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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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TERATOMAL NEOPLASMS OF THE PERICARD: THE PROBLEM AND REALITIES (CLINICAL CASE)

V.V. Talash, I.P. Katerenchuk, Iu.A. Kostrikova, T.I. Yarmola, G.L. Pustovoit, L.A. Tkachenko.

Poltava State Medical University, Ukraine.

Abstract.

The article presents a difficult-to-diagnose clinical case of progressive growth of two intrapericardial dermoid cysts in a 42-year-old man, diagnosed only 6 months after acute transdermal poisoning with lithium salts (Litol 24), which the patient, on his own initiative, used locally for the treatment of existing psoriasis.

The peculiarity of this clinical case lies in the fact that, due to the extremely rare occurrence of intrapericardial dermoid cysts, their presence was perceived by doctors as hydropericardium. Therefore, untimely diagnosis of the cause of compression syndrome created a threat of tamponade of the patient's heart. At the same time, surgical treatment not only improved the patient's condition and quality of life, but also relieved him of skin rashes on his body.

This clinical case can supplement the global statistical indicators of the diagnosis of these neoplasms of the pericardium with the successful treatment of the patient.

Key words. Pericardial teratoma neoplasms, intrapericardial teratomas, pericardial dermoid cysts, lithium.

Introduction.

Dermoid cysts (DC) are quite rare neoplasms, accounting for 3–4% of all germ cell tumors and less than 1% of all tumors [2,23]. Mediastinal dermoid cysts account for 3 to 12% of cases [5,23,29], according to some data, from 14 to 18.5% of all benign mediastinal tumors [2,8,11,27].

According to the generally accepted classification of DCs, they belong to primary, that is, congenital neoplasms, the cause of which lies in dysembryogenesis. It is noteworthy that their formation begins at approximately 4–5 weeks of intrauterine development. Due to the fact that these cysts are derivatives of two or three germ layers, they contain derivatives of ecto-, meso- and endoderm, therefore they develop as differentiated organs, the so-called mature cystic teratomas [2,11,23,29].

One of the types of DCs is pericardial dermoid cysts (PDC), in other words – intrapericardial teratomas (IPT). It should be noted here that they are extremely rare [5,8,23,29]. The first recorded case of IPT was described in 1890 by Joel. As of 1974, only 31 cases of PDC were registered [11]. From that time to May 2022, we were able to find 10 more cases of IPT [11,24], 6 of which were diagnosed antenatally.

PDC was most often diagnosed in infants [2,8], older children [2,5,17,20,23], and young people [2,9,11,29]. However, there are separate reports of their detection in the fetal period [24] and in patients in the third period of adulthood [14,28]. In addition, they were equally common in both sexes.

R. Wilson and co-authors report that 40 % of pericardial teratoma tumors are true teratomas, i.e., pericardial cells were found in them, in 12 % of cases, ciliated epithelium, secretory glands, smooth muscles, cartilage characteristic of bronchi were found in 4 % – the histological structure was typical for DC. They report the presence of hair follicles, skin, hair, sebaceous glands, epidermal scales, crystallized cholesterol, detritus, mesoderm elements: bone, muscle tissue, lymphatic vessels, cartilage, teeth [2,23] and endodermal elements: bronchial, gastrointestinal epithelium, pancreatic cells, and others [5,8,11]. Others were malignant. According to the histological picture, the predominant tumors were mesotheliomas and sarcomas, although there are cases of detection of leiomyomas, hemangiomas, and even lipomas [11,13,29].

PDC most often (up to 77 %) occur in the right mid-diaphragmatic space, less often (22 %) - in the left, sometimes (1 %) - in any other place adjacent to the heart [2,5,9,11,19,23,30].

Depending on the number of structures, they can be both single and multiple, one-, two-, and multi-chambered. Often, they are tightly connected to the pericardium at some point, sometimes they are attached to it with the help of a fibrous cord [2,16,21,23,30]. IPT can reach significant sizes, up to 20–25 cm in diameter [14,16,21,27,30].

Most IPTs are characterized by extremely slow growth. Therefore, for a long time, these neoplasms of the pericardium (NP) may not manifest themselves clinically, and their diagnosis may be an accidental finding during the examination and, even, during the autopsy, after the death of the patient from hemorrhage due to rupture of the aorta [11,13], pericardium [19], cysts [9], or from other reasons not related to the progression or complications of DC [27,29,30].

It is noteworthy that IPT in children, as a rule, were symptomatic. Under this condition, the symptoms that developed in patients indicated cardiac tamponade. At the same time, a long-term asymptomatic course was inherent in patients of older age groups [11,27]. However, as a result of the action of various provoking exo- or endogenous factors, these neoplasms of the pericardium can progress rapidly. Under this condition, they manifest themselves as symptoms of compression of adjacent anatomical structures, which depend both on the localization of the DC and on its size with the development of life-threatening complications. Cardiac tamponade is reported [11,14,16,20,23,24,25]; erosion of the superior vena cava and/or the free wall of the right ventricle; cyst breakthrough in the bronchus; bleeding due to cyst rupture [7,22], cyst rupture in adjacent areas such as the pleura, pericardium, lungs, or bronchi [11,13,25,30]. In addition to them, there are reports of obstruction of the right main bronchus, pulmonary artery and its stenosis, development of atrial fibrillation, mitral valve prolapse, heart failure [8,16,20,29]; septic condition [7,25], and even malignant transformation of these cysts. [13,18,25,30].

Therefore, with the progressive growth of these cysts, there is a potential threat both to the course of the disease and to the prognosis of the patients lives.

As for the predictors of the progression of NP, the versions of traumatic factors with hemorrhage into its tissue, the influence of hormonal disorders, concomitant purulent-inflammatory and infectious diseases, and immunodeficiency states (including HIV infection) have been confirmed. The role of heredity is also not excluded. Although the hereditary factor is not considered statistically confirmed, geneticists continue to study the phenomenon of embryogenesis disorder and its connection with the formation of DC [2,8,23,24,29].

Diagnosis of PDC in patients is the most difficult, in particular due to the long asymptomatic course of the disease [11,15,19,29].

If symptoms of compression syndrome [11,14,16,20,23,24,25]; or symptoms related to complications of PDC appear, careful differential diagnosis should be carried. For this purpose, the diagnostic examination often begins with a chest X-ray (CXR) [11,15,19,26,29,30], transthoracic echocardiography [2,11,16,19,20,24,27,28,29]. In order to visualize the entire pericardium and more specifically characterize the pathological process in it, it is necessary to use the methods of computer (CT) and magnetic resonance imaging (MRI) of the chest organs with contrast [8,15,18,22,23,25,28,30]. In some cases, angiocardiography is used, which helps differentiate intra-pericardial and mediastinal neoplasms that displace the heart along its longitudinal axis. Cytological examination of pericardial effusion, carried out after pericardial puncture, will help to exclude, or confirm infection and suppuration of these cysts. To exclude the neoplastic nature of this neoplasm, histological verification is also necessary, by aspiration biopsy of these cysts [13,28,30].

Treatment of PDC depends both on the presence of symptoms of their progression or complications, and on the degree of severity of these symptoms. In the case of an asymptomatic course of the diagnosed teratoma, in the absence of a risk of life-threatening complications for the patient, some scientists suggest active monitoring of the patient's condition.

Since teratomas are considered benign neoplasms, surgical resection, or aspiration of mediastinal and/or pericardial DC contents is usually performed for symptomatic indications. However, there is an opinion that complete surgical removal of such DCs should be carried out as early as possible, in order to prevent their progressive growth [7,23,29], development of complications or malignization [11,13,25]. In addition, a very low risk of recurrence is reported [13,18,30]. In the condition of their malignancy, surgical treatment is very difficult and unpredictable in view of the malignant process, invasive growth that accompanies these tumors, adhesion of the cyst to the broncho-pulmonary tissue, pericardium, main vessels, and unpredictable complications that may arise during surgery in view of it [15].

The relevance of the clinical case described below is not in doubt, since in the scientific and educational literature very little attention is paid to pericardial cysts, compared to other neoplasms of the heart and pericardium [15], and the suspicion of the presence of DC of the mediastinum arises, unfortunately, only after the development of compression syndrome [11,14,16,20,23,24,25]; In addition, the threat of cardiac tamponade that occurred in the patient was not related to the intra-pericardial rupture of the cyst, or to its spontaneous hemorrhage, which is described in the available literature [9,19], but to a progressive increase the volume of two DCPs in a short period of time. In addition, if we refer to the data of the scientific literature, then this clinical case, according to our data, is the 42nd in world statistics and the 1st in Ukraine.

At the same time, the available literature lacks any data on the effect of lithium salts on the manifestation of the growth of these neoplasms. Therefore, the features of this clinical case identified by us can to some extent supplement the etiopathogenetic links of the progression of intrapericardial DCs [1,12].

Case Presentation.

Patient P., 42 years old, came to the doctor on 16/07/2021 with complaints of shortness of breath of a mixed nature during slight physical exertion and at rest, which increased during his stay in a lying position, periodic pain in the area of the heart, of an aching nature, constant heartbeat, psoriatic rashes on the skin, weight loss (lost 5 kg in 6 months), general weakness.

From the anamnesis of the disease, it is known that he considers himself sick for 6 months. The disease made its debut on December 31st 2019, when, after 6 days of application of machine oil (Litol-24) to psoriasis-affected skin areas, according to a method taken from Internet resources, he noted the appearance of progressive weakness, deterioration of appetite, and an increase in body temperature to a subfebrile level . He did not seek medical help. On January 6th 2020, the condition suddenly worsened: blood pressure (BP) decreased to 90/60 mm Hg., dizziness appeared, the amount of excreted urine decreased (300–350 ml/day), weakness increased. He was urgently hospitalized in the therapeutic department of the district hospital. During the examination: complete blood count (CBC): leukocytosis (leukocyte – 9.8x10^9/l) with a shift of the leukocyte formula to the left (rod nuclear (r/n) – 7 %); biochemical blood analysis: blood creatinine – 265 μmol/l, urea – 20 mmol/l), sodium – 134 mmol/l, urine analysis: specific gravity: 1010, proteinuria (protein - 0.045 g/l), erythrocyturia (er. – 4–6 in the f/v.).According to the electrocardiogram (ECG), sinus tachycardia and prolongation of the QT interval were detected. According to the data of the medical documentation, no significant violations of general hemodynamics were observed. Identified changes in laboratory indicators, complaints and anamnesis data indicated the development of acute kidney injury (AKI). The treatment was carried out according to the recommendations of the clinical protocol for providing medical care to patients with acute renal failure [3]. The patient's condition improved, kidney function was gradually restored, blood biochemical parameters normalized, polyuria was noted. On the 3rd day of treatment, a positive clinical result was achieved: the daily diuresis was already 3.5 liters. However, since January 9, 2020, the patient began to notice swelling of the skin, a feeling of tightness and itching. At the same time, the severity of psoriatic rashes has changed - they have become generalized. After a consultation with a dermatologist, he was transferred for further treatment to a skin-venereal dispensary with a diagnosis of Psoriatic erythroderma. State after acute renal failure (January 6, 2020),

stage of recovery of diuresis. Transdermal lithium poisoning (Litol 24).

On 01.25.2020, against the background of continuing therapy, the patient developed intense pain in the epigastric area of a shingles nature, nausea and vomiting appeared. The condition was interpreted as the development of acute pancreatitis in the patient, who was transferred for further treatment to the surgical department of the city hospital. During the analysis of medical documentation, changes in laboratory indicators were found, which confirmed this diagnosis. In the complete blood count: leukocytosis (13.0x10^9/l), acceleration of ESR (40 mm/h), in the urine analysis - proteinuria (protein – 0,045%), leukocyturia (9–11 in in the f/v), erythrocyturia (4–6 in in the f/v), increased level of diastase in urine (128 units). Treatment was prescribed according to the recommendations of the clinical protocol for providing medical care to patients with acute pancreatitis [6]. Sinus tachycardia (heart rate 116/min.) was registered on the ECG for the first time. The electrical axis of the heart at that moment was vertical. During the ultrasound examination of the abdominal organs (01/27/20), in addition to ultrasound signs of pancreatitis, ultrasound signs of chronic cholecystitis, hepatosis, splenomegaly, right-sided nephroptosis, and left-sided hydrothorax were also detected. These changes in the results of laboratory and instrumental indicators were associated with the consequences of the toxic effect of lithium.

On January 29, 2020, at night, the patient's condition suddenly worsened, marked weakness appeared in the legs, the patient lost consciousness, and involuntary urination occurred. To verify the diagnosis, a multispiral (MS) computed tomography (CT) of the brain was performed urgently. According to her data, MR-signs of circulatory/vascular encephalopathy were found; expansion of subarachnoid spaces, lateral ventricles (mild mixed hydrocephalus); vertebral atrophy on the background of moderately pronounced atrophy of the cortex in the fronto-parietal area; microangiopathy Fazekaz qr 1; sinusitis; osteochondrosis and protrusion of the vertebrae of the cervical spine up to C 5; deforming spondylosis of the cervical spine. Consulted by a neurologist, related specialists. These results could be interpreted in two ways: as a manifestation of the toxic effect of lithium, which was repeatedly reported in the literature, and as the presence of chronic processes in the patient that had not been diagnosed before.

Taking into account the patient's condition, the results of previous studies, recommendations of consultants, antibacterial, antihypertensive, diuretic, desensitizing, metabolic therapy, non-steroidal anti-inflammatory drugs (NSAIDs), membrane stabilizers, group B vitamins and potassium preparations were added to the treatment. Despite the prescribed treatment, the patient's condition remained of moderate severity, he was disturbed by pronounced weakness in the right arm and legs, especially in the right, paresthesia, rash on the skin, general weakness, increased fatigue. In addition, shortness of breath appeared, which worsened during moderate physical exertion. There were no assumptions that this could be the debut of DC progression.

ECHO CS from 01.30.2020 for the first-time revealed ultrasound signs of thickening of the interventricular membrane, expansion of the heart cavities, hydropericardium, pancarditis and a decrease in the contractility of the left ventricle (LV). On the basis of these data, it was assumed that the patient developed toxic cardiomyopathy.

MS CT scan of the abdominal cavity with intravenous contrast enhancement (January 30, 2020) confirmed the presence of hydropericardium (fluid, 24 mm thick (maximum) and left-sided hydrothorax (up to 7 mm thick) in the patient). In addition, mediastinal expansion was detected for the first time due to cardiac shadow and cardiac chambers At that time, it was obvious that the detected changes could be related to the enlargement of the heart, which could be a sign of pancarditis detected during ECHO CS on the background of toxic cardiomyopathy. There were no assumptions about the tumor genesis of the detected changes. The appearance of fluid in the pleural cavity has also been associated with the toxic effect of lithium. Taking into account the small volume of the hydrothorax, pleural puncture was impractical. In addition, CT signs of liver enlargement (size up to 200 mm in craniocaudal size along the mid-clavicular line) with diffusely reduced density of its structure were found. An increase in the diameter of the portal vein (up to 16.3 mm) and a slight increase in para-aortic, mesenteric, and pelvic lymph nodes (up to 4–7 mm) were recorded. In BAC, an increase in the level of creatinine (131 μmol/l) and urea (18.5 mmol/l) was again recorded. This required further examination and treatment of the patient.

Erythematous gastroduodenopathy was detected during fibrogastroduodenoscopy (FGDS). Correction of treatment was carried out.

On February 3rd, 2020, the patient's condition worsened again - the feeling of shortness of breath increased during minor physical exertion. To clarify the diagnosis, MS CT of the thoracic organs was performed (Figure 1).

The results of the study indicated the negative dynamics of changes: the hydrothorax spread to both lungs (more on the left), in addition, signs of basal pneumofibrosis were detected, which could be the cause of the progression of shortness of breath. Signs of hydropericardium persisted. These data indicated both the ineffectiveness of the prescribed therapy and the progression of cardiac pathology and pathology of the bronchopulmonary system.

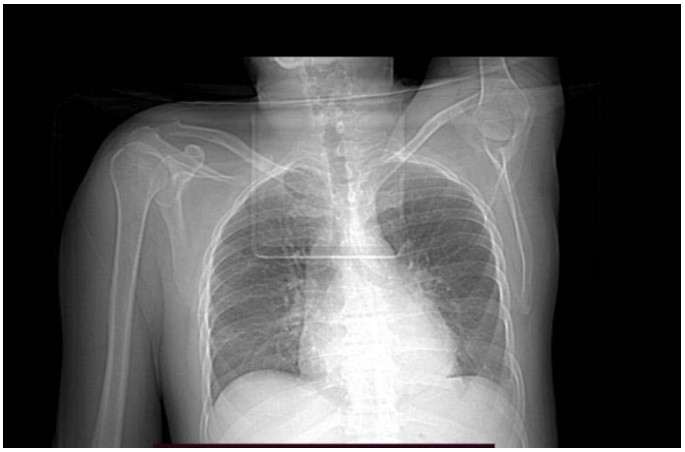

Figure 1. *CT of the thoracic organs. Patient P., 42 years old (description in the text).*

On the same day, the patient suddenly felt short of breath, palpitations. According to the data of the medical documentation: during the examination: pronounced pallor of the skin, increased sweating, dulling of the percussion sound in the lower parts of the lung fields, weakening of vesicular breathing, isolated wet rales in the same area, muffled heart sounds, tachycardia, arrhythmia, arterial hypotension (BP below 90/60 mm Hg). On the ECG, there is a paroxysm of atrial flutter. In connection with the pronounced arterial hypotension against the background of the development of acute heart failure, electrical cardioversion was performed with a positive clinical effect - the heart rhythm was restored. ECG shows sinus tachycardia (heart rate 116/min). Violation of repolarization of the anterior-lateral area of the LV was registered. Prescribed therapy according to the protocol for providing medical care to patients with atrial fibrillation (flutter) [4]. and metabolic therapy [10].

During the further examination of the patient, it was established that the number of leukocytes ($8.0x10^9$/l), creatinine (98 μmol/l), urea level decreased to 9.0 mmol/l), Hb - to 114 g/l, and lymphocytopenia was noted (11 %), and the ESR accelerated to 54 mm/h.; in the urine analysis, proteinuria and erythrocyturia remained at the same level, leukocyturia decreased to 3–5 in f/v, while other indicators were without significant dynamics; ECG results were without dynamics. After the treatment, the patient's condition improved slightly, but inspiratory shortness of breath with slight physical exertion, psoriatic rashes on the skin, weakness in the legs and right arm remained.

On February 11, 2020, he was discharged from the hospital with the diagnosis: Transdermal poisoning with lithium salts (Litol 24). Psoriatic disease, stage of exacerbation. Erythroderma. Toxic-allergic vasculitis with myofascial syndrome. Polyserositis (pleurisy, pericarditis). Secondary toxic myocardiopathy. Paroxysmal atrial flutter (February 3, 2020 –electrical cardioversion). CHADs VASc-HAS-BLSD-26. HF II B st., FC III. State after acute renal failure (January 6, 2020), stage of recovery of diuresis. Secondary toxic-psoriatic encephalopolyneuropathy with tetraparesis, mild vestibulo-atactic syndrome, right-sided hemipaesthesia. DE II st. (vascular-according to MRI data).

He continued outpatient treatment at his place of residence. According to laboratory-instrumental indicators, no significant dynamics were noted. Attention is drawn to the data of the ECHO CS dated 02/04/20, which indicate the presence of Uz-signs of reduced heart contractility, pancarditis, on the ECG – constant tachycardia and changes indicating the rotation of the heart's axis to a horizontal position.

From 03.03. to 03/27/2020 - was treated in the therapeutic department of the district hospital for the above-mentioned diagnosis, but the condition did not improve, shortness of breath progressed, heart palpitations, paresthesias in the legs disturbed, general weakness, no significant changes in the research results were also found. Immediately after discharge from the hospital, the patient developed pulmonary edema. During chest x-ray No. 2906, infiltration was found in the lower lobe of the left lung, signs of fluid in both pleural cavities. The changes were interpreted as signs of hospital-acquired left-sided pneumonia complicated by bilateral exudative pleurisy. From March 27th to April 17th, 2020, he again underwent a course of inpatient treatment at the district hospital. Despite the massive antibacterial and glucocorticosteroid therapy, the infusion of cardiovascular drugs in combination with diuretics did not have a pronounced effect both clinically and in the dynamics of laboratory-instrumental indicators. There were constant signs of nonspecific inflammation (leukocyte – $9.40x10^9$/l ($9.6x10^9$/l), ESR - 28 (15) mm/h), an increase in the level of fibrinogen to 7.23 g/l; on ECG: sinus tachycardia, heart rate 120/min. Diffuse violation of repolarization processes in the myocardium; in the dynamics of ECHO CS, there were signs of thickening of the interventricular membrane (IM), hydropericardium, pancarditis, expansion of the heart cavities on the background of a progressive decrease in the contractility of the LV myocardium. As for the pericardium, in its cavity, on the back wall, liquid was constantly detected with a level ranging from 43 to 51 mm. Here it should be noted that during the 3 months of illness, its number compared to the ECHO-CS from 01/30/20 increased almost 2 times. On the ECG from 04/03/20 – sinus tachycardia (heart rate 100/min), horizontal electrical axis of the heart, signs of systolic load on the LV.

After the symptomatic treatment, he was discharged to continue the treatment in an outpatient setting. Since that time, the patient's condition gradually worsened - shortness of breath progressed, constant heart palpitations bothered him, and general weakness increased. At the same time, he noted the loss of body weight. The prescribed treatment was ineffective. This lasted for 3 months. During this time, shortness of breath reached an extreme degree of severity, to the point that the patient could not perform minor physical exertion and even lie down, was disturbed by constant heartbeat, general weakness. In addition, the patient lost weight (by 5 kg in 6 months), and psoriatic rashes on the skin became generalized (Figure 2).

From the history of life: since 1998, he suffered from psoriatic disease, in 2014 he was diagnosed with hypertension, degree 2, stage II, moderate risk.

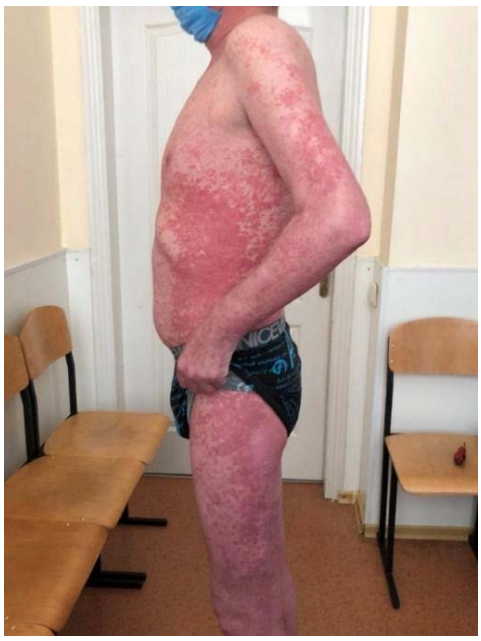

Figure 2. *Erythematous psoriatic rash on the body of patient P., 42 years old.*

On examination: orthopnea. Acrocyanosis. On the skin of the lumbar region, anterior abdominal wall, chest, upper and lower limbs, there are widespread psoriatic eruptions of an erythematous nature with a tendency to erythroderma (Figure 2).

Peripheral lymph nodes are not enlarged. The frequency of respiratory movements is 24 per minute. Breathing is vesicular, somewhat weakened in the lower parts of the lung fields. There are no wheezes or crepitations. Pulse – 120 bpm, blood pressure – 110/70 mm Hg. The left border of cardiac dullness is shifted 0.5 cm outside the midclavicular line in the V intercostal space. Heart tones are sharply weakened. The liver protrudes from under the edge of the costal arch by 2 cm and was sensitive during palpation. No changes were detected on the part of other bodies and systems. Diuresis was normal.

During examination (July 16, 2020): Hb: decrease in Hb level to 114 g/l, acceleration of ESR to 34 mm/h. Other indicators and results of biochemical blood analysis, coagulogram and urine analysis were without pathological changes; ECG: heart rate 120/min. The rhythm was sinus. Horizontal position of the electrical axis of the heart. LV hypertrophy with changes in the myocardium; ECHO CS – ultrasound signs of dilatation of the left atrium, reduced contractility of the left ventricle, exudative pericarditis with the threat of cardiac tamponade; X-ray of chest organs in direct projection showed that lung fields were transparent, the sinuses were free, and the roots of the lungs were covered by an extended median shadow. It was visualized as a pear-shaped homogeneous formation with relatively even upper-external contours (Figure 3).

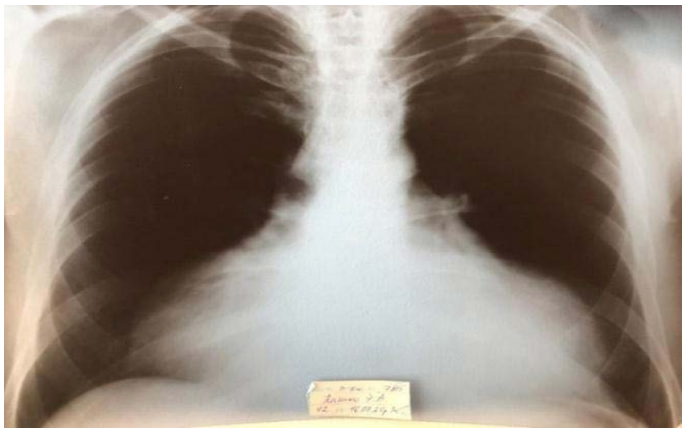

Figure 3. *An X-ray of the chest organs of patient P., 42 years old, dated 07/16/2020, indicates an expansion of the silhouette of the heart against the background of the absence of pathology from the side of the lungs.*

The expansion of the median shadow was interpreted as a significant expansion of the heart in its diameter. When comparing this x-ray with data from a CT scan of the chest organs from February 3, 2020 (Figure 1), we can clearly see the negative dynamics of this process in 5 months. We should have dealt with its cause.

To verify the cause of the detected changes, on July 17th, 2020, an MS CT scan of the chest with contrast enhancement (Ultravist 370 – 150 ml (in/in)) was performed. According to its data, two large (size: 16.2x8.6x11.0 cm and 7, 2x4.8x6.5 cm) volumetric neoplasms of a cystic structure with a thick (up to 3–8 mm) wall to the right and in front of the heart and to the left and behind the heart, which compressed it. They could be recognized by their semi-oval shape with clear contours, smooth, a slightly bumpy surface and the presence of a clear density of homogeneous fluid in them (Figure 4).

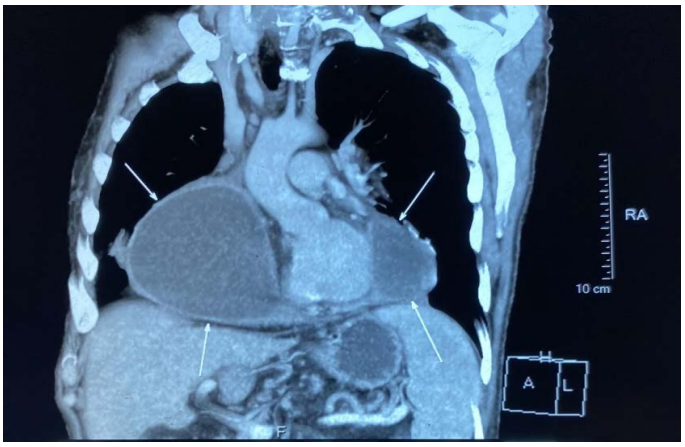

Figure 4. *An enlarged fragment of the MS CT film of the chest organs of patient P., 42 years old, dated 07/16/2020, which clearly shows how these voluminous cystic formations compressed the heart (shown by arrows).*

All signs indicated the presence of mediastinal and/or pericardial cysts.

At the same time, the mediastinum was not displaced, as could be assumed from the radiograph of the chest organs (Figure 3), but expanded due to the detected neoplasms and multiple enlarged lymph nodes (LNs), the largest of which is the lower paratracheal one on the right (2.1x0.9 cm), subcarinal LNs (2.6x1.4 cm) and LNs in the roots of the lungs (2.0x1.5 cm). In addition to them, numerous LNs were found in the axillary areas, the largest of them: on the left – 2.1x1.2 cm and on the right – 1.9x1.2 cm, less pronounced LNs of the para-aortic groups.

Considering the obtained results, we continued the diagnostic search for the correct choice of treatment tactics. After consultation with the cardiologist of the regional hospital, the main focus was on differential diagnosis with dermoid, bronchogenic, hydatid cysts, thymus cyst, thymoma, thymus neuroendocrine tumor, lymphoma, lymphangioma, Morgan's hernia, lymph node metastases, embryonic tissue neoplasia, sarcoidosis, cavernous hemangioma [11,14,15,16,19,21,23,24, 28,29].

At the same time, we did not exclude the possibility of cardiac myxoma and malignancy of these cysts.

We immediately put forward the assumption that the patient has two DCs. This diagnosis was confirmed by the fact that, according to the literature, on the roentgenogram of the chest organs in the direct projection, DCs usually appear in the form of a semi-oval or, less often, a semi-round shadow of high

intensity with clear contours to the left and right of the midline. The rest of the shadow, as a rule, is not visualized because it merges with the mediastinal shadow. A similar X-ray picture in our patient was initially interpreted as an expansion of the heart in the cross section due to pancarditis and hydro pericardium (exudative pericarditis). However, MS CT data of the thoracic organs reliably confirmed the presence of probably two cysts of the mediastinum and/or pericardium (Figure 4), CT signs of which are described in detail in the literature [17,27].

Repeated echocardiography on 07/20/20 confirmed our assumptions, as two large volumetric formations surrounded by capsules and filled, probably with a gel-like mass, were also found in the projection of the pericardium. Visually, they were similar to cysts of the mediastinum or pericardium, which greatly compressed the heart, creating a risk of its tamponade (Figure 6).

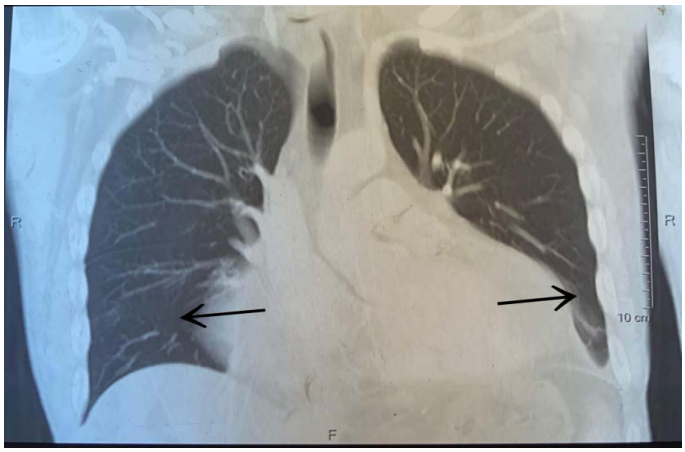

Figure 5. *An enlarged fragment of the MS CT film of the chest organs of patient P., 42 years old, dated 07/16/2020, which clearly shows how the identified cystic formations created moderate compression of the adjacent parts of both lungs (shown by arrows).*

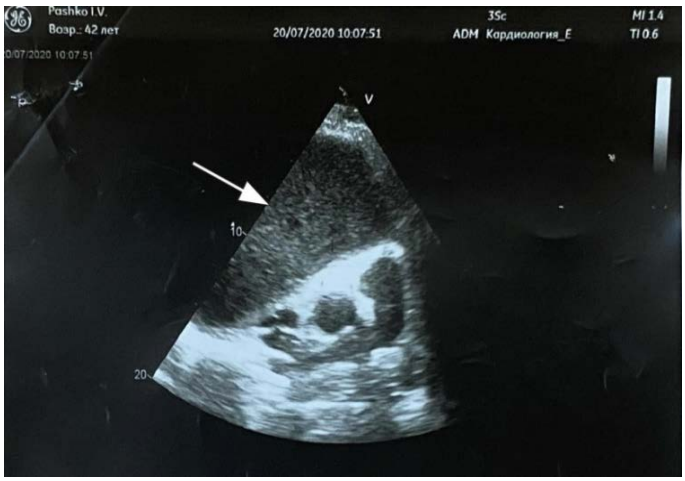

Figure 6. *ECHO-CS data of patient P., 42 years old, dated 07/20/20. The arrow indicates a volume formation with a clear contour, which is visualized along the front wall of the pericardial sac, measuring 7x14 cm (shown by arrow). The heart is reduced in size.*

In order to find out the probability of infection of the DC or suppuration of its contents, we conducted a repeated laboratory and instrumental examination, according to the results of which no clinical and laboratory signs of purulent-inflammatory processes were detected.

Taking into account the possible oncological cause of the rapid growth of DC, as a result of its malignancy against the background of lymphadenopathy, we referred the patient for consultation to an oncologist. With the established diagnosis: Neoplasm of the mediastinum, the patient was sent for consultation to the Institute of Oncology of the Academy of Medical Sciences of Ukraine, Kyiv. According to the provided medical documentation, on August 4, 2020, a multi-detector CT of the chest organs was performed with contrast enhancement (Tomohexol -350 100 ml) (Figure 7).

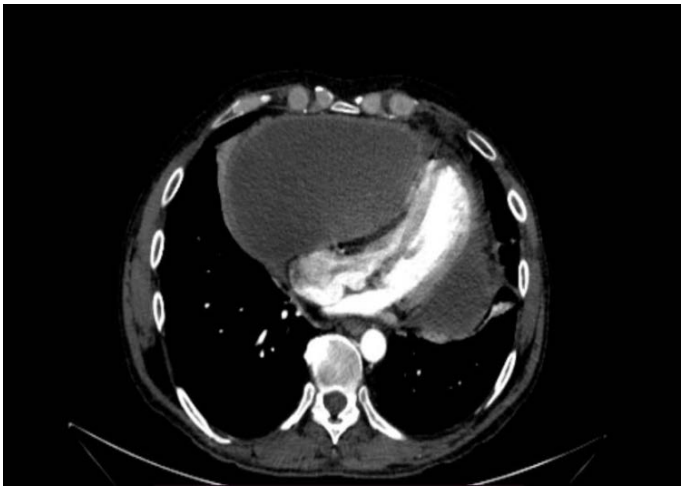

Figure 7. *Multidetector CT scan data of patient P., 42 years old, dated August 5th, 2020 (description in the text).*

According to the data: a large-sized cyst (152x84 mm, vertical size – 115 mm) is identified on the right paracardial, which has a homogeneous fluid content (+10 HU) and does not enhance with contrast. A wall of uniform thickness of 5–7 mm, with homogeneous contrast enhancement. The cyst fills almost the entire precardial space and compresses the right ventricle (RV) and atrium. Pericardial fat is preserved and can be traced throughout. The cysts are in contact with the diaphragm with a preserved fatty layer, without signs of invasion. A similar cystic formation with dimensions of 61x38 mm, vertical dimension – 83 mm is determined along the left contour of the heart. The wall is up to 5 mm thick. The cyst compresses the LV. These data not only confirmed the diagnosis we established, but also coincided with the descriptions of CT signs of DC known in the literature [2,11,16,19,20,24,27-29]. By the intensity of the signal, it was possible to determine the presence and nature of the liquid – its intensity indicated the thick, viscous nature of the cyst's contents.

On August 5th, 2020, a puncture biopsy of a cystic formation of the pericardium was performed. According to the results

of cytological examination No. 5060/20, a pericardial cyst was verified. On August 6, 2020, he was hospitalized at the National Cancer Institute. The patient's hemodynamics were stabilized, and a preoperative examination was performed. In the hemogram – anemia of moderate severity, leukocytosis ($9.6x10^9$/l); on the ECG: changes in the area of the LV and the side wall (of a metabolic nature); the spirogram indicated the development of respiratory insufficiency (VLC – 2.1 ml, FEV 1 – 1.8). The study of other parameters of laboratory indicators was within the reference values.

On August 10, 2020, median sternotomy and pericardiotomy were performed under general anesthesia to drain fluid. During the surgical intervention, two PDCs with suppuration were found, which was evidenced by the purulent content of these cysts. Although, according to the literature, complete surgical excision of these cysts is recommended, in this case, due to the difficulty of removing these formations, adhesion to the lung tissue and vascular complex, a partial resection of the tumor was performed. Unfortunately, we do not have detailed data on the course of the operation, but we do have the conclusion of the pathohistological examination No. 46723-31/2020 dated 18.08.2020, which confirmed the presence of large cystic formations with pronounced inflammation, xanthomatosis, covered mainly with granulation, partly with loose connective tissue, adipose tissue, and mesothelium. Their contents were structureless detritus.

After surgical treatment and symptomatic therapy, the patient's condition improved significantly, the severity of shortness of breath decreased, and what seemed incredible – skin rashes disappeared without specific treatment (Figure 8).

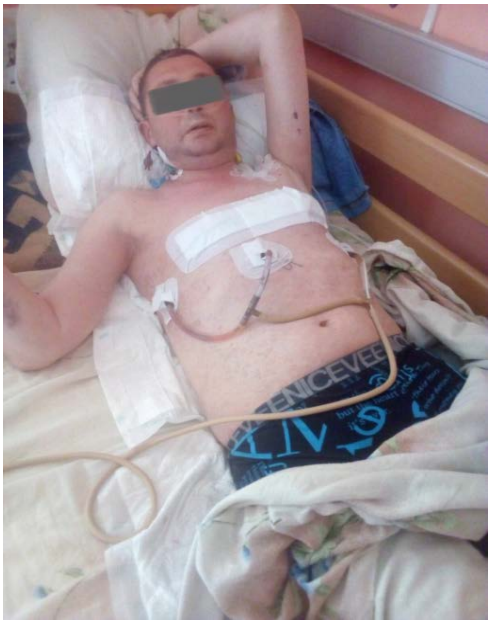

Figure 8. *Photo of patient P., 42 years old, on the 4th day after surgical treatment.*

On August 27, 2020, he was discharged for follow-up by an oncologist, a family doctor at his place of residence with a recommendation for re-examination after 6 months (CT of the chest, abdominal organs, with intravenous contrast).

For now, the patient's condition is satisfactory, shortness of breath does not bother him, the skin is clean.

In our opinion, this clinical case is of great interest to family doctors, cardiologists, nephrologists, gastroenterologists, oncologists, surgeons, dermatologists, and doctors of other specialties, as it is associated with difficulties in diagnosis, due to a long asymptomatic course of progressive growth of dermoid cysts, as well as the possibility of treatment provided timely and correct diagnosis. The diagnosis of PDC should already be assumed when the patient has progressive shortness of breath, tachycardia, acrocyanosis, pericardial effusion, cardiomegaly, or expansion of the cardiac shadow on the Ro-gram of the chest organs. Further examination will help verify the diagnosis and save patients' lives.

Conclusion.

1. Dermoid cysts of the pericardium made their debut with the development of progressive shortness of breath, which arose against the background of the appearance of symptoms of toxic myocardiopathy, pleural and pericardial effusion already 1 month after the appearance of the first symptoms of lithium intoxication.
2. A complex of symptoms that developed in a 42-year-old patient with chronic psoriatic disease after transdermal lithium poisoning indicated a multiorgan pathology, which was manifested by alternating symptoms of acute kidney damage, generalization of psoriatic rashes, acute pancreatitis, toxic-allergic vasculitis with myofascial syndrome and secondary polyneuroradiculopathy and tetraparesis, toxic myocardiopathy with an episode of paroxysmal atrial flutter, the appearance of pleural and, as it was believed, pericardial effusion.
3. This complex of symptoms at the beginning of the disease was considered as a consequence of the toxic effect of lithium (Litol 24), which may have been the cause of the development of multiorgan pathology and a predictor of the manifestation of the growth of the existing dermoid cysts of the pericardium.
4. Although the doctors managed to protect the patient from the development of life-threatening emergency conditions during the 6 months of the disease, conservative treatment proved to be ineffective. No one even guessed about the presence of dermoid cysts of the pericardium, especially about the possibility of their progressive growth up to the appearance of symptoms of the threat of cardiac tamponade.
5. Only surgical treatment helped the patient not only to avoid a life-threatening pathological condition due to compression syndrome, but also to get rid of skin rashes that had been bothering him for 22 years.
6. The question of whether the patient had psoriatic disease or it was a skin manifestation of the existing dermoid cysts remained unresolved, since after surgical treatment the skin rash disappeared without specific treatment.
7. This clinical case can supplement the worldwide statistical indicators of detected pericardial dermoid cysts, of which, according to the available literature, there were only 41 cases until now.

Conflict of interest statement.

The author declares no conflict of interest.

The work is a fragment of the research work "Clinical evaluation of the combined effect of cardiovascular risk factors on the comorbid course of arterial hypertension, coronary heart disease and chronic kidney disease, features of prevention and rehabilitation." State registration number: ДР 0118u004456

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