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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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

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

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

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

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

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

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

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

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

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

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

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

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

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

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

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

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

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

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

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

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

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

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

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

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

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

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

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

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

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

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

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

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

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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NITROSAMINE CONTAMINATION WITHIN CARDIAC MULTIMEDICATION - SARTANS (VALSARTAN), CALCIUM CHANNEL BLOCKERS (AMLODIPINE AND NIFEDIPINE), AND ANTIARRHYTHMICS (PROPAFENONE) AS A SIGNIFICANT FACTOR IN THE DEVELOPMENT AND PROGRESSION OF MULTIPLE KERATINOCYTIC CANCERS: ADVANCEMENT ROTATION FLAP FOR KERATOACANTHOMA OF THE UPPER LIP AND UNDERMINING SURGERY FOR BCC OF THE SHOULDER AS AN OPTIMAL DERMATOSURGICAL APPROACH

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Abstract.

The data on the polycontamination of multimedication in polymorbid patients with a heterogeneous class of carcinogens/ nitrosamines, NDSRIs (classified according to the FDA regulation to the companies of 2023 to those with a carcinogenic potency between 1 and 5), are one of the most important steps to clarify the concept of skin cancer nitrosogenesis/ pathogenesis. The FDA is the first regulatory institution in the world to courageously declare that a problem exists and should be addressed.

The main and currently unexplained and somewhat controversial issue lies in 1) the sporadic nature of polycontamination in different geographical regions, and 2) the lack of official data from the established international, but also regional pharmaceutical market regulators on the results of the checks conducted for nitrosamine contamination of the respective batches. It is this that leads scientists to the idea of (albeit seemingly) speculative but entirely possible controlled contamination of the production in certain geographical regions. This (hypo)thesis is supported, albeit indirectly, by the fact that: a recent regional check for possible contamination of sartans in a particular geographical region was not indicative of the presence of any nitrosamines/NDSRIs.

But this fact is indicative of several extremely important things: 1) contamination is not ubiquitous, its genesis is heterogeneous; 2) contamination could be completely avoided at production level in certain geographical regions; 3) ″controlled contamination″ or carelessness of a heterogeneous nature should be excluded by the relevant regulators.

Regular inspection and certification of medicinal products in relevant geographical regions to exclude contamination with nitrosamines/NDSRIs would be the surest method to protect public health globally.

The initial parameters of the restrictive processes for the availability of nitrosamines in medicines have been established by the most powerful regulator globally in the face of the FDA, with the hope being that manufacturers will find a short-term solution to the problem.

We report another patient who simultaneously developed 2 cutaneous tumors under potentially/actually nitrosamine contaminated drugs such as: beta blockers- atenolol, calcium antagonists- nifedipine/amlodipine, sartans- valsartan and antiarrhythmics- propafenone. One of the tumors was localized in the upper lip area (keratoacanthoma) and the other in the right shoulder area (basal cell carcinoma). Successful surgical treatment of the tumors was performed in the form of upper lip advancement rotation flap and elliptical excision of the second lesion.

The evolution/growth rate of the tumors in relation to the potential mutagens/carcinogens heterogeneous in their potency contained in the drugs is commented.

Key words. Multimedication, contamination, NDSRIs, Nitrosamines, skin cancer, advancement rotation flap, valsartan, atenolol, nifedipine, propafenone, amlodipine.

Introduction.

The polycontamination of polymedication with nitrosamines in polymorbid patients appears to be a currently unsolvable dilemma [1-3]. This dilemma is mainly driven by the lack or difficulty in finding an alternative medication that is unaffected by universal contamination [1-4].

Beta blockers , calcium antagonists, antiarrhythmic drugs, and sartans are among the drugs most affected by potential nitrosamine contamination [1,2-4]. It is this fact that determines the difficulty in finding substitutes in cases of 1) contamination with nitrosamines detected after screening or 2) the occurrence of side effects such as skin tumors [2-4].

We present a patient who was taking 2 potentially nitrosamine-contaminated antihypertensive drugs, which are substituted during the cardiologist's check-up with 2 other potentially nitrosamine-contaminated antihypertensive drugs/ (according to the current list of possible nitrosamine contamination/NDSRIs as of April 2023).

The patient developed 2 cutaneous tumors during this intake which were successfully surgically removed. The role of potential contamination of the current medication is discussed in relation to nitrosogenesis concerning skin cancers pathogenesis.

Case report.

We report an 81-year-old patient with complaints dating back about 5-6 months and associated with the appearance of a neoplasm in the right upper lip area. The lesion is gradually growing rapidly, accompanied by bleeding, and itching on shaving. Lack of improvement after application of topical corticosteroids and gentamicin in cream form in outpatient

setting. Concurrently, the patient reported discomfort from a new-onset small ulcer on the right shoulder. Due to lack of improvement in the symptomatology and growth of the lesions, the patient visited the clinic of dermatology and dermatological surgery in order to clarify their dignity. During the dermatological examination, it was found that an oval-shaped tumor with a diameter of 1 cm was present in the upper lip area on the right, with a hyperkeratotic crust centrally arising from a crater-shaped plateau (Figure 1a). The lesion is suggestive of an epithelial neoplasm. In parallel, there is another tumor-shaped lesion, with preclavicular localization, about 1 to 0.5 cm in diameter in separate directions, clearly demarcated from healthy tissue (Figure 3a), clinically superimposed for solid basal cell carcinoma.

Concomitant diseases in the patient are known arterial hypertension, angina pectoris, dyslipidemia.

Patient's concomitant medication includes atenolol 25 mg twice daily for 3 years, nifidipine 20 mg twice daily for 3 years, atorvastatin 10 mg once daily for 3-4 years. April 2023 patient's cardiac therapy changed to : propafenone 150 mg twice daily in combination with amlodipine/valsartan 5/160 mg half tablet twice daily. Nifedipine and atenolol medication was discontinued.

Paraclinical and apparative diagnostics were without evidence of metastasis and the patient was referred for surgical treatment under local anesthesia.

For the upper lip lesion, an upper lip advancement rotation flap was performed, and the tumor was initially removed as an oval excision (Figures 1b-d).

This was followed by debulking of the marked flap and preservation of the a. facialis to preserve blood supply to the transposed area, as well as repositioning and adaptation of the flap to the area of the newly created defect after tumor removal (Figures 3 and 1b-1d). Absence of complications in the postoperative period (Figures 2a,2b).

The tumor , localized preclavicularly on the right, was removed as an elliptical excision, and the edges of the wound were mobilized and adapted using single skin sutures (Figures 3a-3c). The histopathological findings were consistent with an ulcerated nodular form of basal cell carcinoma, clean resection lines, stage 1 (T1N0M0). Smooth postoperative period and absence of complications.

Discussion.

The concept of chemical cutaneous carcinogenesis is not new [5] and although it is gaining currency [2,3], the academic community is currently reluctant to accept it, comment on it, formalize the available data and address the problem definitively. Because in practice it appears that cancer could be a largely 'solvable' problem. The leading role of chemical carcinogens has been described in heterogeneous forms of skin cancer [6].

Environmental factors, to which nitrosamines belong, have been associated in principle and as a rule for decades with the development of cancer in general [7], irrespective of the form in which this intake takes place, either via the food [8] or inhalation [9]. The result in both cases is suggestive of an existing correlation between (1) the two heterogeneous forms of nitrosamine intake and (2) the development of tumors of the gastrointestinal tract or lung [8,9].

Chemical cutaneous carcinogenesis, which has also been well known for years, has been associated under experimental conditions and analogously to the patient we described with the development of keratinocytic cancers (keratoacanthoma and basalioma), but also with that of cutaneous melanomas [10]. Why should we be surprised when the same side effects also affect the human population after intake of mutagen-contaminated drugs? Our expectations of side effects should be no different. On the contrary, they are absolutely equivalent [2-4].

Nitrosogenesis of skin cancer could be considered as a subtype of chemical cutaneous carcinogenesis, and not without cause [2-4]. Nitrosogenesis finds its clinico-morphological correlate in patients who have taken polycontaminated drugs within their polymorbidity (a kind of prospective and currently follow-up/ conditioned by FDA permissive regimens for forcible tolerance of nitrosamines/ NDRSIs in drugs) [2-4]. This permissive regime by regulators is also the most important prerequisite for real-time tracking and analysis of thousands of skin cancer cases, like the patient described in our publication. In practice, patients are in a years-long prospective follow-up of side effects occurring after taking carcinogens/nitrosamines/NDSRIs.

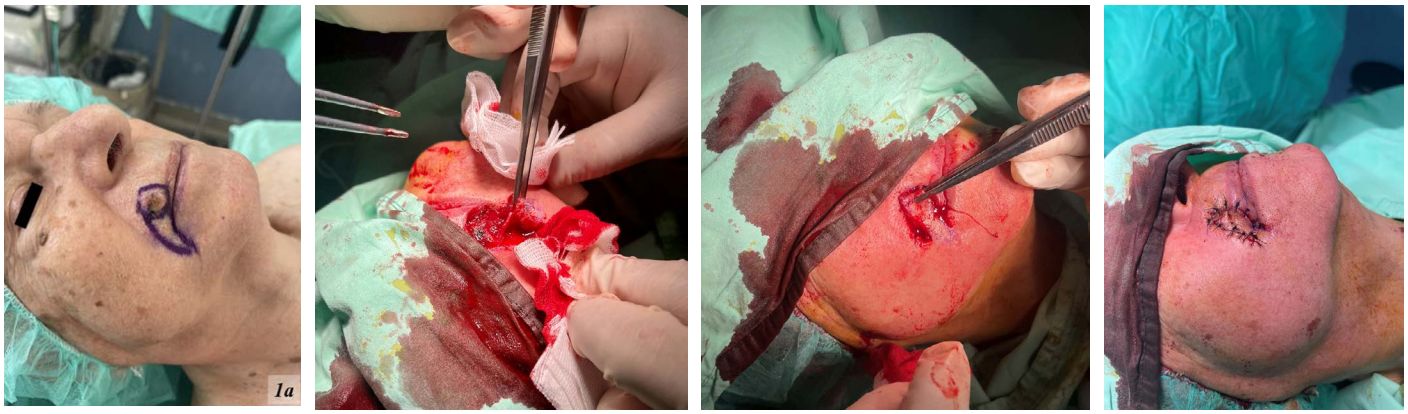

Figure 1. 1a: *A lesion suspicious for keratoacanthoma, localized adjacent to the upper lip. Marking of the incision margins.*
1b: *Surgical removal of cutaneous tumour and preservation of a. facialis.*
1c: *Adaptation of the flap prepared for transposition before its final transposition and fixation.*
1d: *Clinical condition immediately after fixation of the flap with single cutaneous stitches.*

Figure 2. 2a: *Clinical picture 3 days after surgery.*
2b: *Clinical picture after removing the sutures, day 11.*

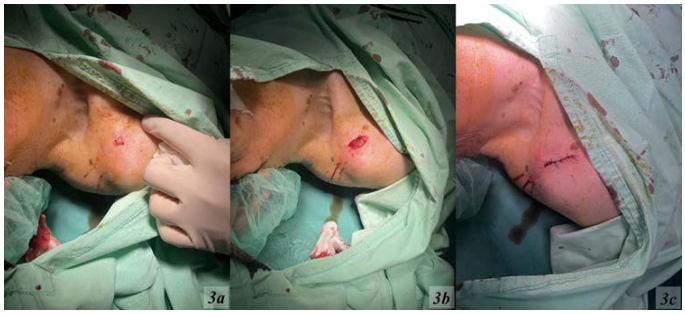

Figure 3. 3a: *Basal cell carcinoma in the right shoulder.*
3b: *Surgical removal of the tumor in the form of elliptical excision.*
3c: *Postoperative clinical finding immediately after closure of the defect with single skin sutures.*

However, the parameters of the contaminated drugs remain hidden to clinicians and patients, whereas the side effects are more than obvious [2-4].

The lack of a history of painful sunburns, as well as the negative family history of skin cancer in the published and analyzed patient, is further (albeit) indirect evidence for the potential presence of another possible pathogenetic inducer of keratinocytic cancer.

The categorization of the carcinogenic potency of the possible carcinogens available in the more than 250 drugs currently available [11], is also an occasion for profound reflections and conclusions, whether they are based on single or multiple cases.

Correlations or analyses/correlations could be made based on the potential availability of nitrosamines/NDSRIs in each drug [1], as well as regulator-defined carcinogenic potency (between 1 and 5) [11] with dose-dependent time intervals for cancer generation or determination of growth rates/local progression of cutaneous tumors, for example.

In the patient described here, of interest are (1) the time required to generate keratinocytic cancer within a given drug intake and (2) the growth rates of cancers within switching drug intakes that are affected by nitrosamines or NDSRIs with heterogeneous carcinogenic potency (determined by FDA between 1 and 5) [1,11].

The patient's initial drug intake includes Atenolol and Nifedipine for a period of three years. The contaminants (Nitrosamines/NDSRIs) in atenolol are classified as class 4 carcinogenic potency/ reference limits up to 1500 ng daily [1,11]. Contaminants in nifedipine are classified as class 5 carcinogens [1,11]. Changing the patient's medication after 3 years involved stopping atenolol and nifedipine and switching to treatment with 2 other medications: propafenone 150 mg twice daily in combination with amlodipine/valsartan 5/160 mg (1/2-0-1/2). Short-term after this switch, the patient noticed changes in the upper lip and shoulder area that became symptomatic within a few months. According to official data, valsartan contamination is associated with class 1 to class 2 potential carcinogens/ NDSRIs, corresponding to the carcinogenic potency of NDMA, NDEA or NMBA [12]. Propafenone, on the other hand, has been described as possibly being affected by carcinogens with class 2 potency according to the April 2023 FDA list [1].

Amlodipine - from class 5 potential carcinogens [1,11]. In the patient described, it is very likely that the change of antihypertensive medication led to the simultaneous manifestation of 2 epithelial tumors: basal cell carcinoma and keratoacanthoma. The reason could be seen as the bolus intake of several new drugs affected by potential contamination with new, even more potent carcinogens according to the FDA list (those in valsartan, propafenone, amlodipine), compared or related to the atenolol and nifedipine taken so far over a 3-year period.

For the first time in the world literature, the horizons of clinicians, cancer surgeons, oncologists, and dermatologists are being broadened and enriched, with a focus on the detailed analysis of new possible potent carcinogens in drugs-nitrosamines/NDSRIs.

The 2023 FDA list for cataloguing carcinogens and their potency is becoming the most serious credibility weapon in the fight against skin cancer and cancer worldwide [1,11]. This ″weapon″ finds its correlate in clinical practice in the face of cutaneous tumors.

Nitrosocontaminants in drugs of heterogeneous origin remain a problem [13]. Cancer prevention strategies pursued by regulatory authorities require: 1) the complete elimination of these carcinogenic compounds or 2) the minimization of their availability within defined limits [13].

The fact that in certain geographical areas this availability could be completely eliminated [14] is encouraging and indicative that the problem could be overcome, and permanently.

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