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Медицинские новости Грузии
საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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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.

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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. რენტგენოგრაფიების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შედეგების 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.

Yu.V. Dumanskyi, A.V. Bondar, A.A. Patskov, Ye.A. Stolyarchuk. ARM-ICG IN THE PREVENTION OF LYMPHEDEMA AFTER SURGICAL TREATMENT OF BREAST CANCER.....	6-9
Chuan-Min Liu, Jia-Shu Guo. EFFICACY ANALYSIS OF SHENFU INJECTION COMBINED WITH DAPAGLIFLOZIN IN THE TREATMENT OF SEPTIC HEART FAILURE.....	10-15
Lilya Parseghyan, Anna Darbinyan, Sona Poghosyan, Armenuhi Moghrovyan, Armen Voskanyan. DOSE-DEPENDENT PROTECTIVE EFFECTS OF TAURINE IN EXPERIMENTAL ENVENOMATION BY THE BLUNT-NOSED VIPER (MACROVIPERA LEBETINA OBTUSA).....	16-23
Yusup A. Bakaev, Mariya E. Makarova, Zurab S. Khabadze, Nikita A. Dolzhikov, Gor G. Avetisian, Dzhandet F. Rasulova, Anastasya A. Ivina, Ekaterina E. Starodubtseva, Daria A. Pervozvanova, Alisa A. Vavilova, Khalid Yu. Halituev, Oleg S. Mordanov, Anastasiya V. Mordanova. CLOSED HEALING OF THE PALATE MUCOSA: INDEX ASSESSMENT AND CLINICAL SIGNIFICANCE.....	24-29
Mereke Alaidarova, Assem Kazangapova, Ulbossyn Saltabaeva, Gulnar Zhaksylykova, Raushan Baigenzheyeva, Gani Uakkazy, Gudym Yelena, Marlan Basharlanova, Amangali Akanov, Joseph Almazan. NURSES' PERCEIVED PROFESSIONAL PERFORMANCE IN PRIMARY HEALTH CARE: A NATIONAL STUDY OF ORGANIZATIONAL AND WORKFORCE DETERMINANTS.....	30-37
Alaa Mohammed Mahmoud Qasem, Abdelgadir Elamin, Marwan Ismail, Mavlyanova Zilola Farkhadovna, Ahmed L. Osman. EVALUATION OF SERUM GALECTIN-3 LEVELS IN PATIENTS WITH HYPOTHYROIDISM AND HYPERTHYROIDISM IN AJMAN, UNITED ARAB EMIRATES.....	38-44
George Tchumburidze, Lukhum Tchanturia, Irakli Gogokhia. ADVANTAGES OF COMPUTER-NAVIGATED KNEE REPLACEMENT: IMPLICATIONS FOR BIOMECHANICS, PAIN MANAGEMENT, AND RECOVERY.....	45-49
Omar Abdul Jabbar Abdul Qader. GENOTOXIC AND MOLECULAR STRESS EFFECTS OF DENTAL RESIN MONOMERS ON ORAL EPITHELIAL CELLS.....	50-55
Sinan Arllati, Kreshnik Syka. CLINICAL MANAGEMENT OF IMMEDIATE IMPLANT PLACEMENT AND LOADING IN THE ESTHETIC ZONE WITH FINAL PROSTHETIC RESTORATION.....	56-60
Elina (Christian) Manzhali, Yuri Dekhtiar, Valentyn Bannikov, Galyna Girnyk, Ivan Bavykin. ARTIFICIAL INTELLIGENCE IN CLINICAL DIAGNOSTICS FOR EARLY DETECTION OF CHRONIC DISEASES: A SYSTEMATIC REVIEW.....	61-73
Yusup A. Bakaev, Mariya E. Makarova, Zurab S. Khabadze, Nikita A. Dolzhikov, Gor G. Avetisian, Dzhandet F. Rasulova, Anastasya A. Ivina, Ekaterina E. Starodubtseva, Daria A. Pervozvanova, Alisa A. Vavilova, Khalid Yu. Halituev, Nadejda A. Khachatryan, Oleg S. Mordanov. CLINICAL APPLICATION OF THE PALATAL MUCOSAL OPEN HEALING INDEX FOR EVALUATION OF PALATAL DONOR SITE HEALING.....	74-78
Raushan Aibek, Mairash Baimuratova, Zamanbek Sabanbayev, Alma-Gul Rakhimovna Ryskulova, Mariya Laktionova. EPIDEMIOLOGICAL TRENDS OF SALMONELLOSIS IN THE REPUBLIC OF KAZAKHSTAN: ANALYSIS OF NATIONAL DATA (2013–2024).....	79-90
Raghad Albarrak, Ibtihaj Abdulmohsen Almutairi, Shatha Shia Alshumaym, Haifa Saleh Alfouzan, Sadeem Sulaiman Alsenidi, Joud Muneer Almotairi, Lamees Fahad Alharbi, Tuqa Rashed Alyahyawi, Rawan Mushwah Alharbi, Ghaida Awadh Alfanoud, Omar Saleh Almisnid. THE PATTERN AND INFLUENCING FACTORS OF OPIOID-PRESCRIBING BEHAVIOR AMONG EMERGENCY PHYSICIANS IN THE QASSIM REGION: A CROSS-SECTIONAL STUDY.....	91-95
Shalva Skhirtladze, George Petriashvili, Nana Nikolaishvili, Ana Apulava. FOLDABLE CAPSULAR VITREOUS BODY IMPLANTATION IN A PRE-PHTHISICAL EYE: A PRELIMINARY SHORT-TERM CASE REPORT.....	96-99
Rehab K. Mohammed, Nuha Mohammed. ENHANCEMENT OF KNOWLEDGE ABOUT DASH DIET AMONG HYPERTENSIVE PATIENTS: DIETARY EDUCATIONAL INTERVENTION.....	100-103
Mohammed Aga, Mohammad Hendawi, Safa Awad, Fatima Aljenaid, Yazid Aldirawi, Hamza Shriedah, Salih Ibrahim, Zarnain Kazi, Rafea Jreidi, Arkan Sam Sayed-Noor. CHARACTERISTICS, CLINICAL PRESENTATION AND MANAGEMENT OF PATIENTS WITH SNAKE BITES TREATED AT AL-DHAID HOSPITAL IN UNITED ARAB EMIRATES: TWELVE YEARS' EXPERIENCE.....	104-109
David Gvarjaladze, Nunu Metreveli. QPA AND HIV-INTEGRASE APTAMER IN THE PRESENCE OF LEAD IONS.....	110-115
Zhao Luting, Fang Qilin, Zhang Haoxu, Mo Pengli, Yu Xiaoxia. OBSERVATION ON THE CURATIVE EFFECT OF FACIAL PNF TECHNOLOGY COMBINED WITH MIRROR THERAPY IN THE TREATMENT OF PERIPHERAL FACIAL PARALYSIS.....	116-122

Ahmed Mohammed Ibrahim, Arwa Riyadh Khalil Albarhawi, Samar Saleh Saadi. ASSOCIATION PROPERTIES OF COMPLETE BLOOD COUNT FOR LEVELS OF THYROID STIMULATING HORMONE.....	123-129
Tuleubayev B.E, Makhatov B.K, Vinokurov V.A, Kamyshanskiy Ye.K, Kossilova Ye.Y. OSTEOREGENERATIVE POTENTIAL AND REMODELING OF A COMPOSITE BASED ON NANOFIBRILLATED CELLULOSE, XENOGRAFT, AND BUTVAR-PHENOLIC ADHESIVE: A HISTOLOGICAL STUDY UNDER NORMAL AND INFECTED BONE WOUND CONDITIONS.....	130-143
Zhanat Toxanbayeva, Nyshanbay Konash, Muhabbat Urunova, Zhamila Dustanova, Sveta Nurbayeva, Sabina Seidaliyeva. GC-MS PROFILING OF THE LIPOPHILIC FRACTION AND ACUTE SAFETY ASSESSMENT OF THE AQUEOUS EXTRACT OF <i>SCUTELLARIASUBCAESPITOSA</i>	144-152
Karen Martik Hambarzumyan, Rafael Levon Manvelyan. CHANGES IN LOWER LIMB FUNCTIONAL ACTIVITY AND TREATMENT OUTCOMES IN PATIENTS WITH PERIPHERAL ARTERIAL DISEASE FOLLOWING THE APPLICATION OF STANDARD AND MODIFIED TREATMENT PROTOCOLS. A COMPARATIVEANALYSIS.....	153-159
Asmaa Abdulrazaq Al-Sanjary. SALINE INFUSION SONOGRAPHY IN EVALUATION OF SUBFERTILE WOMEN AND ITS EFFECT ON REPRODUCTIVE OUTCOME.....	160-166
Nino Buadze, Maia Turmanidze, Paata Imnadze, Nata Kazakashvili. IMPACT OF THE COVID-19 PANDEMIC ON THE SURVEILLANCE OF INFECTIOUS DISEASES: ASSESSMENT OF THE LEPTOSPIROSIS SURVEILLANCE SYSTEM IN THE ADJARA REGION (2020–2024).....	167-174
Nurlan Urazbayev, Ruslan Badyrov, Nurkassi Abatov, Alyona Lavrinenko, Yevgeniy Kamyshanskiy, Ilya Azizov. EXPERIMENTAL EVALUATION OF TISSUE RESPONSE TO IMPLANT MATERIALS UNDER <i>ESCHERICHIA COLI</i> CONTAMINATION.....	175-184
Abdulaev M-T.R, Kachikaeva L.T, Murtuzaliev Z.R, Khokhlova M.S, Badalian M.A, Tskaev T.A, Abdulkhalikov A.E, Arutiunian N.A, Rustamov M.T, Yakhyaev R.S, Chuenkova T.S, Zolfaghari Yousef. THE ROLE OF SURGICAL INTERVENTION IN THE MULTIMODAL TREATMENT OF BREAST CANCER IN OLDER WOMEN.....	185-187
Ahmed Abdulraheem Ibrahim Dahy, Mohanad Luay Jawhar, Baraa Ahmed Saeed, Noor Yahya Muneer, Anwer Jaber Faisal. IMPACT OF GINGER SUPPLEMENTATION ON BLOOD PRESSURE AND GLUCOSE LEVELS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AND CARDIOVASCULAR DISEASE.....	188-192
Marwan Ismail, Mutaz Ibrahim Hassan, Mosab Khalid, Jaborova Mehroba Salomudinovna, Assiya Gherdaoui, Majid Alnaimi, Raghda Altamimi, Mahir Khalil Jallo, Iriskulov Bakhtiyar Uktamovich, Shukurov Firuz Abdufattoevich, Shawgi A. Elsiddig, Ramprasad Muthukrishnan, Kandakurthi Praveen Kumar, Elryah I Ali, Asaad Babker, Abdelgadir Elamin, Srija Manimaran. DIFFERENTIAL ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY AND GLYCEMIC CONTROL ACROSS BODY MASS INDEX IN TYPE 2 DIABETES: A COMPARATIVE ANALYSIS OF HBA1C AND FRUCTOSAMINE.....	193-199
Ketevan Tsanova, Malvina Javakhadze, Ekaterine Tcholdadze, Lia Trapaidze, Tamar Sokolova, Gvantsa Kvariani. SEVERE TOXIC EPIDERMAL NECROLYSIS COMPLICATED BY ACUTE KIDNEY INJURY: DIAGNOSTIC AND THERAPEUTIC CONSIDERATIONS.....	200-204
Torgyn Ibrayeva, Assel Iskakova, Togzhan Algazina, Gulnar Batpenova, Dinara Azanbayeva, Gulnaz Tourir, Issa Emir Ardakuly, Aizhan Shakhanova. ECZEMA AND TRANSEPIDERMAL MOISTURE LOSS: A SYSTEMATIC REVIEW AND META-ANALYSIS (REVIEW).....	205-212
Kalashnik-Vakulenko Yu, Kostrovskiy O, Aleksandruk N, Makaruk O, Kudriavtseva T.O, Lytovska O, Leliuk O, Alekseeva V. ANATOMICAL FEATURES OF THE CAROTID ARTERIES, OPHTHALMIC NERVES, MANDIBULAR NERVE AND EXTRAOCULAR ARTERY BASED ON MULTISLICE COMPUTED TOMOGRAPHY (MSCT) DATA.....	213-218
Rigvava Sophio, Kusradze Ia, Karumidze Natia, Kharebava Shorena, Tchgonia Irina, Tatrishvili Nino, Goderdzishvili Marina. PREVALENCE, PHYLOGENETIC DIVERSITY, AND ANTIMICROBIAL RESISTANCE OF UROPATHOGENIC <i>ESCHERICHIA COLI</i> IN GEORGIA.....	219-227
Babchuk O.G, Gulbs O.A, Lantukh I.V, Kobets O.V, Ponomarenko V.V, Lytvynova I.L, Lukashevych N.M, Minin M.O, Rogozhan P.Y, Pustova N.O. PECULIARITIES OF THE DEVELOPMENT OF THE PSYCHOLOGICAL STATE OF MEDICAL STUDENTS AND LAW ENFORCEMENT UNIVERSITYCADETS.....	228-233
Kirill I. Seurko, Roman A. Sokolov, Alexandr N. Kosenkov, Elena V. Stolarchuk, Kseniya I. Seurko, Elena N. Belykh, Mikhail I. Bokarev, Magomed E. Shakhbanov, Alexandr I. Mamykin, Andrew I. Demyanov, Omari V. Kanadashvili. LEFT HEMICOLECTOMY IN PATIENTS WITH COLORECTAL CANCER: SURGICAL VIEW ON INFERIOR MESENTERIC ARTERY ANATOMYVARIABILITY.....	234-242
Pere Sanz-Gallen, Inmaculada Herrera-Mozo, Beatriz Calvo-Cerrada, Albert Sanz-Ribas, Gabriel Martí-Amengual. OCCUPATIONAL ALLERGIC DERMATITIS IN METALWORKERS.....	243-249
Erkin Pekmezci, Songül Kılıç, Hakan Sevinç, Murat Türkoğlu. THE EFFECTS OF <i>ROSMARINUS OFFICINALIS</i> ON VEGF AND IL-1 α GENE EXPRESSIONS IN HACAT CELLS: UNRAVELING ITS MECHANISM OF ACTION IN WOUND HEALING AND HAIR LOSS.....	250-254

FOLDABLE CAPSULAR VITREOUS BODY IMPLANTATION IN A PRE-PHTHISICAL EYE: A PRELIMINARY SHORT-TERM CASE REPORT

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Abstract.

Objective: To report the surgical technique and short-term anatomical outcomes of foldable capsular vitreous body (FCVB) implantation in a pre-phthisical eye with chronic retinal and uveal detachment.

Methods: A 35-year-old male with a blind eye secondary to long-standing total retinal detachment was evaluated. The eye had no light perception, sensory exotropia, and severe hypotony. Although the patient did not report significant ocular pain, progressive hypotony, uveal detachment, and early pre-phthisical changes raised concern for future ocular atrophy and cosmetic deformity. A 23-gauge chandelier-assisted pars plana vitrectomy with 360° retinectomy was performed, followed by implantation of a foldable capsular vitreous body filled with silicone oil.

Results: At six-month follow-up, B-scan ultrasonography and ultrasound biomicroscopy demonstrated reattachment of the choroid and ciliary body. Intraocular pressure stabilized between 9–10 mmHg. The FCVB remained well positioned, with no evidence of inflammation, extrusion, or device-related complications.

Conclusion: This preliminary short-term report suggests that FCVB implantation may serve as a globe-preserving option in selected pre-phthisical eyes lacking visual potential. Longer follow-up and larger studies are required to assess long-term safety and durability.

Key words. Foldable capsular vitreous body, pre-phthisical eye, chronic retinal, uveal detachment.

Introduction.

Pre-phthisical eye represents a transitional clinical state characterized by chronic hypotony, retinal detachment, uveal dysfunction, and progressive risk of ocular atrophy. Although the term “pre-phthisical” is descriptive rather than strictly defined, it is commonly used to denote eyes with sustained hypotony (typically <8–10 mmHg), early scleral remodeling, and ciliary body dysfunction that precede irreversible phthisis bulbi [1-5].

The primary therapeutic goals in such eyes include preservation of globe anatomy, stabilization of intraocular pressure (IOP), prevention of pain, and maintenance of acceptable cosmesis. Visual recovery is rarely achievable. Traditional management options include observation, prosthetic shell fitting, long-term silicone oil tamponade, cyclodestructive procedures, or enucleation. Each approach has limitations. Observation or prosthetic fitting may be appropriate in painless eyes but does not prevent progression to ocular atrophy. Silicone oil tamponade

may temporarily support the globe but is associated with emulsification, keratopathy, secondary glaucoma, and limited support for the ciliary body. Enucleation, while definitive, carries psychological and cosmetic consequences.

The foldable capsular vitreous body (FCVB) was developed as an alternative vitreous substitute to provide uniform internal support while isolating silicone oil from intraocular tissues. In this report, FCVB implantation was performed during the pre-phthisical stage, before irreversible scleral shrinkage and complete ciliary body atrophy occurred. Early intervention aimed to stabilize globe anatomy and delay progression toward phthisis bulbi rather than restore vision [6-10].

Literature Review.

Management of end-stage ocular disease and prephthisical eyes remains one of the most challenging areas in vitreoretinal surgery. A prephthisical eye represents a transitional stage between severe ocular hypotony and irreversible phthisis bulbi, characterized by progressive atrophy of intraocular structures, chronic inflammation, retinal detachment, and ciliary body dysfunction. At this stage, therapeutic goals are no longer focused on visual rehabilitation but rather on globe preservation, maintenance of ocular anatomy, stabilization of intraocular pressure (IOP), pain control, and cosmetic integrity.

Historically, enucleation or evisceration has been considered the definitive treatment for blind hypotonic eyes, particularly when associated with chronic pain or recurrent inflammation. Although effective in eliminating symptoms, these procedures are irreversible and often impose a significant psychological burden on patients, including anxiety, depression, and altered self-image. In addition, long-term socket-related complications such as implant exposure, migration, and orbital volume loss may occur, further affecting quality of life.

Silicone oil tamponade has been widely used as a vitreous substitute in complex retinal detachments and severe ocular trauma. However, long-term outcomes of silicone oil in pre-phthisical eyes are frequently unsatisfactory. Multiple studies have demonstrated that prolonged silicone oil retention is associated with emulsification, secondary glaucoma, corneal decompensation, band keratopathy, and recurrent hypotony. Importantly, silicone oil provides limited mechanical support to the ciliary body and choroid, structures that are essential for aqueous humor production and IOP regulation. As a result, silicone oil tamponade often fails to prevent progressive ocular atrophy and eventual phthisis bulbi.

The foldable capsular vitreous body (FCVB) was developed to overcome the limitations of traditional vitreous substitutes.

Structurally, FCVB consists of a thin, elastic polymer capsule that is implanted into the vitreous cavity and subsequently filled with silicone oil or balanced salt solution. This encapsulated design allows for uniform distribution of intraocular pressure while preventing direct contact between silicone oil and intraocular tissues. Experimental studies have demonstrated excellent biocompatibility of FCVB materials, with minimal inflammatory response and stable intraocular positioning.

Initial animal studies confirmed that FCVB implantation preserves retinal architecture, reduces inflammatory infiltration, and provides sustained mechanical support compared with free silicone oil tamponade. Building upon these findings, clinical studies expanded the application of FCVB to complex retinal detachment, severe ocular trauma, and hypotonic eyes. Zhang et al. reported favorable anatomical outcomes in patients with severe retinal detachment treated with FCVB, including stabilization of IOP and preservation of globe contour. Chen et al. further demonstrated that FCVB implantation effectively improved ocular hypotony by supporting the ciliary body and reducing aqueous humor outflow abnormalities.

In the specific context of pre-phthisical eyes, FCVB serves a unique therapeutic role. Rather than aiming to restore vision, FCVB implantation focuses on delaying or preventing progression to phthisis bulbi. Several clinical series have reported that FCVB maintains globe morphology, stabilizes IOP, and reduces patient discomfort, thereby decreasing the need for enucleation. Importantly, patients undergoing FCVB implantation often report higher satisfaction and better psychological outcomes compared with those managed with conservative therapy or long-term silicone oil tamponade.

Comparative analyses between FCVB and silicone oil tamponade suggest that FCVB provides superior long-term anatomical stability with fewer complications related to emulsification and secondary glaucoma. Additionally, the uniform 360-degree internal support provided by FCVB is particularly advantageous in eyes with compromised ciliary body function. These benefits make FCVB an attractive option for globe preservation in advanced ocular disease.

Despite encouraging results, several limitations must be acknowledged. Most published studies are retrospective, involve small sample sizes, and have relatively short follow-up periods. Long-term outcomes beyond five years, including device durability and late-onset complications, remain insufficiently characterized. Furthermore, standardized indications, timing of implantation, and optimal filling materials for FCVB have not been universally established. Future multicenter prospective studies are necessary to define patient selection criteria and to compare FCVB with emerging vitreous substitutes.

Overall, current literature supports FCVB implantation as a valuable globe-preserving strategy in selected patients with pre-phthisical eyes. While it does not offer visual recovery in advanced disease, FCVB effectively addresses key therapeutic goals that are inadequately met by traditional approaches, positioning it as an important advancement in the management of end-stage ocular conditions.

Materials and Methods.

This study presents a single-patient case report. A 35-year-

old male presented with a blind eye secondary to chronic total retinal detachment. The eye had no light perception and severe hypotony but no significant ocular pain at presentation. However, progressive hypotony, uveal detachment, and early anatomical changes suggested impending phthisis bulbi.

Given the absence of visual potential, management options including observation, prosthetic shell fitting, silicone oil tamponade, FCVB implantation, and enucleation were discussed in detail. The patient expressed a strong preference for globe preservation. Written informed consent was obtained after extensive counseling regarding the goals of surgery, the absence of visual benefit, and potential risks, including intraocular inflammation, infection, device failure, and the rare but serious risk of sympathetic ophthalmia. The study adhered to the Declaration of Helsinki.

Indications for FCVB implantation included:

- Ø No visual potential
- Ø Chronic hypotony indicating ciliary body dysfunction
- Ø Total retinal detachment refractory to prior management
- Ø Pre-phthisical anatomical changes without complete globe atrophy
- Ø Absence of active infection or malignancy
- Ø Patient preference for globe preservation after informed consent

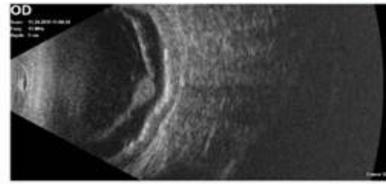
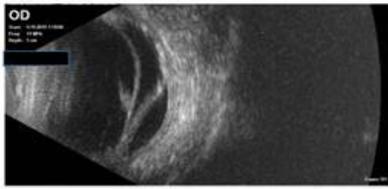
Surgical Technique.

A 23-gauge chandelier-assisted pars plana vitrectomy was performed. Residual vitreous and fibrovascular tissues were removed, followed by extensive endodiathermy and 360-degree retinectomy. After fluid–air exchange, a 5-mm scleral incision was created 4 mm posterior to the limbus. A pre-folded FCVB was implanted into the vitreous cavity and subsequently filled with silicone oil to achieve adequate intraocular pressure. The drainage tube was positioned in the superotemporal sub-Tenon's space. Postoperatively, the patient received topical broad-spectrum antibiotic drops for one week and topical corticosteroids tapered over six weeks. Cycloplegic therapy was administered to reduce ciliary spasm and postoperative inflammation. Follow-up examinations were scheduled at 1 week, 1 month, 3 months, and 6 months, including assessment of intraocular pressure, anterior segment inflammation, FCVB positioning, and posterior segment anatomy using B-scan ultrasonography and ultrasound biomicroscopy.

Results.

Postoperative follow-up at six months demonstrated stable positioning of the FCVB. Intraocular pressure remained between 9 and 10 mmHg without additional intervention. B-scan and UBM confirmed reattachment of the choroid and ciliary body. No device-related complications, including inflammation, extrusion, infection, or migration, were observed. The patient reported subjective comfort and satisfaction with the cosmetic outcome (Table 1). Potential postoperative complications actively monitored included anterior chamber inflammation, FCVB displacement or deformation, drainage tube exposure, silicone oil leakage, intraocular infection, corneal decompensation, secondary glaucoma, scleral thinning, and device extrusion. None of these complications were observed during the six-month follow-up period (Figures 1 and 2).

Preoperative B scan images



Postoperative B scan image



Figure 1. A. Preoperative B-scan ultrasonography demonstrating total retinal detachment with sectorial choroidal effusion in a hypotonic pre-phthisical eye.

B. Postoperative B-scan at 6 months showing stable FCVB positioning and choroidal reattachment.

C. B scan confirming ciliary body reattachment.

Postoperative Images

Post – OP 3 Months



Post-OP 6 month Follow up



Figure 2. Postoperative anterior segment photographs at 3-month and 6-month follow-up after FCVB implantation. The images demonstrate preserved globe contour, quiet ocular surface, and satisfactory cosmetic appearance without signs of inflammation, extrusion, or device-related complications.

Table 1. Comparative analysis of FCVB implantation, silicone oil tamponade, and enucleation.

Parameter	FCVB Implantation	Silicone Oil Tamponade	Enucleation
Goal of treatment	Globe preservation and anatomical stability	Temporary internal tamponade	Definitive removal of the eye
Intraocular pressure control	Stable and adjustable	Often unstable; risk of hypotony or glaucoma	Not applicable
Support of ciliary body/ choroid	Uniform 360° internal support	Limited support	Not applicable
Risk of long-term complications	Low; good biocompatibility reported	High (emulsification, keratopathy)	Surgical and socket-related risks
Psychological impact	Eye preserved; better patient acceptance	Eye preserved but often progressive failure	High emotional burden
Indication in pre-phthisical eye	Highly suitable	Limited effectiveness	Last-resort option

Discussion.

This case demonstrates the short-term anatomical feasibility of FCVB implantation in a pre-phthisical eye without visual potential. Although the patient did not experience ocular pain at presentation, progressive hypotony and uveal detachment indicated a high risk for eventual phthisis bulbi, globe shrinkage, and cosmetic deformity. In such cases, intervention may be considered prophylactic rather than symptom-driven.

The ethical justification for invasive surgery in a painless blind eye requires careful consideration. In this case, the procedure was undertaken only after extensive counseling and informed consent, emphasizing the non-visual goals of treatment, alternative options including observation and prosthetic shell fitting, and potential risks such as inflammation, infection, and sympathetic ophthalmia. The patient's informed preference for globe preservation was a decisive factor.

Compared with long-term silicone oil tamponade, FCVB offers uniform internal support that may better stabilize the ciliary body and choroid. This feature is particularly relevant in hypotonic eyes, where ciliary body collapse contributes to progressive IOP decline. In the present case, FCVB implantation resulted in stable IOP and reattachment of uveal structures at six months.

Conclusion.

FCVB implantation may serve as a short-term globe-preserving option in selected pre-phthisical eyes without visual potential. In this preliminary report, the procedure achieved anatomical stabilization and intraocular pressure control without significant complications. Long-term follow-up and larger prospective studies are required to establish its durability, safety, and role relative to observation, silicone oil tamponade, and enucleation.

REFERENCES

1. Zhang R, Liu S, Yang H, et al. Evaluation of supporting role of a foldable capsular vitreous body with magnetic resonance imaging in the treatment of severe retinal detachment in human eyes. *Eye (Lond)*. 2011;25:794-802.
2. Luo L, Wei Q, Liu Q, et al. Evaluation of foldable capsular vitreous body implantation surgery. *Int J Gen Med*. 2022;15:7077-7087.
3. Zhang R, Liu S, Yang H, et al. Clinical application of a foldable capsular vitreous body in severe retinal detachment. *BMC Ophthalmol*. 2015;15:177.
4. Chen H, Feng S, Liu Y, et al. Clinical outcomes of foldable capsular vitreous body implantation in severe ocular trauma. *BMC Ophthalmol*. 2016;16:8.
5. Liu Y, Wang L, Chen H, et al. Foldable capsular vitreous body implantation for the treatment of severe vitreoretinal diseases. *Int J Ophthalmol*. 2018;11:496-501.
6. Zhang R, Chen H, Xu G. Treatment of severe ocular hypotony using foldable capsular vitreous body implantation. *Eye Sci*. 2017;32:59-65.
7. Chen H, Zhang R, Wang L, et al. Foldable capsular vitreous body implantation for preserving severely damaged eyes. *Int J Ophthalmol*. 2020;13:816-822.
8. Federman JL, Schubert HD. Complications associated with the use of silicone oil in vitreoretinal surgery. *Ophthalmology*. 1988;95:870-876.
9. Cibis PA, Becker B, Okun E, et al. The use of liquid silicone in retinal detachment surgery. *Arch Ophthalmol*. 1962;68:590-599.
10. Kanski JJ, Bowling B. *Clinical Ophthalmology: A Systematic Approach*. 8th ed. London: Elsevier; 2016.