GEORGIAN MEDICAL MEWS

ISSN 1512-0112

NO 2 (359) Февраль 2025

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 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 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. მიკროფოტო-სურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სუ-რათის 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 2 (359) 2025

Содержание:

Gavrilova Uliana V, Alieva Samaya A, Gerasimenko Aleksandra A, Mikhaleva Ekaterina A, Solovieva Ekaterina V, Vedzizheva Khava Kh, Sadykov Magomed L, Belousova Anastasia A, Ladaev Abubakar Kh, Aupov Ibragim A, Maasheva Elita A, Makhamaev Ilias B, Yanarkaev Ibragim R.
NEXT-GENERATION ANTIOXIDANTS: SHOULD WE TARGET PEROXIREDOXINS (PRX)?6-14
Marina Endeladze, Maia Zhamutashvili, Tinatin Gognadze, Elene Meskhi, Natia Jojua, M. Akhvlediani. CASE REPORT OF CAT SCRATCH DISEASE (BARTONELLA)
Karapetyan A.G, Santini C, Pellei M, Caviglia M, Dallakyan A.M, Petrosyan Zh.H, Danielyan M.H, Nebogova K.A, Grigoryan V.S. MANIFESTATION OF RADIOPROTECTIVE PROPERTIES IN COPPER COMPLEXES [CU(L ^{CF3}) ₂] AND [CU(ADM)(PPH ₃) ₂]PF ₆ 18-22
Nato Nakudashvili, Levan Ratiani, Tamar Megrelishvili, Elene Saribekovi, Marine Tsabadze, Nina Kipiani, Nino Intskirveli, Magda Tortladze, Tea Gabunia, Shorena Tsiklauri, Zaza Nakudashvili, George Ormotsadzr, Tamar Sanikidze. FEATURES OF VASOMOTOR RHINITIS (VMR) IN PATIENTS WITH A HISTORY OF COVID-19 INFECTION
Warda Mohamed, Rashid Eltayeb, Hussam Ali Osman, Mosab Omer, Elryah. I. Ali, Ammar Abdelmola, Tagwa Yousif, Mohamed Belhocine, Safa Taha, Elyasa Elfaki, Wael Alzahrani, Asaad Babker, Abdelgadir Elamin Eltom, Marwan Ismail, Ayman Alfeel. BIOCHEMICAL INSIGHTS AND HORMONAL MARKERS OF POLYCYSTIC OVARY SYNDROME IN SUDANESE WOMEN: EXPLORING INFERTILITY AND RISK FACTORS IN RED SEA STATE
Kolupayev S.M, Goloborodko M.M, Bytiak S.Yu, Lavrinenko A.S, Lupyr M, Lantukh I.V, Lytvynova I.L, Gulbs O.A, Dikhtyarenko S.Yu, Kobets O.V. PSYCHOLOGICAL FEATURES OF THE REHABILITATION OF PERSONS WITH UROLITHIASIS
Wang-Yong Li, Xiao-Yan Yang, Zhun Cai, Guo-Fu Chen. A CASE OF CECAL CANCER WITH RETROPERITONEAL ABSCESS
Tamriko Dzotsenidze, Arsen Gvenetadze, Giorgi Burkadze, Ekaterine Isakidi, Mariam Shulaia. GENETIC ALTERATIONS IN TUBO-OVARIAN EPITHELIUM DURING OVARIAN NEOPLASIA
Ali M. Muhammed Ali, Omar M. Yahya, Ehsan HT. AlDabbagh. IN SILICO DOCKING OF SILYMARIN ACTIVE CONSTITUENTS WITH INSULIN RECEPTORS: A STEP TOWARD DIABETES THERAPEUTICS
Armenuhi Avagyan, Taline K. Ashekian, Armenuhi Snkhchyan, Hasmik Mkrtchyan, Tigran Petrosyan. BARRIERS AND SOLUTIONS IN THE USE OF ALTERNATIVE AND AUGMENTATIVE COMMUNICATION: A PILOT DESCRIPTIVE STUDY PRESENTING INSIGHTS FROM ARMENIAN PROFESSIONALS
Xin-Juan Wang, Lian-Ping He. STATISTICAL TEACHING ON BUILDING STROKE PREDICTION MODELS
Kosherova Bakhyt Nurgaliyevna, Abbozova Shakhnosa Maratovna, Smagul Manar Asyrovna, Zhumagaliyeva Galina Dautovna, Sagyndykova Togzhan Baibolsynovna. MEASLES IN PREGNANCY IN THE REPUBLIC OF KAZAKHSTAN: CLINICAL AND LABORATORY MANIFESTATIONS AND OUTCOMES
Warda Mohamed, Rashid Eltayeb, Hussam Ali Osman, Mosab Omer, Elryah. I. Ali, Ammar Abdelmola, Tagwa Yousif, Mohamed Belhocine, Safa Taha, Elyasa Elfaki, Wael Alzahrani, Ayman Alfeel, Asaad Babker, Abdelgadir Elamin Eltom, Marwan Ismail. FOLLICLE-STIMULATING HORMONE RECEPTOR MUTATIONS IN SUDANESE WOMEN: A STUDY ON POLYCYSTIC OVARY SYNDROME
Saidulaev M.A, Osipova N.I, Gurtskaya A.D, Semov N.D, Khusainov R.R, Khabarov E.A, Lech D.S, Stotland P.A, Eloeva V.V, Syromyatnikova A.V. PIRACETAM HELPS RESTORE VISION AFTER CRANIOCEREBRAL TRAUMA
Ming Li, Wen-Wen Hao, Li-Juan Ru. THE ASSOCIATION BETWEEN AQUEOUS HUMOR MICROENVIRONMENT IN DIABETIC CATARACT PATIENTS AND POSTOPERATIVE MACULAR EDEMA AND VISUAL ACUITY CHANGES
Voloshyn-Haponov I.K, Lantukh I.V, Gulbs O.A, Dikhtyarenko S.Yu, Kobets O.V, Pustova N.O, Popova N.G, Gridneva O.V, Ostapenko V.M, Mikhanovska N.G, Torianyk I.I. PSYCHOLOGICAL FEATURES OF THE SUBJECTIVE PERCEPTION OF THE QUALITY OF LIFE OF PATIENTS WITH HEPATOCEREBRALDYSTROPHY
Bangqiang Hou, Wei Liu, Ke Pan, Yiya Wang, Yaomin Luo, Yutong Han, Jingjing Liu, Qing Wu, Yinxu Wang. BRAIN NETWORK FUNCTIONAL CONNECTIVITY AND CORTICAL ACTIVATION FEATURES DURING THE SWALLOWING TASK FOR THE PATIENTS OF POST STROKE DYSPHAGIA: A MULTI- CHANNEL FNIRS STUDY96-107
Assel Ibrayeva, Dinara Ospanova, Korlan Saduakasova, Anar Akshalova, Anar Muratbayeva, Shynar Tanabayeva, Ildar Fakhradiyev. PREVALENCE AND SOCIO-DEMOGRAPHIC RISK FACTORS OF EMOTIONAL BURNOUT AMONG PSYCHIATRISTS AND NURSING STAFF IN PSYCHIATRIC SERVICES IN KAZAKHSTAN

Violeta Grajçevci Uka, Art Uka, Lirim Isufi. THE SOCIODEMOGRAPHICAL AND MORPHOLOGICAL CHARACTERISTICS OF PRESCHOOL CHILDREN WITH SIDEROPENIC ANEMIA IN THE KOSOVO SAMPLE
Li-Bo Wang, Chun-Miao Xu. ENHANCING OPHTHALMIC NURSING EDUCATION: A COMPREHENSIVE APPROACH TO CLINICAL TEACHING AND TRAINING
Maia Zhamutashvili, Tinatin Gognadze, Natia Jojua, Elene Meskhi, Ketevan Meskhi, Ekaterine Dolmazashvili. CO-OCCURRENCE OF HANTAVIRUS PULMONARY SYNDROME AND HEMORRHAGIC FEVER WITH RENAL SYNDROME123-125
Abdukalikova D.B, Auezova A.M, Baymuratova M.A, Yessembayeva S.S, Yermukhanova G.T, Yerkibayeva ZH.U. WORKSHOP AS A PRACTICE-ORIENTED METHOD OF TEACHING DENTISTS: INTRODUCTION TO EDUCATIONAL PROGRAMS FOR WORKING WITH CHILDREN WITH AUTISM SPECTRUM DISORDERS (ASD)
Li-Juan Ru, Qian-Qian Yao, Ming Li. RISK PREDICTION MODEL FOR ACUTE KIDNEY INJURY IN PATIENTS WITH SEVERE ACUTE PANCREATITIS133-135
Sawer S. Ahmed, Abdulazeez M. Brifkani, Haval J. Ali, Nasir A. Al Allawi. FACTORS AFFECTING HEALTH RELATED QUALITY OF LIFE IN ADULT PATIENTS WITH BETA-THALASSEMIA MAJOR
Liu-Xia Shi, Xiao-Ya Peng, Xiao-Xu Ruan, Rui Li, Wen-Jie Wen, Chao Deng. WHOLE TRANSCRIPTOME SEQUENCING AND CIRC_HSA_0001847 ON PROLIFERATION AND INVASION OF ORAL SQUAMOUS CELLCARCINOMA
Takuma Hayashi, Krishna Prasad Acharya, Sarita Phuyal, Ikuo Konishi. THE ROLE OF LIVE BIRD MARKETS SHOULD BE EMPHASIZED IN PREVENTING THE SPREAD OF HIGHLY PATHOGENIC AVIANINFLUENZAINFECTIONS
Karapetyan A.G, Grigoryan V.S, Santini C, Pellei M, Del Gobbo J, Dallakyan A.M, Petrosyan Zh.H, Fanarjyan S.A, Danielyan M.H, Nebogova K.A. BLOOD AND CYTOGENETIC MARKERS IN EXPERIMENTAL BURNS AND THEIR TREATMENT WITH [CU(L ^{CF3}) ₂] AND [CU(ADM) (PPH ₃) ₂]PF ₆
Sharofova M.U, Khalimova F.T, Habasi Maidina, Jiangyu Zhao, Haji Akber Aisa. ANTIMICROBIAL AND ANTI-INFLAMMATORY ACTIVITY OF PLANT EXTRACTS: PROSPECTS FOR THE DEVELOPMENT OF COMBINED THERAPEUTIC AGENTS

A CASE OF CECAL CANCER WITH RETROPERITONEAL ABSCESS

Wang-Yong Li¹, Xiao-Yan Yang², Zhun Cai¹, Guo-Fu Chen¹.

¹Department of Gastrointestinal Surgery, Wenling First People's Hospital, Wenling 317500, Zhejiang, China. ²Department of Rehabilitation Medicine, Wenling First People's Hospital, Wenling 317500, Zhejiang, China.

Abstract.

This paper reports a case of a 65 - year - old male patient with cecal cancer complicated by retroperitoneal abscess. The patient initially presented with abdominal pain and fever. Through a series of examinations such as laboratory tests, abdominal CT, and colonoscopy, a diagnosis was made. After abscess drainage and subsequent radical right hemicolectomy and abscess debridement, the patient received adjuvant chemotherapy. During the two-year follow-up, there was no recurrence. The paper also discusses the etiology, clinical manifestations, diagnosis, and treatment of colon cancer with retroperitoneal abscesses, aiming to improve clinicians' understanding and handling ability of this rare disease.

Key words. Cecal cancer, retroperitoneal abscess, diagnosis, treatment, clinical manifestations, prognosis.

Introduction.

Retroperitoneal abscess refers to a localized suppurative infection in the retroperitoneal space. It mostly occurs secondary to diseases of organs adjacent to or within the retroperitoneal space. Due to the deep location of the abscess, the abdominal signs are mild, and the clinical manifestations are easily masked by the symptoms of the primary disease, making early diagnosis difficult. The surgical mortality rate of retroperitoneal abscesses caused by colon cancer perforation is high, and the prognosis is poor, which is considered to be related to sepsis, local tumor progression, and a high incidence of recent distant metastases. It is rare for cecal cancer to invade adjacent tissues and organs and form a retroperitoneal abscess. Here, we report a case of cecal cancer with retroperitoneal infiltration and perforation, leading to an iliopsoas abscess.

Clinical Data.

A 65 - year - old male patient with a BMI of 19 kg/m² was admitted to our hospital on July 31, 2022, due to "abdominal pain for ten days and fever for one day". His past physical condition was average, and he had no history of trauma, surgery, or cardiovascular and cerebrovascular diseases. Physical examination: body temperature 38.1°C, pulse 90 beats per minute, respiration 19 breaths per minute, blood pressure 127/70 mmHg. The abdomen was flat and symmetric, without varicose veins on the abdominal wall, gastrointestinal patterns, or peristaltic waves. The abdominal wall was soft, without muscle tension. A mass about 6 cm×5 cm could be palpated in the right mid - lower abdomen, with tenderness but no rebound tenderness. The liver and spleen were not palpable under the costal margin, there was no fluid wave tremor, no percussion pain in the liver and spleen areas, no percussion pain in the bilateral kidney areas, no shifting dullness, normal bowel sounds (3 - 5 times per minute), and no vascular murmurs were heard. Laboratory tests: white blood cell count 11.87×109/L, red blood cell count 3.19×10¹²/L, hemoglobin 103 g/L, platelet count 403×109/L, neutrophil percentage 82.73%; albumin 29.7 g/L, normal liver and kidney function. CEA: 3.70 ng/mL (normal range: 0 - 5 ng/mL). Abdominal CT: suspected right psoas major abscess with gas accumulation, edema, thickening, and exudation of the ascending colon, terminal ileum, and appendix, and a small amount of pelvic effusion (Figure 1). After admission, anti - infection, nutritional supplementation, and fluid replacement was carried out. On the second day of admission, under B - mode ultrasound guidance, the retroperitoneal abscess was punctured and drained, and yellow viscous pus was drained, with a daily volume of about 20 - 30 ml. Pus bacterial culture: Gram - negative bacilli, Escherichia coli. Further abdominal enhanced CT: changes after drainage of the right psoas major abscess, edema, thickening, and exudation of the ascending colon, terminal ileum, and appendix, and a small amount of pelvic effusion, which was improved compared with the previous film (Figure 2). The patient's abdominal pain improved after one week, and he was discharged from the hospital. Seventy days later, he was admitted to the hospital again due to abdominal pain, with a BMI of 18.3 kg/m². The specialized physical examination was similar to that at the first admission. On October 20, 2022, blood CEA: 6.82 ng/mL. Reexamination of abdominal enhanced CT showed: changes after treatment of the right psoas major abscess, the lesion was larger compared with the CT on July 31, 2022, the lesion seemed to communicate with the adjacent colon, and the adjacent intestinal wall was significantly thickened and enhanced (Figure 3). Colonoscopy suggested a tumor in the ileocecal region. After excluding surgical contraindications, radical right hemicolectomy and retroperitoneal abscess debridement were performed on October 28, 2022. During the operation, a large mass was seen in the cecum, hard in texture, tightly adhered to the lateral abdominal wall. When separating the lateral abdominal wall, pus gushed out. The pus was sucked out, and the psoas major abscess was bluntly separated with fingers. The abscess cavity was irrigated with a large amount of normal saline. Post - operative pathological examination: moderately differentiated adenocarcinoma, protruded type, mass size 4 cm×4 cm×1 cm, infiltrating the full layer, with perforation, acute and chronic serositis, no obvious nerve involvement, focal suspected intravascular cancer emboli, negative upper and lower resection margins, and no metastases in 22 perienteric lymph nodes; immunohistochemistry: tumor cells MSH2 +, MSH6 +, MLH1 +, PMS2 +, EGFR +, SATB2 +, CDX2 +, CDH17 +, ki67 about 60%+. The patient was discharged smoothly ten days after the operation and received regular adjuvant chemotherapy for half a year with the XELOX regimen. There was no recurrence during the two - year follow - up.

© *GMN* 45

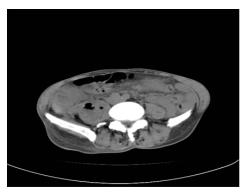


Figure 1. Shows a suspected abscess in the right psoas major muscle with gas accumulation, as well as edema, thickening, and exudation of the ascending colon, terminal ileum, and appendix.

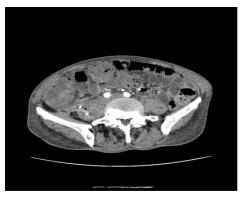


Figure 2. Shows the changes after the drainage of the retroperitoneal abscess. The scope of the lesion is smaller than before, and the arrow indicates the drainage catheter.



Figure 3. Shows that the retroperitoneal abscess has enlarged, and the adjacent intestinal wall is significantly thickened and enhanced.



Figure 4. Shows the specimen after radical right hemicolectomy and a tumor can be seen at the cecum.

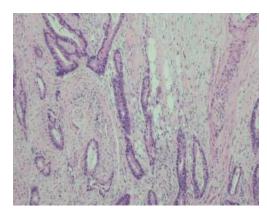


Figure 5. Shows the pathological findings after surgery and the tumor cells are arranged in glandular ducts ($HE \times 100$).

Discussion.

The causes of retroperitoneal abscesses are divided into primary and secondary types. The primary type is caused by the hematogenous or lymphatic extension of pathogenic microorganisms, while the secondary type occurs due to the direct spread of infection or inflammation to the iliopsoas muscle. Retroperitoneal abscesses often occur secondary to Crohn's disease, appendicitis, pancreatitis, diverticulitis, urinary tract infections, vertebral osteomyelitis, discitis, etc. Colon cancer perforation can lead to local infection or systemic sepsis. Colon cancer perforation usually spreads within the abdominal cavity, and retroperitoneal spread is relatively rare. The incidence of psoas muscle abscesses caused by colon cancer perforation is estimated to be between 0.3% and 0.4%. The formation of an abscess may be due to the fact that after the tumor invades the abdominal wall or adjacent tissues, the excessive growth of tumor cells leads to ischemia, necrosis, and even local perforation inside the tumor, and the translocation of bacteria in the intestinal lumen forms an abscess. The abscess may be limited to the paracolic area or may spread to distant sites through some potential tissue space channels. Some authors have reported that retroperitoneal abscesses can spread not only to the iliopsoas muscle, ilium, and pelvis but also to the thigh beyond the inguinal ligament. It is believed that the psoas major muscle extends from T12 to the lesser trochanter of the femur. Perhaps affected by gravity, most abscesses flow down along the psoas major muscle, resulting in local abscesses in the iliopsoas muscle, adductor muscles of the thigh, and the subcutaneous tissue around the end of the psoas major muscle.

Clinically, right - sided colon cancer often presents with abdominal pain, abdominal mass, and systemic symptoms at admission. Patients with retroperitoneal abscesses have hidden and atypical symptoms and usually do not have gastrointestinal symptoms. Professor Zhou Junmin's team conducted a comprehensive analysis of 55 cases of colon cancer with retroperitoneal abscesses reported at home and abroad and found that most patients had corresponding discomfort due to retroperitoneal abscesses or iliopsoas abscesses. The most obvious symptoms were pain in the thigh, abdomen, or lumbosacral region (71%), and other symptoms included swelling (23.6%), weakness, and lower limb movement disorders (18.2%), and fever (16.3%). It was also mentioned

that these patients often had hidden symptoms of fever and weight loss in the early stage. In these cases, the main focus is often on treating their abscesses and subcutaneous necrotizing diseases, while ignoring the primary disease after admission. The early diagnosis of retroperitoneal abscesses is sometimes difficult because the retroperitoneal space is relatively invisible to the examiner. CT is the preferred examination method. The plain CT scan of retroperitoneal abscesses shows an isodense or hypodense mass in the retroperitoneal space with an unclear boundary and obvious mass effect. There are hypodense liquefied and necrotic areas inside the mass, and a small number show gas - density shadows. After enhancement, typical lesions show ring - shaped enhancement, the abscess wall is thick or uneven, and septa can be seen inside the abscess. It is difficult to distinguish small abscesses from intestinal contents, and it is sometimes difficult to differentiate thickening of the intestinal wall due to inflammation from tumors. The accurate diagnosis ultimately depends on surgery and postoperative pathology. In fact, in these cases, the diagnosis is often delayed, and patients develop multiple complications. Some authors have reported that the misdiagnosis rate of colon cancer with retroperitoneal abscesses is as high as 43.9%, and right - sided cases are easily misdiagnosed as appendiceal abscesses.

The treatment methods for colon cancer with retroperitoneal abscesses vary from person to person, and different treatment methods can lead to completely different treatment outcomes for such patients. Combining the experience of this case and literature review, we believe that adequate drainage of the abscess under the guidance of ultrasound or imaging can relieve symptoms and gain time for radical treatment. In this case, the patient underwent puncture and catheterization for drainage through the posterior lumbar approach under B - mode ultrasound guidance after admission. After drainage, the body temperature gradually returned to normal, the scope of the abscess decreased, and the clinical symptoms were relieved. Unfortunately, colonoscopy was not performed further at that time, and the best surgical opportunity was missed. When the abscess is septate, the effect of puncture and drainage may not be ideal. In this case, radical resection of colon cancer and debridement and drainage can be considered, but the pus in the retroperitoneum may spread to the abdominal cavity, and complete tumor resection may not be possible. When the patient cannot tolerate surgery, proximal enterostomy also needs to be considered.

Based on the experience of this case, for patients with retroperitoneal abscesses, when a preoperative examination fails to obtain a more definite cause, the possibility of the disease being masked should be considered. It is necessary to be alert to the possibility of rare diseases. After symptomatic treatment of the abscess, targeted disease management or follow - up should be carried out, and relevant examinations should be rechecked regularly to further clarify the cause and provide favorable conditions for early diagnosis and treatment of the disease. Some scholars have reported that the increase in serum CEA expression is positively correlated with the course of colon cancer. In this patient, the interval between the two hospitalizations was less than three months, and the second blood

CEA index was higher than the normal value. It can be seen that regular reexamination of blood CEA is of great significance for understanding the disease. Clear and timely diagnosis is the core of the treatment of such patients. Through this case, we hope to improve the awareness and treatment ability of clinicians for this rare case. Especially for middle - aged and elderly patients with imaging data suggesting retroperitoneal abscesses, colon malignancies should be excluded.

Conclusion.

Irisin is a multifunctional myokine secreted by adipocytes, cardiac myocytes, and skeletal muscle, possibly mediating a wide range of metabolic processes including insulin resistance, muscle endurance, endothelial function, inflammatory and immune reactions and bone osteoblast activity [9].

Conflict of interest statement.

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.

Data Availability.

Data is provided within the manuscript.

Funding.

The study was supported by Wenling Social Development Science and Technology Project in 2023 (No.2023S00081).

Human Ethics and Consent to Participate declarations.

Not applicable

Acknowledgements.

Not applicable

Consent for Publication.

All other authors have read the manuscript and have agreed to submit it in its current form for consideration for publication in this journal. Patient's informed consent was obtained in this study.

REFERENCES

- 1. Yang JY, Lee JK, Cha SM, et al. Psoas abscess caused by spontaneous rupture of colon cancer. Clin Orthop Surg. 2011:3:342-344.
- 2. Heidelberg LS, Pettke EN, Wagner T, et al. An atypical case of necrotizing fasciitis secondary to perforated cecal cancer. J Surg Case Rep. 2020;2020:rjaa371.
- 3. Nohmi S, Ikenaga S, Itaya A, et al. A large iliopsoas abscess due to colon cancer complicated by bowel obstruction: A case report. Int J Surg Case Rep. 2024;117:109449.
- 4. Doukas SG, Bhandari K, Dixon K. Psoas Abscess Presented as Right Hip Pain in a Young Adult with Crohn's Disease. Cureus. 2021;13:e13162.
- 5. Zhou J, Wan S, Li C, et al. Retroperitoneal abscess as a presentation of colon cancer: The largest case set analysis to date, which extracted from our unit and the literature. Front Oncol. 2023;13:1198592.
- 6. Iemura S, Mori S, Kamiya M, et al. Treatment of thigh abscess caused by retroperitoneal perforation of cecal cancer: A case report. Ann Med Surg (Lond). 2022;79:103882.
- 7. Winter BM, Gajda M, Grimm MO. Diagnosis and treatment of retroperitoneal abscesses. Urologe A. 2016;55:741-747.
- 8. Zhou H, Shao H, Ho JK, et al. Rare Skin Fistulas Relating to Ascending Colonic Carcinoma: An Unusual Mode of Revelation. Int J Low Extrem Wounds. 2018;17:48-53.
- 9. Mengfei M, Qiang C, Zhiyong Yu, et al. A case report of missed diagnosis of cecal cancer in a case of retroperitoneal abscess. Journal of Colorectal & Anal Surgery. 2020;26:230-232.
- 10. Lei S, Kezhen D, Linlin H, et al. Correlation analysis of enhanced CT quantitative parameters with malignant biological behavior and prognosis of colon cancer. Chinese Journal of Postgraduates of Medicine. 2021;06:477-503.