shape according to the patient's anatomy. Figure 6 shows the most chondromycotic part of the nasal septum, which was used in this study.

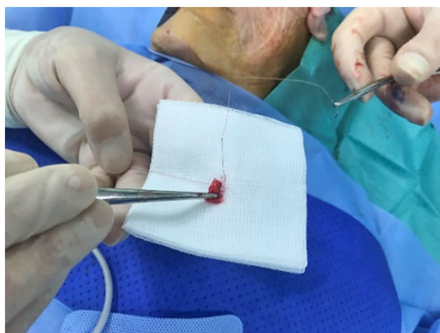

Figure 6. The bridge of the nose is a chondromucous part of the nasal septum
Source: photographed by the authors of this study

Therefore, the use of the chondromucous part of the nasal septum can be the chosen strategy to achieve the best results in reconstructive surgery, providing not only functionality but also aesthetic restoration. Thanks to the Mustard method and lateral cantolysis, it was possible to preserve the tarsal plate on both sides of the excision and ensure effective reconstruction of medium-sized defects in one step. A modified technique was also used, which included the use of pre-orbital substitutes for defects affecting both eyelid plates. This modification of Tenzel's method showed positive results, especially when using the chondrosaline part of the nasal septum as a substitute, which confirmed the effectiveness of these surgical approaches. Figure 7 shows a patient with lower eyelid reconstruction with a Tenzel flap after resection of basal cell carcinoma.

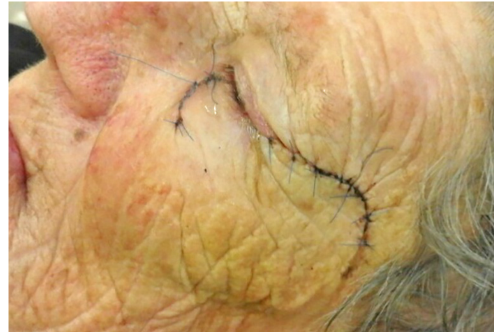

Figure 7. Patient with reconstruction of the lower eyelid with a Tenzel flap after resection of basal cell carcinoma
Source: photographed by the authors of this study

After the procedure, the results were evaluated, paying attention to functional recovery and cosmetic effect. Reproducing the anatomy and ensuring the best appearance were the priority goals. The patient was subjected to systematic observation and constant monitoring for a week after the operation. This included tests that helped determine the patient's health and identify possible reactions to the surgical procedure. Thus, the results of the surgical intervention demonstrate a high level of precision and experience, which contributes to successful reconstruction. Postoperative observation and evaluation confirm the quality of functional and cosmetic recovery, making this method effective in the treatment of basal cell carcinoma.

After reconstruction using the Tenzel flap method in a patient with nodular basal cell carcinoma of the lower eyelid, it is important to note the positive aspects associated with the restoration of functionality and appearance. Visual function was investigated and monitored during the postoperative period. During the recovery, the patient's eye function was observed and evaluated based on close monitoring. The reconstruction helped to restore eyelid mobility, which is a key aspect for comfort and daily activity. When assessing the results of the reconstruction, authors considered not only medical effectiveness, but also the patient's comfort during normal activities and life. The reconstructed area was subjected to scrutiny in terms of cosmetic effect and aesthetic appearance. Efforts were made to bring the reconstructed area as close as possible to its natural appearance, considering cosmetic aspects. In addition, postoperative monitoring was carried out for a week. This period made it possible to consider the dynamics of the patient's condition and conduct the necessary tests to assess their health and identify possible reactions to the surgical procedure.

The reconstruction of the lower eyelid using the Tenzel flap method proved to be successful and effective. Functional aspects were restored, and the appearance is as close to natural as possible. Postoperative monitoring confirmed a stable condition and no negative reactions. Thus, the findings of this study confirm the success and effectiveness of the Tenzel flap method in the reconstruction of the lower eyelid after resection of basal cell carcinoma.

Discussion

Scientific research and reconstruction of the lower eyelid after resection of basal cell carcinoma is an active area in plastic and reconstructive surgery. Many plastic surgeons use the Tenzel technique to reconstruct tissue after tumour removal and other surgical interventions. M.L. Ramsey *et al.* [12] highlighted the importance of choosing the best possible eyelid reconstruction strategy, considering the characteristics of the defect, such as thickness, size, and location. It was found that the ideal method should have several key characteristics, such as maintaining contact without irritation of the bulbar conjunctiva and cornea, comfortable support, versatility for different types of defects, ease of performance, and minimal damage to the donor tissue. Defects of less than 25% of the eyelid area can be closed without complications, while larger defects often require the use of free tissue grafts or flaps. In this study, the Tenzel technique is noted as the best possible choice for restoring anatomy and function after resection of the affected tissue, especially in the case of an elderly patient, and contributes to the expansion of opportunities and the introduction of innovative approaches in medical practice. Analysis of the study conducted by Y. Yan *et al.* [13] focuses on the use of a full-thickness skin graft (FTSG) and local random flaps for the reconstruction of defects in the anterior lid plate. The experiment demonstrates the effectiveness of FTSG for simple defects and the possibility of combining it with vascularised posterior plate replacements for bilamellar defects. Notably, to achieve aesthetic results, it is important to choose donor sites that have a similar colour, thickness, and texture to the periocular area, such as the tissues of the ipsilateral or contralateral eyelid, retroauricular, inner brachial and supraclavicular areas. Complications associated with this technique include hypertrophic scarring, but they can be treated with massage, steroid ointments, and silicone gels. The use of these methods helps to improve the cosmetic result after surgery. In this study, which involved an 80-year-old patient with nodular basal cell carcinoma of the lower eyelid, the Tenzel technique was used to reconstruct the defect. Comparatively, the choice of method is related to the nature of the defect and its histopathological features. An important aspect is the preservation of the aesthetic and functional result, as well as the avoidance of complications, which should be considered when choosing a reconstruction method for basal cell carcinoma of the eyelid.

J. Prohaska *et al.* [14] and O. Ozgur *et al.* [15] discuss various reconstruction methods for correcting upper eyelid and periocular defects. Different types of rotational flaps, including the Mustardé cheek flap and the Tripier orbicularis muscle-dermal flap, can solve the problem of vertical defects of the lower eyelid of various sizes. The advantages and disadvantages of each method were analysed, considering the thickness of the cheek skin, invasiveness of the procedures, risks associated with facial nerve damage, and the specifics of application in concrete clinical scenarios were described. This experiment emphasises the importance and effectiveness of the Tenzel flap method for reconstruction in basal cell carcinoma, specifically, for the correction of lower eyelid defects. The study confirms that the Tenzel method has unique advantages over other reconstruction methods, and its application in medical practice in Slovakia is significant and relevant.

F. Bernardini & B. Skippen [16] and A.M. Hishmi *et al.* [17] found that there are various methods of eyelid reconstruction after removal of basal cell carcinoma, including the use of Tenzel flaps and other modifications. The variability of the methods lies in the size and location of the flaps used, which depends on the location of the defect and contributes to effective reconstruction. Specifically, such methods as the semicircular rotary Tenzel flap used to repair subtotal defects located far from the lateral corner of the eye are described. The reversed Tenzel flap is used to repair the upper eyelid and other defects, but has a limited size, especially in the vertical dimension. The Fricke temporal flap is used to reconstruct large defects of the lower and upper eyelids, as well as lateral defects. However, this procedure can lead to side effects, such as a raised eyebrow and misalignment of the upper eyelid. The use of the Fricke cheek flap instead of the frontal flap allows for more available tissue and avoids raising the eyebrow. Within the framework of the above study, the Tenzel technique was used for reconstruction, including the stages of marking and resection of the affected BCC tissue, as well as the isolation and transplantation of the upper flap to close the defect and restore the anatomy. Compared to previous studies that emphasised different methods of eyelid reconstruction after basal cell carcinoma removal, including the use of Tenzel and other modifications, this study confirmed the effectiveness of the Tenzel method.

K. Yamashita *et al.* [18] and V. Malviya *et al.* [19] analyse various methods of eyelid defects reconstruction, including the use of ear cartilage grafts. Particular attention is paid to high aesthetic effect and reliable support, which is not accompanied by visible atrophy or dissolution of the graft, helping to avoid eyelid retraction and other complications. However, the absence of an inner membrane in such grafts, which is necessary for conjunctival reconstruction, is emphasised, and discomfort from direct contact of the eye with the unprepared surface of the graft is noted. It is highlighted that the preservation of the periosteum or the use of an oral mucosa graft can solve this problem. Posterior plate defects that cover less than 60% of the horizontal length of the eyelashes can be corrected with local tarsoconjunctival flaps, considering the

configuration of the defects. Comparing the results, the present study identifies the Tenzel method as an important approach to reconstruction, specifically in basal cell carcinoma. This method is characterised by a high aesthetic effect and reliable support, avoiding visible atrophy or dissolution of the graft, which helps to avoid eyelid retraction and other complications.

Central defects affecting the lower tarsus and eyelid have different reconstruction options depending on their position. Previously, B. Skippen *et al.* [20] described that these defects can be closed with a flap taken from the tarsoconjunctiva and raised from the residual central upper tarsus. Medial or lateral defects can be effectively repaired using a tarsoconjunctival sliding flap from adjacent eyelid tissue, as described in the studies by P.L. Custer & M. Neimkin [21], J.A. Cha & K.A. Lee [22], and A. Tinklepaugh *et al.* [23]. Defects in the lateral corner of the lower eyelid can be successfully corrected with a Hughes tarsoconjunctival flap, which is transferred from the upper eyelid. Notably, these methods are simple and fully utilise the residual eyelid, but for the stability of the reconstructed eyelid, it is necessary to have an eyelid height of at least 3-4 mm. On the contrary, the Tenzel method requires an additional tarsal substitute due to the absence of this element for the reconstruction of the upper part of the flap. This method is effective and can be used to close medium-sized defects in one step, but complications such as upper eyelid retraction and entropion should be considered. Thus, the choice of eyelid reconstruction method should consider the individual characteristics of each clinical case. The right choice of reconstruction method is an essential aspect of BCC treatment, and lower eyelid reconstruction after tumour removal is important to maintain functionality and achieve the best possible cosmetic results. Additional research and improvements in reconstruction techniques may further improve the treatment of patients with BCC.

Conclusions

This scientific medical study looked at methods of reconstructing lower eyelid defects after surgical removal of a BCC. It was found that the Tenzel flap method is the best approach to the reconstruction of the lower eyelid after resection of basal cell carcinoma and confirmed that predicting the correct reconstruction technique is a key factor in achieving best results and preserving eyelid function. It was shown that creating a suitable reconstruction plan and choosing the best method allows for individualised treatment, providing patients with the best possible outcome that affects both their health and quality of life. The described method of using a semicircular rotary Tenzel flap is a unique and effective approach for the reconstruction of moderate eyelid defects. It simplifies the surgical process and minimises damage to the patient, allowing for effective correction of medium-sized defects in one step. A major prerequisite for reconstruction is the preservation of the tarsal plate on both sides of the excision, which helps to maintain the structural integrity of the eyelid and promotes optimal functional recovery. It was proved that the use of the chondrocytic part of the nasal septum as a substitute and other modifications confirm the effectiveness of this approach in eyelid reconstruction after removal of basal cell carcinoma, specifically for complex defects.

Thus, this study provides practicing surgeons with valuable conclusions and supports the use of the Tenzel flap method as an effective and innovative means of reconstruction after resection of basal cell carcinoma. Studying the effect of the Tenzel flap method on patients and different variations of eyelid defects allows developing treatment approaches optimised for concrete clinical scenarios. A comparison of the effectiveness and advantages of the Tenzel flap method with other already known reconstruction methods may provide additional conclusions about its competitiveness. Further integration of this method can considerably improve patient outcomes and expand the possibilities for reconstruction in basal cell carcinoma, making this study relevant and indicative of the introduction of new, more effective approaches into medical practice in Slovakia.

Acknowledgements

None.

Conflict of Interest

The author declares no conflict of interest.

References

[1] Furdová A, Kapitanova K, Kollarova A, Sekac J. Periocular basal cell carcinoma – clinical perspectives. Oncol Rev. 2020;14:420. DOI: 10.4081/oncol.2020.420

[2] Yinon S, Ullrich K, Malhotra R, Andre SL. Revisiting the upper eyelid blepharoplasty advancement flap: Adaptation for the repair of full-thickness upper eyelid defects – a case series. J Ann Eye Sci. 2022;7:40. DOI: 10.21037/aes-21-62

[3] Taniguchi K, Takano M, Tobari Y, Hayano M, Nakajima S, Mimura M, et al. Influence of external natural environment including sunshine exposure on public mental health: A systematic review. Psychiatry Int. 2022;3(1):91–13. DOI: 10.3390/psychiatryint3010008

[4] Barrancos C, Garcia-Cruz I, Ventas-Ayala B, Sales-Sanz M. The addition of a conjunctival flap to a posterior lamella auricular cartilage graft: A technique to avoid corneal complications. Eur J Ophthalmol. 2021;31(4):2165–70. DOI: 10.1177/1120672121998914

[5] Damico NJ, Wu AK, Kharouta MZ, Eitan T, Pidikiti R, Jesseph FB, et al. Proton beam therapy in the treatment of periorbital malignancies. Int J Part Ther. 2021;7(4):42–51. DOI: 10.14338/IJPT-20-00025.1

[6] Zöllner SK, Amatruda JF, Bauer S, Collaud S, de Álava E, DuBois SG, et al. Ewing sarcoma – diagnosis, treatment, clinical challenges and future perspectives. J Clin Med. 2021;10(8):e1685. DOI: 10.3390/jcm10081685

[7] Trigaux C, Holtmann C, Neumann I, Borrelli M, Geerling G. Total full-thickness upper eyelid reconstruction: Combination of mustardé eyelid switch flap with a bipedicled periosteal and tenzel flap technique. Klin Monbl Augenheilkd. 2023;240(7):903–8. DOI: 10.1055/a-1931-0328

[8] Abbasi S, Kamil Z, Faisal SM, Saad SM, Khan TH. Upper eyelid reconstruction surgeries; comparison of outcomes between reverse tenzel flap versus cutler beard flap procedure. J Ayub Med Coll Abbottabad. 2022;34(1):36–40. DOI: 10.55519/JAMC-01-9045

[9] Holds JB. Lower eyelid reconstruction. Facial Plast Surg Clin North Am. 2016:24(2):183–91. DOI: 10.1016/j.fsc.2016.01.001

[10] The World Medical Association. Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects [Internet]. Available from: https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/

[11] E6(R2) Good Clinical Practice: Integrated Addendum to ICH E6(R1) [standard online]. 2018 [cited 2023 Dec 5]. Available from: https://www.fda.gov/regulatory-information/search-fda-guidance-documents/e6r2-good-clinical-practice-integrated-addendum-ich-e6r1

[12] Ramsey ML, Walker B, Patel BC. Full-thickness skin grafts [Internet]. Treasure Island: StatPearls Publishing; 2023 [cited 2023 Dec 5]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK532875/

[13] Yan Y, Fu R, Ji Q, Liu C, Yang J, Yin X. Surgery strategies for eyelid defect reconstruction: A review on principles and techniques. Ophthalmol Ther. 2022;11:1383–8. DOI: 10.1007/s40123-022-00533-8

[14] Prohaska J, Sequeira Campos M, Cook C. Rotation flaps [Internet]. Treasure Island: StatPearls Publishing; 2023 [cited 2023 Dec 5]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK482371/

[15] Ozgur O, Kothapudi VN, Rostami S. Lower eyelid reconstruction [Internet]. Treasure Island: StatPearls Publishing; 2021. [cited 2023 Dec 5]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK470320/

[16] Bernardini, F., Skippen, B. Principles and techniques of eyelid reconstruction. In: Chaugule S, Honavar S, Finger P, editors. Surgical Ophthalmic Oncology. Springer, Cham; 2019. P. 33–57. DOI: 10.1007/978-3-030-18757-6_4

[17] Hishmi AM, Koch KR, Matthaei M, Bölke E, Cursiefen C, Heindl LM. Modified Hughes procedure for reconstruction of large full-thickness lower eyelid defects following tumor resection. Eur J Med Res. 2016;21:e27. DOI: 10.1186/s40001-016-0221-1

[18] Yamashita K, Yotsuyanagi T, Sugai A, Sugai A, Gonda A, Kita A, et al. Full-thickness total upper eyelid reconstruction with a lid switch flap and a reverse superficial temporal artery flap. J Plast Reconstr Aesthet Surg. 2020;73(7):1312–17. DOI: 10.1016/j.bjps.2020.02.017

[19] Malviya V, Goyal S, Bansal V. Reconstruction of lower eyelid with nasolabial flap for anterior lamella and turnover flap for posterior lamella. Surg J. 2022;8(1):56–59. DOI: 10.1055/s-0041-1742177

[20] Skippen B, Hamilton A, Evans S, Benger R. One-stage alternatives to the Hughes procedure for reconstruction of large lower eyelid defects: Surgical techniques and outcomes. Ophthalmic Plast Reconstr Surg. 2016;32(2):145–9. DOI: 10.1097/IOP.0000000000000622

[21] Custer PL, Neimkin M. Lower eyelid reconstruction with combined sliding tarsal and rhomboid skin flaps. Ophthalmic Plast Reconstr Surg. 2016;32(3):230–32. DOI: 10.1097/IOP.0000000000000626

[22] Cha JA, Lee KA. 2020. Reconstruction of periorbital defects using a modified Tenzel flap. Arch Craniofac Surg. 2020;21(1):35–40. DOI: 10.7181/acfs.2019.00577

[23] Tinklepaugh A, Husain Z, Libby TJ, Ciocon D. Management of a lower eyelid defect. Dermatol Surg. 2018;44(12):1627–30. DOI: 10.1097/DSS.0000000000001596

Метод клаптя Тензеля для реконструкції повношарових дефектів нижньої повіки після резекції базальноклітинного раку: клінічний випадок

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Анотація. Актуальність дослідження полягає в розробці та впровадженні ефективного методу клаптя Тензеля для реконструкції повношарових дефектів нижньої повіки після резекції базальноклітинного раку. Метою даної наукової роботи була реконструкція нижньої повіки після резекції базальноклітинної карциноми з використанням методу клаптя Тензеля та дослідження його ефективності й отриманих результатів. У хірургічному втручанні основну особливість становило використання напівкруглого поворотного клаптя Тензеля для відновлення помірних дефектів повіки. Зазначений метод передбачав формування клаптя, який починався від зовнішнього кута ока та направлявся вгору і вздовж скроні, не перетинаючи межі зовнішнього краю брови. Після цього застосовувався латеральний кантоліз. Унікальність полягає в можливості ефективного виправлення помірних дефектів повіки за один етап, що спрощує хірургічний процес та мінімізує травматизацію для пацієнта. Важливою умовою в цій процедурі є збереження тарзальної пластини з обох боків висічення, що дозволяє зберегти структурну цілісність повіки. До того ж, ця модифікація включає використання хондроцитарної частини носової перегородки як замінника і виявляє ефективність цього підходу у відновленні повіки після видалення базальноклітинного раку. Таким чином, особливість описаного хірургічного втручання полягає в його ефективності для помірних дефектів повіки та можливості використання модифікованих методів замінників для складних дефектів. Враховуючи результати дослідження, цей модифікований метод може стати важливим етапом в лікуванні пацієнтів з базальноклітинною карциномою, сприяючи забезпеченню задовільних косметичних та функціональних результатів

Ключові слова: карцинома; пластична хірургія; немеланомні злоякісні пухлини нижньої повіки; мікрохірургічні методи відновлення повік; хірургічні методи лікування