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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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MULTIPLE MUSHROOM-LIKE GROWING CYLINDROMAS OF THE SCALP (TURBAN TUMOR) IN A PATIENT WITH BROOKE-SPIEGLER SYNDROME: UNIQUE MANIFESTATION IN A BULGARIAN PATIENT

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Abstract.

Cutaneous cylindromas are rare, slow-growing adnexal tumors commonly found on the capillitium or face. When located on the capillitium, they can cluster together, forming a headgear-like structure that gives the characteristic "turban" appearance. Brooke-Spiegler syndrome, an autosomal dominant condition, is typically benign, though malignant transformation can occur.

We present a 61-year-old male with a 30-year history of mushroom-like formations, clinically and histologically confirmed as cylindromas, affecting approximately half of the hairy part of the capillitium.

In addition, an erythematous-livid plaque with ulceration and crusting was observed on both left and right lower legs. The patient was suspected of having a sporadic, non-inherited form of Brooke-Spiegler syndrome.

Surgical excision of the mushroom-like lesions was recommended. In cases of non-inherited forms of Brooke-Spiegler syndrome, early detection and preventative measures are critical. A brief discussion focusing on the management of the condition is provided, emphasizing whether true sporadic cases of Brooke-Spiegler syndrome exist or if they represent another clinically "silent" form of the condition.

Key words. Mushroom-like lesions, turban tumor, cylindromas, Brooke-Spiegler syndrome, surgery.

Introduction.

Cutaneous cylindromas are rare, slow-growing adnexal neoplastic lesions, typically located on the capillitium or face [1]. They are predominantly derived from apocrine cells in the dermis, specifically within the hair follicle bulge [1,2]. These tumor formations on the capillitium can cluster together, forming a headgear-like structure that gives the characteristic "turban" appearance [1,3]. Rarely, pulmonary cylindromas can develop in the large airways, potentially impairing the patient's breathing [1,4]. Men are rarely affected, with women being approximately nine times more likely to develop the condition [1].

The condition can be inherited or occur sporadically, with sporadic cases typically observed in older patients [1]. It may also present early in life, typically in the 20s or 30s, with multiple lesions, which are frequently linked with cutaneous syndromes such as Brooke-Spiegler syndrome, an autosomal dominant condition caused by mutations in the CYLD gene [1,5]. Although usually benign, malignant transformation can rarely occur with fewer than 50 cases reported in the literature [6].

Case report.

A 61-year-old man presented to the dermatology department with a primary complaint of nodules, swelling, and redness on the anterior surfaces of his lower legs and feet, persisting for the past three weeks (Figures 1a & 1b). He also complained of pain and itching both at rest and during movement.

The patient's medical history includes arterial hypertension, non-insulin-dependent diabetes mellitus, diabetic polyneuropathy, ischemic heart disease, atrial fibrillation and flutter, mixed dyslipidemia, hypertensive heart disease without congestive heart failure, idiopathic gout, and arthropathic psoriasis. The patient is currently taking the following medications: glimepiride 6 mg, metformin hydrochloride 1000 mg, empagliflozin/linagliptin 10 mg, bisoprolol fumarate 10 mg, ivabradine 7.5 mg, amlodipine 5 mg, allopurinol 100 mg, doxazosin 7.5 mg, and etoricoxib 90 mg. The patient also reports an allergy to contrast material.

Dermatological examination revealed an erythematous-livid plaque with ulceration and crusting located on the medial surface of the left lower leg (Figure 1a) and the second toe of the right foot (Figure 1b). In the scalp region, exophytic tumor-like formations were observed, presenting as multiple confluent, monomorphic growths with a gyri-sulci like pattern (Figures 2a & 2b). These mushroom-like formations clinically resembled cylindromas or spiradenocarcinomas, involving approximately half of the hairy part of the capillitium (Figures 2a & 2b). The patient reported a 30-year history of these lesions

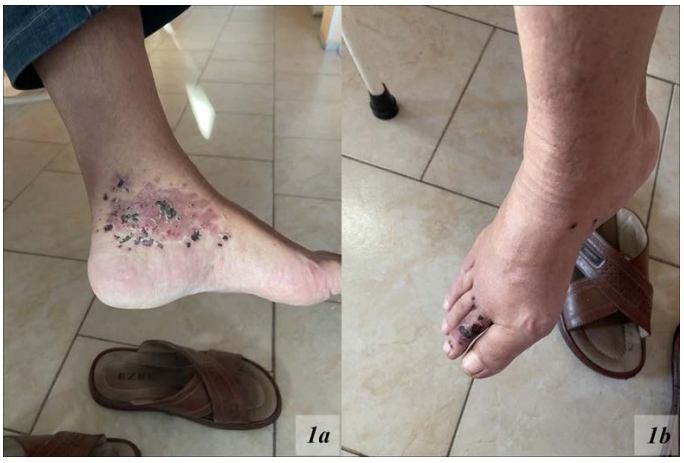

Figure 1a,b. *An erythematous-livid plaque with ulceration and crusting located on the medial surface of the left lower leg (a) and the second toe of the right foot (b).*

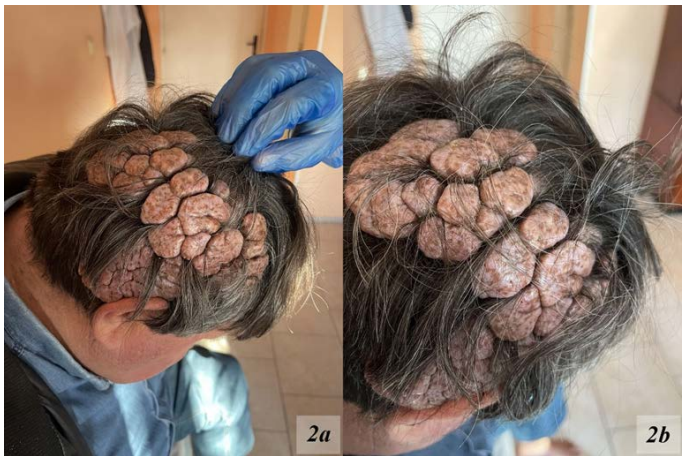

Figure 2a,b. *Exophytic nodular formations, confluent into a dense plaque observed enclosing the capillitium.*

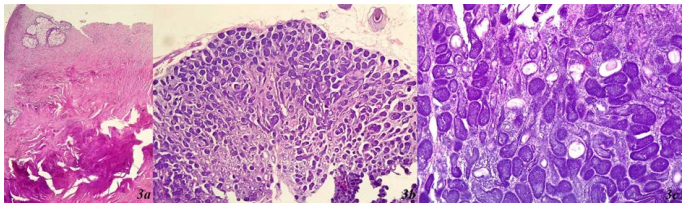

Figure 3a-c. *Histology panel: Marked ortho- and follicular hyperkeratosis, irregular acanthosis with elongation and owl-like dilatation of the distal parts of the epidermal ridges. The dermal compartment is densely hyalinized, with an underlying proliferation of atypical basaloid keratinocytes forming zig-zag-shaped, multi-caliber nests, surrounded by an eosinophilic periphery and demarcated by mucinous, well-vascularized stroma.*
3a: *Hyalinized cylindroma x HE x 40.*
3b: *Cylindroma x HE x 40.*
3c: *Cylindroma x HE x 100.*

with no family history of similar occurrences (none in the mother, father, grandmother, or grandfather), suggesting the possibility of a sporadic, non-inherited form of Brooke-Spiegler syndrome. Additionally, he has a son who is also unaffected by the condition.

Regarding the lesions on the anterior surface of the right and left lower legs, the differential diagnosis included vasculitis, microembolization, and lichen aureus. Two punch biopsies were performed. The biopsy taken from the left lower leg showed no evidence of vasculitis. Instead, it revealed reactive changes consistent with congestive heart failure and microangiopathy. The biopsy taken from the formation covering the capillitium revealed marked ortho- and follicular hyperkeratosis, irregular acanthosis with elongation and owl-like dilatation of the distal parts of the epidermal ridges. The dermal compartment was densely hyalinized, with an underlying proliferation of atypical basaloid keratinocytes forming zig-zag-shaped, multi-caliber nests, surrounded by an eosinophilic periphery and demarcated by mucinous, well-vascularized stroma. The histological findings were consistent with cylindroma (Figure 3a-c). The patient was suspected of having Brooke-Spiegler syndrome. Surgical removal of the tumor formations on the capillitium was recommended under general anesthesia. The patient declined surgical interventions and genetic testing for a CYLD gene mutation due to personal reasons.

Outpatient regimen with pentoxifylline 600 mg twice daily, acetylsalicylic acid 100 mg once daily, and heparin sodium gel 1000 ml applied twice daily to the lower leg for 10 days was prescribed. Additionally, potassium permanganate compresses were applied twice daily to the same area until the resolution of the crusts. After consultation with a cardiologist, trimetazidine dihydrochloride 35 mg twice daily was added to his existing therapy.

Discussion.

The familial etiology of the condition is significant and has been consistently emphasized in the scientific literature [7]. Patients with Brooke-Spiegler syndrome exhibit various mutations in the tumor suppressor gene CYLD, located on chromosome 16q [8]. More than 50 germline mutations in the CYLD gene have been identified, whereas somatic CYLD mutations remain largely understudied [8].

Individuals with Brooke-Spiegler syndrome inherit a mutation in one of the two copies of the CYLD gene present in all their cells [9]. As a result, the altered copy of the CYLD gene is unable to produce a functional CYLD protein [9]. The normal copy of the CYLD gene typically produces enough protein to regulate the cell growth effectively [9]. For a tumor to develop, a second mutation or a deletion affecting the remaining copy of the CYLD gene must occur in certain cells throughout the course of life [9]. When both copies of the CYLD gene are affected, the production of functional CYLD protein is disrupted [9]. The absence of this protein leads to the loss of its regulatory role in cell growth, allowing the affected cells to proliferate without control, resulting in a tumor formation [9]. The absence of CYLD protein in various skin cells contributes to the formation of different skin appendage tumors [9]. This raises an intriguing question: Are cases labelled as “sporadic” Brooke-Spiegler syndrome truly sporadic, or could they represent autosomal dominant inheritance where the second mutation has not yet been identified or activated? This possibility highlights the need for further genetic research to gain a deeper understanding of these underlying genetic mechanisms.

An article by Sima et al. [8] showed that somatic events, sequence mutations, or loss of heterozygosity, may vary among multiple tumors of the same histologic type within the same patient.

Various somatic mutations, including loss of heterozygosity, a recurrent nonsense mutation, and a sequence mutation causing exon skipping, were observed in a case of Brooke-Spiegler syndrome with germline mutation in the CYLD gene [10].

These somatic alterations were detected in 4 different cylindromas that were removed from the patient [10].

The absence of definitive genotype-phenotype correlations and the presence of patients without germline CYLD mutations have been also established [11]. Grossmann et al. [11] conducted a study examining germline and somatic mutations of the CYLD gene in patients with Brooke-Spiegler syndrome (n=49) and multiple familial trichoepitheliomas - a phenotypic variant of Brooke-Spiegler syndrome (n=18) using peripheral blood and 90 selected out of 379 available histological samples. Among 76 tumors from 32 patients with germline mutations, 26 were identified as cylindromas [11].

Somatic mutations were observed in 67 specimens of the 76 tumors (88%) [11].

Among these somatic mutations, 21 (31%) were sequence alterations, 46 (69%) exhibited loss of heterozygosity [11].

In the remaining 9 cases (12%), the nature of the somatic changes could not be determined [11].

Additionally, in 14 tumor samples from 8 patients without germline mutation, somatic mutations were identified in 6 samples (43%) all consisting of sequence alterations; one sample even contained 2 distinct sequence alterations [11].

In the last 8 samples (53%) no germline or somatic mutations were identified [11].

The genetic basis of multiple cylindromas is well-established but remains incompletely understood.

Cases such as the one we present suggest that turban tumors, within the context of multiple scalp cylindromas, may arise independently of autosomal dominant inheritance [1]. Clinical findings, including the absence of phenotypic expression in the patient's children, parents, and grandparents, provide further evidence supporting this possibility. However, the hypothesis that there are no sporadic cases of Brooke-Spiegler syndrome, but rather only inherited forms where the second "activating" mutation is absent, remains a possible explanation. In either case, further research is necessary to confirm one of the aforementioned hypotheses.

Rare and problematic cases are significant because even benign tumors can cause serious challenges and potential complications such as unilateral hearing loss [12]. At the time of the consultation, no potential complications related to the syndrome were identified in our patient. Discomfort was experienced due to the clinical appearance of the tumors.

The treatment of Brooke-Spiegler syndrome remains complex due to the rarity of the condition [13]. Different therapeutic approaches have been employed, including surgical excision, electrodesiccation, dermabrasion, cryotherapy, radiotherapy, and laser treatments such as argon, CO2, and erbium: Yag CO2 lasers [14,15]. Sodium salicylate and prostaglandin A1 are being explored for their potential to restore growth control by inhibiting NF-B activity [14,16]. Additionally, therapies such as a combination of aspirin and adalimumab, and topical imiquimod, have shown potential [13]. Systemic chemotherapy or targeted therapies, including sonic hedgehog inhibitors like vismodegib, have demonstrated some efficacy [13].

"Scalp-sparring" approaches, such as early primary excision or tumor enucleation with direct skin closure, as well as excision followed by secondary wound healing, are among the techniques employed in the treatment of cylindromas [5]. Infiltration of the deep compartment can sometimes pose a significant challenge, resulting in persistent and long-lasting consequences for the patients [17]. For these patients, the surgical approach is the most preferred and effective treatment; however, it can be challenging to perform in areas such as the capillitium and face [18]. In difficult cases involving the scalp and face, scalp excision and combined reconstruction with artificial dermis and split skin graft can be an effective approach [18].

A case of sporadic cylindroma in the external auditory canal required five stages of surgical intervention to achieve complete removal [19,20]. The estimated recurrence rate of these lesions after surgical excision is reported to be approximately 42% [20,21]. For smaller tumor formations, techniques such as hyfrecation or laser ablation may be used, whereas Mohs micrographic surgery is an option for recurrent cases [5].

Conclusion.

The mutation pattern plays a crucial role in determining whether phenotypic manifestation will occur. In the absence of a triggering or terminating second mutation, this manifestation may not appear until several generations later. This delay in phenotypic presentation highlights the complexity of genetic inheritance and the role of additional factors in genetics.

A thorough investigation into potential causes or external factors contributing to the development of these tumors is crucial.

Understanding the role of non-inherited mutations in the pathogenesis of this syndrome should be a priority.

It is still a mystery whether sporadic cases of Brooke-Spiegler syndrome exist, as some of these cases may simply represent inactive forms of the syndrome, where the second mutation required for full phenotypic manifestation has not yet occurred. In such cases, the disease may remain clinically "silent" until the second mutation or trigger is present, leading to the classical clinical presentation of the tumors. This suggests that what is often considered a sporadic case might actually represent a "silent" autosomal dominant form of the disease.

In either case, prevention plays a crucial role, with surgical excision being one of the most studied and preferred options for management, particularly in achieving disease-free rates.

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