GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 9 (378) Сентябрь 2026

ТБИЛИСИ - NEW YORK



ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

GEORGIAN MEDICAL NEWS
NO 9 (378) 2026

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Abstract.

Small-to-medium-sized cutaneous and mucocutaneous defects involving various facial regions remain challenging to reconstruct while achieving optimal functional and aesthetic outcomes. Individualized preoperative assessment and planning are therefore essential for selecting the most appropriate dermatosurgical reconstructive approach, taking into consideration the precise anatomical location, defect characteristics, and desired aesthetic outcome.

The cutaneous logarithmic spiral flap represents a useful one-stage option for reconstruction of defects involving the lateral nasal wall and nasal ala. Its curved geometric design facilitates flap rotation while distributing tension vectors along the length of the flap.

The V-to-T closure is a novel and innovative reconstructive technique that combines the advantages of a V-to-Y advancement flap while avoiding its potential aesthetic disadvantages. At the same time, it follows the principles of primary closure, maintaining a simple surgical approach and allowing component-to-component tissue approximation.

We present two independent cases involving a cutaneous defect of the left nasal ala following excision of basal cell carcinoma and a mucocutaneous defect of the labium inferioris oris following surgical excision of a squamous cell carcinoma. The nasal alar defect was reconstructed using a logarithmic spiral flap, whereas the labium inferioris oris defect was reconstructed using the V-to-T closure technique.

Key words. Reconstructive surgery, dermatosurgery, facial cutaneous reconstructive surgery, facial region, high-risk facial subunits, nasal ala, nasal alar reconstruction, logarithmic spiral flap, basal cell carcinoma, labium inferioris oris, lower lip reconstruction, V-to-T closure, squamous cell carcinoma.

Introduction.

Facial cutaneous reconstructive surgery remains the cornerstone of management of cutaneous and mucocutaneous defects resulting from surgical interventions [1]. Optimal reconstruction relies on the careful integration of donor-site selection, tissue composition and vascularity, biomechanical properties, and the principles of tissue recruitment and movement [1]. Equally critical is the strategic alignment of incision placement, tissue vectors, and scar orientation based on the affected aesthetic subunits [1].

The nose represents a central aesthetic subunit of the midface which determines the overall facial symmetry and aesthetic balance [2]. Its complex three-dimensional structure, compromising multiple distinct anatomical subunits, renders nasal reconstruction particularly challenging, as even subtle misplaced tissue alignment may result in functional deformity and aesthetic disfigurement [2].

Reconstructive options for nasal cutaneous defects include a broad spectrum of techniques, including skin grafts, local flaps, regional flaps, and free flaps [3]. The choice of reconstructive modality should be individualized according to the defects size, location, tissue composition, while also employing the patient's unique facial anatomy and skin characteristics [3].

Lower lip reconstruction presents a particular challenge, as malignant lesions frequently arise in this region and require adequate-free margins, often resulting in defects that are considerably larger than initially anticipated [4]. Free, distant, and local flaps can be utilized for the reconstruction of such defects [4].

Case report 1.

A defect on an 80-year-old female resulted from a surgical excision of an infiltrative basal cell carcinoma, staged I pT1NxMxR0, located in sulcus alaris sinister, ad junctionem parietis lateralis nasi (Figure 1). The resultant defect was circular, measured 10 mm x 10 mm and 3.0 mm in depth, with exposure of the underlying perichondrium.

Circular defects of the left alar-facial groove (alar facial junction) present a reconstructive challenge because this groove represents an important facial boundary between the nasal and cheek subunits. It is defined by the transition between the convex, mobile alar lobule medially and the relatively flat lateral nasal wall superiorly, and the adjacent medial cheek laterally. Preservation or reconstruction of this distinct dynamic sulcus is essential for maintaining the normal contour and symmetry of the nose and cheek. Flattening or blunting of the groove may result in visible facial asymmetry, with loss of definition between the nasal and cheek regions.

The alar base must be securely anchored to prevent lateral displacement toward the cheek during healing, which may result in widening of the left nostril compared to the contralateral side.

To ensure flap viability and minimize the risk of iatrogenic injury, careful consideration must be given to the neurovascular anatomy. Relevant structures include the levator labii superioris alaeque nasi muscle, angular artery, lateral nasal artery, and anterior facial vein. Sensory innervation to the region is provided by the maxillary division of the trigeminal nerve, primarily through the terminal branches of the infraorbital nerve. Motor innervation is predominantly provided by the buccal branches of the facial nerve.

The alar-facial groove represents a transition zone between the thick, sebaceous, and relatively immobile skin of the nasal ala and the adjacent cheek skin, which is thinner, more mobile, and less sebaceous.

A major consideration was the depth of the defect and the potential for a postoperative scar contraction to produce significant notching of the alar rim, resulting in narrowing of the nostril and dynamic airway collapse during inspiration.

Skin grafting was not considered because placement of a graft over a deep defect without adequate soft tissue volume would result in a noticeable contour depression and secondary contraction of the graft, potentially exerting upward traction on the alar rim and causing alar retraction.

Healing by secondary intention was also ruled out because of the potential for a severe upward distortion of the alar rim, notching, and visible asymmetry.

Due to the full-thickness nature of the defect and the loss of the structural contour of the left alar-facial sulcus, primary closure was not considered feasible because of the risk of alar retraction and distortion of the nasal vestibule. Instead, a local flap (logarithmic spiral flap) was selected to maximize tissue recruitment from adjacent cheek and lateral nasal units while minimizing the generation of excessive tension vectors.

Procedure.

The primary tumor formation was excised under local anesthesia using 2% lidocaine with two drops of adrenaline, with dissection carried down to the underlying perichondrium (Figure 2).

The resulting circular defect was then divided into vertical and horizontal axes, each measuring the same length (X). A tangent of the superior border of the defect was then drawn parallel to the horizontal axis, and the vertical axis was extended superiorly.

The incision is designed to follow a logarithmic curve with a geometrically increasing radius. The incision originates from the inferomedial border of the defect and extends outward along this curve. Three reference points are used to define the trajectory of the incision. The first point is the intersection of the vertical axis with the inferior border of the defect. The second point is located on the tangent at a distance of 1.15X from the vertical axis. The third point is positioned on the prolongation of the vertical axis at a distance of 1.3X from the superior border of the defect. These reference points define the progressive expansion of the incision along the logarithmic curve.

The cutaneous logarithmic spiral flap was carefully incised through the subcutaneous fat plane and subsequently undermined across the lateral nasal wall, extending laterally into the left cheek (Figure 3). After ensuring proper rotation, the flap was advanced inferomedially into the primary defect. The wound was then closed using 5-0 polypropylene interrupted sutures (Figure 4). The histopathological margins were clear. No distortion of the adjacent nasal subunits was observed, and no functional deficit was identified at the 1-month follow-up (Figure 5).

Case report 2.

A defect on a 71-year-old male resulted from a surgical excision of a moderately differentiated squamous cell carcinoma, staged pT1N0MxR0, located in pars lateralis labii inferioris, limbus vermilion-mucosus (Figure 6). The resultant defect was round, measured 10 mm x 15 mm and 4.0 mm in depth, with exposure of the underlying musculus orbicularis oris.

Circular defects of the labium inferius oris represent a significant reconstructive challenge due to its critical role



Figure 1. *Case report 1:* ***Preoperative view:*** *A tumorous formation located in sulcus alaris sinister, ad junctionem parietis lateralis nasi. The lesion is marked and subsequently planned for reconstruction using a logarithmic spiral flap.*



Figure 2. *Case report 1:* ***Intraoperative view: Logarithmic spiral flap:*** *The three reference points define the progressive expansion of the incision along the logarithmic curve.*



Figure 3. *Case report 1:* ***Intraoperative view:*** *The cutaneous logarithmic spiral flap is carefully incised through the subcutaneous fat plane and subsequently undermined across the lateral nasal wall, extending laterally into the left cheek.*



Figure 4. *Case report 1:* ***Intraoperative view:*** *The wound is closed using 5-0 polypropylene interrupted sutures.*



Figure 5. *Case report 1:* ***Status post-surgical reconstruction:*** *1-month postoperative follow-up.*



Figure 6. *Case report 2:* ***Intraoperative view:*** *Status prior to surgical excision of a squamous cell carcinoma located in pars lateralis labii inferioris, limbus vermilion-mucosus.*



Figure 7. *Case report 2:* ***Intraoperative view:*** *V-to-T closure design - the final T-shaped defect.*



Figure 8. *Case report 2:* ***Intraoperative view:*** *The final defect is closed with 5-0 polypropylene single interrupted sutures.*



Figure 9. *Case report 2:* ***Postoperative view:*** *1-month follow-up.*

in maintaining oral competence and articulation, while also requiring preservation of the complex anatomical structures and three-dimensional functional integrity of the inferior labial subunit. Furthermore, the labium inferioris oris constitutes an important aesthetic facial subunit, in which precise restoration of the vermillion and vermilion-cutaneous junction is essential.

The function of the labium inferius oris depends on the coordinated action of the lips musculus orbicularis oris, musculus depressor labii inferioris, musculus depressor anguli oris, and musculus mentalis. Preservation of the vascular supply, including the arteria labialis inferior and accompanying venous drainage, as well as the sensory and motor innervations, represented by the nervus mentalis, a terminal branch of the nervus alveolaris inferios arising from the nervus trigeminus, and the marginal mandibular and buccal branches of the nervus facialis. Injury to these structures may result in ischemic necrosis, profound sensory loss, and dynamic motor asymmetry.

Additionally, the outer lamella (vermillion) border must be carefully aligned, with particular consideration to the adjacent hair-bearing skin to ensure accurate restoration of the patient's beard line.

Mucosal scar tissue may undergo substantial centripetal contracture, generating inward-directed tension forces that progressively reduce the oral aperture and exert tension on the reconstructed labium. When a skin graft is used to reconstruct the defect, its intrinsic secondary contraction may further lead to increased risk for secondary cicatricial ectropion.

The defect measured approximately 30%-35% of the total width of the labium, representing a borderline defect size for primary closure or reconstruction with a local flap.

Primary closure alone would be insufficient, as excessive tissue tension would compromise the oral aperture, resulting in microstomia and impaired oral function. Excessive tissue stretching may also alter the resting tension vectors of the labium, leading to reduced lip competence and subsequent salivary drooling.

This necessitated a more individualized reconstructive approach. We therefore selected a combined flap technique designed to preserve the principles of primary closure. This approach successfully redirected the tension vectors away from the free margin of the labium inferius oris by incorporating an entirely mucosal component, thereby minimizing distortion and achieving a more refined final aesthetic result.

In a standard high-tension primary closure, the resultant force vector is predominantly linear and horizontal, which can result in drawing the labium inward and downward. Incorporation of a mucosal component redirects these tension vectors into the deeper tissues, thereby reducing tension at the free margin. Furthermore, local flaps alone may be susceptible to perfusion compromise due to extensive tissue undermining and narrow flap geometry.

By combining the flap with a primary closure approach while preserving a broad, well-vascularized tissue base, adequate microvascular perfusion can be maintained, thereby reducing the risk of flap ischemia and necrosis.

After careful considerations and with the patient's permission, the team opted for an innovative approach specifically designed for the reconstructive process of this region - V-to-T closure.

Procedure.

Excision of the primary tumor formation was performed under local anesthesia using 2% lidocaine with two drops of adrenaline, with dissection carried down to the underlying musculus orbicularis oris. Subsequently, the initial incision was extended inferiorly toward the mentolabial crease in a V-shaped configuration beneath the semicircular defect. The two incisions followed the principles of wedge excision; however, only the cutaneous component was excised, preserving the underlying muscular layer. The resulting defect resembled an acute isosceles triangle, with its base positioned for alignment with the vermillion border and its apex located approximately 1 mm above the mentolabial crease. Two additional Burrow triangles were subsequently designed laterally on either side of the defect, with their inferior borders strategically aligned with the vermillion border.

The resulting T-shaped secondary defect allowed for direct primary closure (Figure 7). Careful undermining was performed along the inferior aspect of the defect, while preserving the mucosal component and minimizing unnecessary tissue trauma. After confirming precise alignment of the vermilion and vermilion-cutaneous junction, the initial fixating sutures were placed beginning at the cutaneous apex of the initial V-shaped excision. The cutaneous component was closed using 5-0 polypropylene single interrupted suture, followed by careful approximation of the two additional Burrow triangles using the same polypropylene sutures. Following reassessment of the wound and tissue alignment, two additional sutures were placed in the labial mucosa, completing the V-to-T closure (Figure 8). The histopathological margins were clear. No distortion of the vermilion or lateral commissures was observed.

No functional deficit was noted postoperatively at the 1-month follow-up (Figure 9).

Discussion.

The logarithmic spiral flap is a useful option for the reconstruction of small, circular defects involving the lateral nasal wall and nasal ala [5]. Its design allows flexibility in flap orientation according to the patient's individual skin characteristics, tissue laxity, and local tension vectors, making it particularly applicable to defects of the nasal ala and adjacent lateral nasal surface [5].

Compared with the classical spiral flap, which has also been described as a one-stage reconstructive technique for defects of the nasal ala, alar groove, and scalp [6], the logarithmic spiral flap has been reported as a potentially safer alternative [7]. Its incision pattern can be designed to follow natural skin creases and relaxed skin tension lines, potentially minimizing visible scarring, contour distortion, and undesirable tissue traction [7].

When selecting a reconstructive technique for the labium inferius oris, the choice is primarily guided by three factors: the size and depth of the defect, its anatomical location, and the extent of involvement of the cutaneous and mucosal components [8].

For smaller defects involving less than 30% of the total width of the labium, the most commonly used reconstructive technique is wedge excision and primary closure, most often using a V-shaped wedge [9]. Defects involving more than 30% of the

lip generally require more extensive reconstructive techniques, such as the step flap, Karapandzic flap, Gillies Fan flap, or Bernard-Burrow-Webster flap [9]. The principal disadvantages of these techniques include microstomia and distortion of the oral commissures [9]. When reconstructing the labium inferioris oris, priority should be given to less invasive techniques that minimize surgical morbidity, while incorporating innovative modifications to allow the reconstructive approach to be tailored to the individual patient and defect characteristics [9].

For vermillion defects involving up to 50% of the labium inferius oris, reconstructive options include a vermillion mucosal advancement flap based on the arteria labialis inferior or a musculomucosal V-Y advancement flap [8].

The V-to-flying-Y advancement flap is an excellent choice for small defects of labium inferius oris, allowing preservation of the oral aperture and maintenance of the vermillion border [10]. A potential disadvantage is the inclusion of a cutaneous component within the flap, which may result in the introduction of cutaneous tissue into the mucosal surface of the labium inferius oris [10].

To preserve the advantages of the V-to-Y advancement flap while eliminating its cutaneous component, our team developed the V-to-T closure technique, which combines the principles of flap reconstruction with primary closure to achieve a more refined outcome. This technique provides anatomical and functional preservation while optimizing the aesthetic result. It utilizes exclusively mucosal tissue to reconstruct the defect without disrupting the underlying muscular layer, thereby preserving the anatomy and function of the labium while avoiding the need for more extensive reconstructive techniques and their associated disadvantages [11,12].

Conclusion.

1. The cutaneous logarithmic spiral flap represents a useful one-stage option for reconstruction of defects involving the lateral nasal wall and nasal ala. Its curved geometric design facilitates flap rotation while distributing tension vectors along the length of the flap. As the flap rotates, its progressive widening allows tissue recruitment with reduced closure tension, thereby minimizing traction on the surrounding nasal structures.

The curvature of the logarithmic spiral mimics the natural anatomical structures, such as the alar groove, which makes it effective for regional three-dimensional contour restoration. The resulting scar can be positioned along existing aesthetic creases, allowing the reconstructed area to integrate with the surrounding facial anatomy.

2. Primary circular defects of the labium inferius oris following surgical intervention represent a reconstructive challenge for the dermatosurgeon due to the anatomical complexity and three-layer structure of the labium, as well as the need to achieve an optimal functional and aesthetic outcome.

The V-to-T closure is a novel and innovative reconstructive technique that combines the advantages of a V-to-Y advancement flap while avoiding its potential aesthetic disadvantages. At the same time, it follows the principles of primary closure, maintaining a simple surgical approach and allowing component-to-component tissue approximation.

Funding was not received.

The authors declare no conflict of interest.

Ethics approval statement is not required.

Written informed consent for publication of their details was obtained from the patient.

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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