

GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 11 (356) ноябрь 2024

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 ВИНТИ 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 ВИНТИ 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. Корректур авторам не высылаются, 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 computer-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 საქურაღებოლ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დაიცვათ 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 შედეგის 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 ფხიხლებში 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.

Tamar Shengelia, Bezhan Tsinamdzgvrishvili, Kakha Nadaraia, Liluashvili Konstantine, Talakvadze Tamar. PROGNOSTIC SIGNIFICANCE OF SST2 IN HEART FAILURE WITH REDUCED EJECTION FRACTION, A BIOMARKER OF CARDIOVASCULAR MORTALITY AND REHOSPITALIZATION.....	6-12
N. Tavberidze, N. Sharashidze, T. Bochorishvili. BIOLOGICAL TREATMENTS AND CARDIOVASCULAR CHANGES IN THE GEORGIAN PATIENT WITH RHEUMATOID ARTHRITIS.....	13-17
G. Burkadze, N. Kikalishvili, T. Muzashvili. APPLICATION OF ULTRASOUND TECHNOLOGY IN THE PROCESSING OF HISTOLOGICAL MATERIAL.....	18-21
Daniel Godoy-Monzon, Patricio Telesca, Jose Manuel Pascual Espinosa. SHORT TERM COMPARISON OF CLINIC RADIOGRAPHIC RESULTS OF TOTAL HIP REPLACEMENT WITH SHORT FEMORAL STEM IN OBESE AND NON-OBESE YOUNG PATIENTS. SINGLE CENTER PROSPECTIVE PILOT STUDY.....	22-27
Zhassulan O. Kozhakhmetov, Ersin T. Sabitov, Yerlan A. Salmenbaev, Merey N. Imanbaev, Tolegen A. Toleutayev, Yernur M, Kazymov, Aldiyar E. Masalov. IMPROVEMENT OF LOWER LIMB AMPUTATION PROCEDURE IN PATIENTS WITH CRITICAL LOWER LIMB ISCHAEMIA.....	28-38
Badr Alharbi. A CASE REPORT OF DISCONTINUED SPLENOGONADAL FUSION MASQUERADED AS PARATESTICULAR TUMOR.....	39-41
Vitalii Baltian, Elina Manzhali (Christian), Lesia Volnova, Yuriy Rohalya, Borysova Olesia. STRATEGIES FOR IMPROVING PSYCHOLOGICAL COMPETENCE IN PHYSICAL REHABILITATION.....	42-49
Varduhi Suren Hovsepyan, Gohar Mkrtich Arajyan, Abdulwahabb Al-Chachani, Gohar Khristafor Musheghyan, John Sarkissian, Ivan Georgi Gabrielyan. THE RATIO OF EXCITATORY AND INHIBITORY SYNAPTIC PROCESSES IN NEURONS OF THE ENTORHINAL CORTEX OF THE BRAIN, ACTIVATED BY BASOLATERAL AMYGDALA ON THE MODEL OF PARKINSON'S DISEASE, UNDER CONDITIONS OF PROTECTION BY HYDROCORTISONE.....	50-58
Hisham I. Wali, Sawsan H. Al-Jubori. ANTIMICROBIAL ACTION OF A MODIFIED UNIVERSAL ADHESIVE: AN IN VITRO STUDY.....	59-65
Assiya Turgambaeva, Ainagul Tulegenova, Serik Ibraev, Stukas Rimantas, Aigerim Alzhanova, Dinara Ospanova, Maiya Toleugali. SATISFACTION WITH THE QUALITY AND AVAILABILITY OF MEDICAL SERVICES IN RURAL AREAS OF KAZAKHSTAN.....	66-73
Skakodub A.A, Osminina M.K, Geppe N.A, Admakin O.I, Kozlitina Y.A, Goryaynova A.V. ORAL MANIFESTATIONS IN JUVENILE SCLERODERMA: CLINICAL PRESENTATIONS AND HISTOPATHOLOGICAL CHARACTERISTICS.....	74-81
Jing Liu. PROGRESSES IN PERSONALIZED NURSING ON THE PERIOPERATIVE PERIOD OF HEPATOBILIARY.....	82-83
Ali K. Obeyes, Huda A. Hameed, Ali I. Mohammed Salih. INCUBATION THE BOTULINUM TOXIN-B IN THE ZYGOMITICUS OF THE RAT, FOLLOWED BY EVALUATION IT'S EFFECT HISTOLOGICALLY ON THE ZYGOMATIC BONE.....	84-88
Tchernev G, Kordeva S, Kirilova H, Broshtilova V, Patterson JW. POLYPHARMACY AND CANCER: A NEW VISION FOR SKIN CANCER PATHOGENESIS PHOTOTOXICITY AND PHOTOCARCINOGENICITY DUE TO NITROSAMINE CONTAMINATION DURING TELMISARTAN/ TAMSULOSIN INTAKE.....	89-93
Gem Muçolli, Fidan Nikç, Genit Muçolli. INTRAORAL SCANNERS AND CONVENTIONAL IMPRESSIONS: A LITERATURE REVIEW.....	94-99
Farah Saleh Abdul-Reda, Mohammed AH Jabarah AL-Zobaigy. EVALUATION OF VITAMIN D LEVEL IN SERUM OF PATIENTS WITH VITILIGO.....	100-102
Li-Juan Ru, Qian-Qian Yao, Ming Li. APPLICATION OF EARLY RISK FACTOR WARNING MODEL OF ACUTE KIDNEY INJURY COMBINED WITH CONTINUOUS RENAL REPLACEMENT THERAPY IN PATIENTS WITH SEVERE ACUTE PANCREATITIS.....	103-106
Mammadov F.Y, Safarov M.A, Mammadov K.J, Alkishiev K.S. PREVALENCE AND DISTRIBUTION OF ODONTOGENIC CYSTS: A 12-YEAR RETROSPECTIVE STUDY.....	107-111
Qiu-Lin Chen, Nie-Hong Zou, Ming-Li Zhu. TRIPLE THERAPY COMBINED WITH ACCELERATED RECOVERY STRATEGY CAN IMPROVE THE QUALITY OF LIFE OF ELDERLY PATIENTS WITH MECHANICAL VENTILATION.....	112-117

Maria Nikuradze, Zurab Artmeladze, Ann Margvelashvili, Vladimer Margvelashvili, Manana Kalandadze. IMPORTANCE AND URGENCY OF TREATMENT AND PREVENTION STRATEGIES OF COMPLICATIONS IN ORTHODONTIC PATIENTS - LITERATURE REVIEW.....	118-123
Yevgeniya Li, Yerzhan Zhunussov, Bakhyt Kosherova, Gheorghe Placinta, Bibigul Tulegenova. CLINICAL AND LABORATORY PREDICTORS OF ADVERSE OUTCOME WITH SEVERE COVID-19 IN COMORBID PATIENTS OF THE KARAGANDA REGION (REPUBLIC OF KAZAKHSTAN).....	124-129
Fidan Nikç, Gem Muçolli, Genit Muçolli. REGENERATIVE MATERIALS-THEIR INDICATIONS AND USE IN IMPLANTOLOGY: A LITERATURE REVIEW.....	130-135
Kinda M. Al-Tae, Luay A. Al-Helaly. HYDROGEN SULFIDE AND CYSTATHIONINE Γ -LYASE LEVELS FOR PATIENTS WITH PARKINSON'S DISEASE.....	136-140
Hui-Xiu Luo, Shu Zhu, Jing-Chuan Wang. CLINICAL EFFICACY OF DIFFERENT SURGICAL METHODS IN CONGENITAL PREAURICULAR FISTULA SURGERY.....	141-143
Melano Shavgulidze, Neli Maglakelidze, Nino Rogava, Khatuna Bezhanishvili, Nargiz Nachkebia. LONG-LASTING EFFECTS OF EARLY POSTNATAL DYSFUNCTION OF THE BRAIN MUSCARINIC CHOLINERGIC SYSTEM ON LEARNING AND MEMORY AND ADULT HIPPOCAMPAL NEUROGENESIS.....	144-151
Jon Kotori, Rrezarta Muqa, Merita Kotori. ORAL HEALTH OF CHILDREN IN MY COUNTRY.....	152-155
Zahraa Alsarraf, Ali Yousif Nori, Amjad Ibrahim Oraibi, Hany Akeel Al_hussaniy, Alhasan Ali Jabbar. BIBR1591 INDUCES APOPTOSIS IN BREAST CANCER CELL LINE AND INCREASES EXPRESSION OF DAPK1, AND NR4A3.....	156-160
María Jackeline Cuellar Florencio, Marcos Julio Saavedra Muñoz, Yuri Anselmo Maita Cruz, Santa Dolores Torres Álvarez, María Ysabel Casanova Rubio, Eduardo Frank Loli Prudencio, Walter Gomez-Gonzales. VIRTUAL ENVIRONMENTS AND HUMAN ANATOMY LEARNING ACHIEVEMENTS IN UNIVERSITY STUDENTS.....	161-164
S. Shalamberidze, N. Chikhladze. COST-EFFECTIVENESS OF TREATMENT OF RHEUMATOID ARTHRITIS WITH BIOLOGICAL DRUGS IN GEORGIA.....	165-170
Nursultan K. Andasbekov, Nazarbek B. Omarov, Sagit B. Imangazinov, Yernar K. Kairkhanov, Olga G. Tashtemirova, Rustem S. Kazangapov, Saule S. Imangazinova, Aldiyar E. Masalov. APPLICATION OF IMPROVED AUTODERMOPLASTY TECHNIQUE IN GRANULATING WOUNDS TREATMENT.....	171-175

CLINICAL EFFICACY OF DIFFERENT SURGICAL METHODS IN CONGENITAL PREAURICULAR FISTULA SURGERY

Hui-Xiu Luo, Shu Zhu, Jing-Chuan Wang.

Department of Otolaryngology, Jiaozhou Central Hospital of Qingdao, Qingdao, 266603 Shandong, China.

Abstract.

Objective: To evaluate the clinical efficacy of different surgical methods in congenital preauricular fistula surgery.

Methods: 60 patients with congenital preauricular fistula were selected and randomly divided into a microscope group of 30 cases and a macroscopic group of 30 cases. The microscope team used the fistula separation method to perform surgery along with the fistula opening. In the macroscopic group, en bloc resection was performed using the helix crus cartilage, superficial temporalis fascia and parotid capsule as boundaries. Analyze the efficacy of the two surgical methods.

Results: After more than one year of follow-up, 29 of the 30 cases in the macroscopic group were cured and 1 case improved, with wound dehiscence and scar healing occurring. All cases in the microscopy group were cured. There was no recurrence after surgery in both groups. After the chi-square test, the results showed that there was no statistically significant difference between the two groups. The operation time in the naked eye group was shorter, but the postoperative incision healing in the microscopic group was more beautiful and scars were less obvious.

Conclusion: Both macroscopic en bloc resection and microscopic fistula separation can effectively cure preauricular fistula. However, the operation time in the naked eye group was shorter, while the postoperative incisions in the microscopic group were more beautiful, and the scars were less obvious.

Key words. Preauricular fistula, temporalis fascia, helix crus cartilage, surgery.

Introduction.

Congenital preauricular fistula (CPF) is a common congenital malformation characterized by a small opening or pit located near the anterior margin of the ear, typically at the root of the helix or in front of the tragus. This condition arises from developmental anomalies during the embryonic formation of the ear, specifically due to the failure of fusion of the primitive tubercles that form the pinna. The incidence of CPF varies, with estimates ranging from 0.1% to 10%, and it is more prevalent among certain populations, particularly Asians and Africans. Unilateral cases are more common, while bilateral occurrences are often inherited and linked to autosomal dominant patterns with reduced penetrance, associated with specific chromosomal regions [1].

The clinical presentation of CPF can vary significantly. Many individuals remain asymptomatic and do not require treatment. However, when the fistula becomes infected, it can lead to recurrent discharge, pain, swelling, and abscess formation. The most common pathogens involved in infections of preauricular sinuses include *Staphylococcus aureus* and various other bacteria. Surgical intervention is typically recommended for symptomatic cases, particularly those with recurrent infections. The primary goal of surgery is the complete excision of the

fistula and any associated sinus tract to prevent recurrence [1].

Congenital preauricular fistula is a prevalent congenital malformation of the external ear. It arises from inadequate fusion of the six hillock-like nodules derived from the first and second branchial arches during the embryonic period, or from incomplete sealing of the first branchial cleft. Infections of preauricular fistulas are prone to recurrence and typically necessitate surgical intervention. Surgical approaches include resection to separate the fistula tract and its branches. However, this method carries a risk of recurrence and may lead to residual lesions when the fistula is excised using direct visualization. Some studies have indicated that microscopic resection of preauricular fistulas can decrease the recurrence rate. Recently, en bloc resection has been proposed as a treatment for preauricular fistulas, demonstrating promising outcomes.

Based on the above methods, our department conducted a study on 60 patients with congenital preauricular fistula admitted from May 2022 to May 2023. After the infection was controlled, surgery was performed using peritubular separation method under the microscope (microscopic group) and en bloc resection method under the naked eye (macroscopic group). The following is an analysis of the surgical effects, operation time, and aesthetics of incision healing of these two surgical methods.

Materials and Methods.

Clinical data:

This study included 60 patients with congenital preauricular fistula in the non-infectious period who were treated from May 2022 to May 2023. Patients were randomly divided into microscopic group and naked eye group.

Surgical methods:

Sixty patients underwent surgery under local infiltration anesthesia or general anesthesia. The patients under general anesthesia were all children. In the gross group, en bloc resection was used. The operation first explores the location and direction of the fistula and makes a fusiform incision along the fistula opening and scar. If necessary, Y-shaped and double-edged incisions are made to incise the skin and subcutaneous tissue. The tissue flap containing the fistula and scar is then separated deep to the superficial layer of the temporalis fascia and down to the upper pole of the parotid sheath. If the fistula is connected to the auricle cartilage, the auricle perichondrium and part of the cartilage at the connection point need to be removed, and finally the entire separated tissue must be removed completely. For direct suturing of the incision, if the incision tension is high, the subcutaneous tissue at the incision edge should be separated, and the skin should be released and then interrupted mattress sutures should be performed, taking care not to leave a dead space. The microscopy team performed the surgery under a Leica microscope and used the peritubular dissection method.

Table 1. Comparison of surgical efficacy between the microscope group and the naked eye group in 60 patients with preauricular fistula.

Group	N	Recovery	Effective	Ineffective	Cure rate
Naked eye group	30	29	1	0	96.7%
Macroscopic group	30	30	0	0	100%

The surgery also first explores the location and direction of the fistula, makes small fusiform incisions around the fistula, separates the fistula and its branches, and removes them. If the fistula is connected to the auricle cartilage, it is necessary to remove the perichondrium and part of the cartilage connected to the fistula, thoroughly clean the squamous epithelioid tissue in the surgical cavity, and finally suture the subcutaneous tissue and skin in layers. The local compression bandage was applied for 1 day after the operation, and the sutures were removed 7 days after the operation.

Criteria for judging efficacy:

Recovery: the incision heals in the first stage, and there is no recurrence for more than 1 year after the operation; effective: the incision dehisces, and the local scar tissue heals after dressing change; ineffective: the fistula remains and recurs within 1 year after the operation. After Chi-square test, the P value was 0.093, and there was no statistically significant difference in the treatment effect between the two groups (See table 1).

Statistical methods:

This study used SPSS 17.0 statistical software for statistical analysis. Count data were analyzed using the chi-square test, and $P < 0.05$ was considered statistically significant.

Results.

The microscopy group included 30 cases, 13 males and 17 females, with an age range of 3 to 70 years, with an average age of 40.5 years. Naked eye group included 30 cases, 18 males and 12 females, with an age range of 2 to 73 years. The average age is 50.4 years. All cases had at least one history of infection, including 45 unilateral patients and 15 bilateral patients. 50 cases had undergone abscess incision and drainage. The postoperative follow-up was more than 1 year. There were 30 cases in the macroscopic group, of which 29 cases were cured and 1 case improved; all cases in the microscopic group were cured. No recurrence was found after operation in both groups. The operation time of the naked eye group was about 20-30 minutes, and the operation time of the microscope group was about 40-50 minutes. The operation time of the microscope group was significantly longer than that of the naked eye group. However, the surgical incisions in the naked eye group were significantly longer than those in the microscopic group, and the surgical scars were also more obvious than those in the microscopic group.

Discussion.

Congenital preauricular fistula, often referred to as a preauricular sinus, is characterized by a small opening located near the ear, typically at the root of the helix. This condition is generally asymptomatic and does not necessitate treatment unless complications arise, such as infection. When an infection occurs, it can lead to significant issues, including recurrent

infections and potential scarring if not managed properly. The most common pathogens associated with infections in preauricular fistulas include *Staphylococcus aureus* and *Streptococcus viridans*, among others [2,3] the anatomical structure of a preauricular fistula resembles a blind tube, which can extend into the surrounding tissues. This sinus can become infected, leading to symptoms such as pain, swelling, and discharge. In cases of recurrent infections, surgical excision of the fistula is often recommended to prevent further complications [4,5]. The surgical approach typically involves excising the entire sinus tract, which may include surrounding tissue to ensure complete removal and minimize the risk of recurrence [6]. The peritubular separation method under the microscope has less surgical damage, can preserve the tissue around the fistula to the maximum extent, avoid the formation of large and deep cavities locally after surgery, and reduce postoperative scar formation and the tension of incision sutures. The surface of the fistula lumen is stratified squamous epithelium, which is easy to distinguish from surrounding tissue under a microscope, thus preventing postoperative recurrence.

This study showed that in the naked eye group, there were 30 cases, 29 were cured and 1 improved; in the microscopic group, all were cured. There was no recurrence after surgery in both groups, and the difference in treatment effect was not statistically significant. Among them, one case of improvement in the naked eye group was due to the large scope of the wound during the operation, the dehiscence of the wound after the operation, and the scar healing after dressing change.

The results showed that both the en bloc resection method in the macroscopic group and the pericanal separation method in the microscopic group could effectively cure preauricular fistula. Under the naked eye, the en bloc resection method has a longer incision and more tissue to be removed. The scar of the local incision after surgery is obvious and the healing port is longer, but the operation time is shorter. The peritubular separation method under the microscope has shorter incisions, less tissue to be removed, smaller postoperative local incisions, less obvious scar healing, and is more beautiful; however, due to the delicate operation under the microscope, the operation time is relatively long.

Conclusion.

In summary, while congenital preauricular fistulas are often benign and asymptomatic, they can present challenges when infected, necessitating careful management and, in some cases, surgical intervention to prevent complications. There is no significant difference in the postoperative recurrence rate between en bloc resection of congenital preauricular fistulae and microscopic fistula separation in the non-infectious period. En bloc resection takes a shorter operation time, but the postoperative scar is obvious; microscopic fistula separation takes a longer operation time, the postoperative scar is not obvious and has better aesthetic results. The surgical method can be selected flexibly according to the patient's specific situation and aesthetic requirements.

Consent for publication.

Not applicable.

Availability of data and material.

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests.

The authors declare that this research was conducted in the absence of any business or financial relationships that could be construed as potential conflicts of interest.

Acknowledgements.

Not application.

REFERENCES

1. Das C, Khaowas A. Pre-auricular Sinus with Post-auricular Extension: An Uncommon Variant. *Indian J Otolaryngol Head Neck Surg.* 2019;71:1511-1514.
2. Tian H, Zhong C. Postoperation of preauricular fistula cellulitis caused by methicillin-resistant staphylococcus aureus infection. *J Otol.* 2018;13:111-113.
3. Vukadin M, Savic D, Milickovic M, et al. Congenital prepubic urachal-cutaneous fistula. *Turk J Urol.* 2019;45:474-476.
4. Vinothkumar SP, Mandava SS, Mallick A, et al. A large type I right pulmonary artery to left atrium fistula: underwent successful percutaneous device closure with duct occluder-a rare case report. *Egypt Heart J.* 2024;76:24.
5. Biswas S, Ghosh D, Das S. Congenital urethrocutaneous fistula-our experience with nine cases. *Indian J Surg.* 2014;76:156-8.
6. Yadav S, Kaur T, Singla V. Rhomboid Flap Reconstruction for Type 1 Postauricular Variant of Preauricular Sinus. *Indian J Otolaryngol Head Neck Surg.* 2023;75:393-395.