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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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FREQUENCY OF COMPLICATIONS IN PATIENTS WITH ADENTIA (BASED ON ARCHIVAL DATA)

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Abstract.

The aim is to evaluate the frequency and nature of complications after orthopedic treatment of partial and complete adentia (according to archival data). A retrospective analysis of the case histories of 310 patients with secondary adentia and complications after orthopedic treatment was performed. The mean age of the patients was 65.1±2.16 years, men accounted for 53.9%, women - 46.1%1. 43.2% of patients had complete secondary adentia and 56.8% of patients had partial secondary adentia. Complications were registered in 36.1% of patients. Mechanical complications occurred in 6.8% of patients with partial adentia and 14.2% of patients with complete adentia (p=0.033). Functional complications in general showed significant differences between groups (2.8% for partial adentia and 8.2% for complete adentia; p=0.035). Biologic complications occurred in 32.8% of patients with complete adentia and in11.9% of patients with partial adentia (p< 0.001). The most frequent complication in both groups was denture bed stomatitis (6.8% in partial and 21.6% in complete adentia, p< 0.001). The highest rate of complications was registered with plate full dentures (39.7%), while the rate of complications in patients with bracket prostheses was 13.0%). The conducted analysis of the archival material for the 10-year period showed that removable dental prostheses remain an actual and demanded method of secondary adentia treatment. However, the frequency of complications, especially in case of complete prosthetics, remains high, which requires: more thorough preparation of supporting tissues; individual selection of the design; regular control and correction of prostheses; teaching patients the rules of hygienic care.

Key words. Adentia, removable prosthesis, complications, plastic, bracket prostheses, retrospective analysis.

Introduction.

The problem of secondary adentia continues to be one of the leading problems in orthopedic dentistry. Despite the achievements in the field of implantology and fixed prosthetics, removable dentures are still widely used in clinical practice, especially in elderly patients and in cases of complete loss of teeth [1]. The analysis of complications arising after prosthetics is of considerable interest from the point of view of optimizing prosthetic care, improving the quality of life of patients and preventing possible negative consequences.

Adentia is a global phenomenon and is predicted to occur in large numbers in many countries. Complete removable dentures are widely used for patients with complete adentia, and proper care, timely counseling, and patient information are essential for their success. Fabrication methods for standard complete dentures have remained unchanged over the past 70 years since the introduction of polymethyl methacrylate in 1936 [2]. In the intervening decades, acrylic resin has shown improvements in its physical properties and polymerization processes with the introduction of autopolymerisation, compression molding, microwave processing, and injection molding techniques [2]. The standard protocol for fabrication of complete dentures involves a complex sequence. Partial tooth loss is a pathologic condition resulting from diseases such as periodontitis and dental caries [3,4]. Partial secondary adentia is not a disease in itself, but a form of damage to the dentoalveolar system.

The aim of the study was to evaluate the frequency and nature of complications after orthopedic treatment of partial and complete adentia (according to archival data).

Materials and Methods.

Within the framework of this study, a retrospective analysis of case histories of patients with partial and complete secondary adentia who received orthopedic treatment with removable dental prostheses in 5 dental clinics of Baku within 10 years (2013-2022) was conducted. When working with the archival material and selecting patients, we adhered to the following criteria: the presence of a completed course of prosthetic treatment with removable dentures; the presence of complete medical documentation; follow-up for at least 6 months after prosthetics. From the complete 10-year archive, 310 patients who met the selection criteria (removable dentures, follow-up period of 6 months or more, etc.) were randomly selected and their medical records were analyzed, which revealed complications in 112 cases. The following aspects were studied: type and volume of dental defect; type of orthopedic structure (partial/ complete removable denture); concomitant general somatic and dental diseases; presence and nature of complications.

In this study, “complaints” were considered as subjective sensations of patients that arose during the process of adaptation to removable dentures. These included such symptoms as a foreign body sensation, speech impairment, excessive salivation, and pain in the area of the prosthetic bed. These manifestations were usually temporary in nature and were recorded at the stage of getting used to the design. By “complications” we mean clinically verifiable pathological conditions that arise during the use of prostheses. They were divided into biological (for example, denture stomatitis, alveolar ridge atrophy), mechanical (base breakage, loosening of clasps) and functional (persistent speech impairment, gag reflex). Unlike complaints, complications required intervention from a doctor and often correction or replacement of the prosthesis.

Descriptive statistics were performed and the incidence of complications was estimated. The indicators between the groups were compared using the chi-square criterion. Statistical

analysis was performed using the SPSS program (version 22.0; IBM, New York, NY, USA). The level of significance was set at $p<0.5$.

Results and Discussion.

Patients ranged in age from 42 to 78 years, with a mean age of 65.1±2.16 years. The sample consisted of 167 (53.9%) males, and 143 (46.1%) females. The distribution of patients by age groups was as follows: 42-50 years, 19 (6.1%) patients; 51-60 years, 56 (18.1%) patients; 61-70 years, 110 (35.5%) patients and in the age group 71-76 years, 125 (40.3%) patients. Of 310 patients, 134 (43.2%) patients had complete secondary adentia and 176 (56.8%) patients had partial secondary adentia.

Analysis of the distribution of adentia types by age groups showed that partial adentia prevailed at the age of 61-70 years (36.4%) and 71-76 years (34.1%), while complete adentia was more common in the group of older patients - at the age of 71-76 years (48.5%). In the age group of 42-50 years, complete adentia was registered very rarely - only in 0.75% of patients, while partial adentia was noted in 10.2% of the examined patients, which indicates an earlier onset of loss of individual teeth.

When comparing the proportions of complete and partial adentia between age groups, statistically significant differences were found: the greatest differences were found in the groups of 42-50 years ($\chi^2 = 11.886$; $p < 0.001$) and 71-76 years ($\chi^2 = 6.571$; $p = 0.011$), indicating a reliable age dependence of the prevalence of various forms of adentia. In the age groups 51-60 and 61-70 years, the differences between the forms of adentia were statistically insignificant ($p > 0.05$).

Analysis of the archival material showed that a number of patients complained of foreign body sensation, diction disorders, excessive salivation and soreness in the area of the denture bed during the first days (Table 1).

From the complaints presented in Table 1, it is evident that of the 310 patients with adentia included in the study, 204 (65.8%) patients reported complaints. The most common complaint was soreness in the area of the denture bed, which was noted by 73 patients (23.5%), including 29 (16.5%) with partial adentia and 44 (32.8%) with complete adentia. This complaint showed a statistically significant difference between the groups ($\chi^2=11.308$, $p< 0.001$), which may indicate a high load and insufficient adaptation of the mucosa to the denture base. Patients with complete adentia often complained of foreign body sensation - 26.9% versus 12.5% in the group with partial adentia. This difference was statistically significant ($\chi^2=10.323$; $p=0.002$). Diction disorder was also more common in patients with complete adentia (17.9%), while in the group with partial tooth loss this symptom was noted in only 4.5% of patients. The difference between the groups was highly significant ($\chi^2=14.680$; $p< 0.001$), which is probably due to the larger area covered by the denture and the loss of lingual and lip resistance in the case of complete adentia. Excessive salivation was observed in 13.2% of patients overall, with almost twice as much in patients with complete adentia (19.4%) compared to partial adentia (8.5%), which was also statistically significant ($\chi^2=7.847$; $p=0.006$). This symptom may be due to adaptation to the prosthesis and its physical irritating effect.

A total of 204 patients (65.8%) presented complaints, with almost all patients with complete adentia (97.0%) reporting at least one complaint, compared to 42.0% among patients with partial adentia. The difference between the groups was highly significant ($\chi^2=102.161$; $p< 0.001$).

Thus, patients with complete adentia have significantly more frequent complaints, especially about foreign body sensations, diction disorders, excessive salivation and soreness in the area of the denture bed. This emphasizes the necessity of a more careful individual approach to prosthetics in this category of patients, taking into account the peculiarities of adaptation and increased requirements to the functionality of prostheses.

Complications were registered in 112 (36.1%) patients out of 310 patients. According to the analysis data, the most frequent complications in patients with adentia when using removable prostheses were: prosthetic stomatitis, prosthesis fixation disorders, mucosa and alveolar ridge atrophy, soreness of supporting teeth, and allergic reactions to acrylate (Figure 1).

The most frequently reported complication was denture stomatitis, which occurred in 41 patients, representing 13.2% of the total number of patients (n=310). This complication is usually associated with poor oral hygiene, prolonged wearing of the denture without removal, and possible microbial contamination of the denture surface.

Denture retention failure was the second most frequent complication, occurring in 20 patients (6.5%). This complication is especially characteristic of patients with complete adentia, where there are no natural support elements, as well as with pronounced atrophy of the alveolar processes.

Table 1. *Frequency of complaints of patients with partial (plate partial dentures) and complete adentia (plate complete dentures) according to the archival material.*

Complaints	**Total (n=310)**	**Patients with partial adentia (plate partial dentures) (n=176)**	**Patients with complete adentia (plate complete dentures) (n=134)**	**χ^2**	**p**
Foreign body sensation, n (%)	58 (18,7)	22 (12,5)	36 (26,9)	10,323	0,002
Diction disorder, n (%)	32 (10,3)	8 (4,5)	24 (17,9)	14,680	<0,001
Excessive salivation, n (%)	41 (13,2)	15 (8,5)	26 (19,4)	7,847	0,006
Denture bed soreness, n (%)	73 (23,5)	29 (16,5)	44 (32,8)	11,308	<0,001
Total, n (%)	204 (65,8)	74 (42,0)	130 (97,0)	102,161	<0,001

Note: *Statistical indicators express the difference between the groups with partial and complete adentia.*

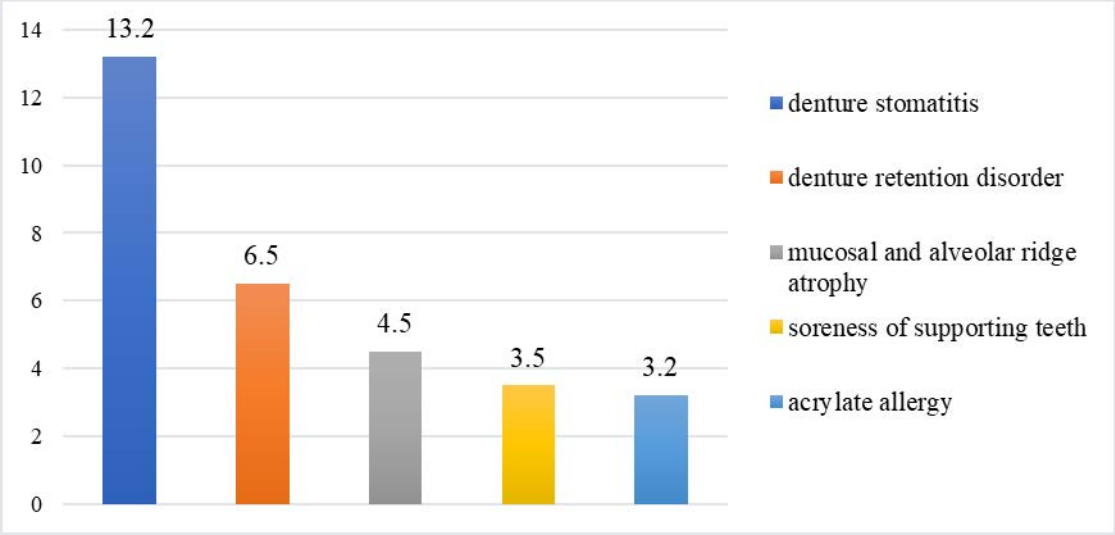

Figure 1. *Frequency of complications in patients with adentia after fitting removable prostheses (%).*

Table 2. *Distribution of complications by nature.*

Type of complication	**Number of cases (n=112)**	
	n	**%**
Mechanical complications	31	27,7
Including:		
breakage of the denture base	3	2,7
wear or deviation of artificial teeth	8	7,1
Retention failure (loosening of clasps, loss of stabilization)	20	17,9
Functional complications	16	14,3
Including		
decreased chewing efficiency	4	3,6
diction disorder	9	8,0
gag reflex when wearing a prosthesis	3	2,7
Biological complications	65	58,0
Including		
denture bed stomatitis	41	36,6
alveolar ridge atrophy	14	12,5
Allergic reactions to denture material	10	8,9

The third most frequent complication was marked thinning and atrophy of the mucosa and alveolar ridge, registered in 14 patients (4.5%). This process may be a consequence of prolonged prosthesis pressure, disturbed biomechanics under masticatory load, and age-related tissue changes.

Soreness of the supporting teeth, observed in 11 patients (3.5%), mostly with partial adentia, may indicate overloading of the supporting elements, improper distribution of masticatory pressure or periodontal inflammation in the support area.

Allergic reactions to acrylate denture materials had the lowest frequency with 10 cases (3.2%). Despite the relatively low percentage, this type of complication requires special attention, as it may require complete replacement of the prosthesis with a hypoallergenic material.

Thus, the presented data emphasize that removable prosthetics, despite its prevalence and availability, is associated with a certain risk of complications that require prevention, monitoring and timely correction of prosthetic treatment.

The complication rate in patients with complete adentia was 74 (42,0%), in patients with partial adentia 38 (28,4%), which was higher by 40,0% ($p<0,05$). This difference can be explained both by the age of the patients (complete adentia is more common in older age groups) and by the technical complexity of fixation of complete removable structures.

The obtained data of the analysis allowed us to classify complications into three main groups: mechanical, functional, and biological complications. Mechanical complications included breakage of the denture base, wear or deviation of the artificial teeth and retention disorders (weakening of the clasps, loss of stabilization); functional complications - reduction of chewing efficiency, diction disorders and gag reflex while wearing the denture; biological complications included stomatitis of the denture bed, atrophy of the alveolar ridge, allergic reactions to the denture materials (Table 2).

Complications are distributed regardless of the type of prosthesis; classification is given by clinical nature (biological,

mechanical, functional). From the distribution of complications that occurred in patients after prosthetic treatment with removable dental prostheses according to their nature presented in Table 2, the largest share was made up of biological complications - 65 cases (58.0%). Among them stomatitis of the denture bed (including candidal stomatitis) dominated, which was observed in 41 patients (36.6%). This indicates a high sensitivity of oral tissues to constant contact with the denture, especially in case of poor hygiene or microtraumas. Atrophic changes of the alveolar ridge were also registered quite often (12.5%), which is probably related to the long service life of prostheses and the lack of adequate load on the bone tissue. Allergic reactions to prosthetic materials amounted to 8.9%, which emphasizes the need for individual selection of materials taking into account the patient's history and possible hypersensitivity.

Mechanical complications ranked second in terms of frequency - 31 cases (27.7%). The leading problem in this category was denture retention, including clamp loosening and loss of stabilization, which occurred in 20 patients (17.9%). These data indicate the need for regular monitoring of the retainers and timely maintenance of the prosthesis. Less frequent were wear or misalignment of the artificial teeth (7.1%) and breakage of the denture base (2.7%).

Functional complications were detected in 16 patients (14.3%). Diction disorders were most frequently observed (8.0%), which may be related to the maladapted shape of the prosthesis, especially in the palate area. Some patients had a decrease in chewing efficiency (3.6%) and a gag reflex while wearing the prosthesis (2.7%), which requires an individual approach to prosthetic planning and adaptation period.

Thus, the most common complications are biological, which emphasizes the importance of both quality fabrication and fitting of the prosthesis and compliance with the rules of oral care. The data obtained indicate the need for a comprehensive approach in planning, fabrication and subsequent monitoring of removable dentures.

The greatest number of complications was registered in the first 6-12 months of denture use. Mechanical defects occurred more often after 1.5-3 years, especially in the absence of correction and preventive examination.

The incidence and severity of complications were found to correlate with the following factors:

Age: complications occurred 1.5 times more frequently in patients over 65 years of age;

Comorbidities: the presence of type 2 diabetes and osteoporosis increased the risk of developing alveolar atrophy;

Quality of denture care: inflammatory complications were 25% more frequent in patients with low hygiene motivation;

Design features of prostheses: complete maxillary prostheses with a large base caused gag reflex more often than mandibular prostheses.

Complications in the group with partial and complete adentia were analyzed and compared (Table 3).

Table 3 shows the results of comparing the incidence of various complications in patients with partial (n=176) and complete (n=134) secondary adentia after prosthetic treatment with removable prostheses.

Mechanical complications were observed in 6.8% of patients with partial adentia and in 14.2% of patients with complete adentia; statistically significant differences were found in this parameter (χ^2=4.580; p=0.033). A detailed analysis of individual types of mechanical complications also revealed significant differences. Thus, wear or deviation of the artificial teeth was found only in the group with partial adentia (4.5%) and was completely absent in patients with complete adentia, which was statistically significant (χ^2=6.252; p=0.013). At the same time,

Table 3. *Comparative analysis of complications in patients with partial (plate partial dentures) and complete (plate complete dentures) adentia.*

Type of complication	**Patients with partial adentia (plate partial dentures) (n=176)**	**Patients with complete adentia (plate complete dentures) (n=134)**	**χ2**	**P**
Mechanical: n (%)	12 (6,8)	19 (14,2)	4,580	0,033
Denture base breakage	1 (0,5)	2 (1,5)	0,678	0,411
Wear or deviation of artificial teeth	8 (4,5)	-	6,252	0,013
Retention disorder (loosening of clasps, loss of stabilization)	3 (1,7)	17 (12,7)	15,203	<0,001
Functional: n (%)	5 (2,8)	11 (8,2)	4,479	0,035
decreased chewing efficiency	1 (0,6)	3 (2,2)	1,667	0,197
diction disorder	4 (2,3)	5 (3,7)	0,574	0,449
Gag reflex when wearing prosthesis	-	3 (2,2)	3,979	0,047
Biological: n (%)	21 (11,9)	44 (32,8)	20,061	<0,001
denture bed stomatitis	12 (6,8)	29 (21,6)	14,566	<0,001
Alveolar ridge atrophy	3 (1,7)	11 (8,2)	7,464	0,007
Allergic reactions to denture material	6 (3,4)	4 (3,0)	0,044	0,835

Table 4. *Comparative analysis of complications by types of prostheses.*

Type of prosthesis	**Total number of patients**	**Complications, %**	**Main types of complications**
Full plate	174	39,7	Mechanical, biological
Plastic partial	113	35,4	Biological, functional
Curved	23	13,0	Mechanical

disruption of prosthesis retention (loosening of clasps, loss of stabilization) was more frequent in complete adentia - 12.7% versus 1.7% in partial adentia (χ^2=15.203; p< 0.001).

Functional complications in general showed significant differences between the groups (2.8% for partial adentia and 8.2% for complete adentia; χ^2=4.479; p=0.035). However, two of the individual symptoms (decreased chewing efficiency and impaired diction) did not show statistical significance. It should be noted that the gag reflex was recorded only in the group with complete adentia and which approached the border of statistical significance (2.2%, χ^2=3.979; p=0.047).

Biologic complications were significantly more frequent in patients with complete adentia (32.8%) compared to the group with partial adentia (11.9%) (χ^2=20.061; p< 0.001). The most frequent complication in both groups was denture bed stomatitis (6.8% in partial and 21.6% in complete adentia), which was significantly higher (p< 0.001). Alveolar ridge atrophy was also significantly more common in patients with complete adentia (χ^2=7.764; p=0.007). However, allergic reactions to denture materials did not show significant differences (p=0.835).

Thus, patients with complete adentia are more likely to experience all types of complications, whereas in partial adentia individual mechanical defects are more pronounced. These data emphasize the need for individual selection of prosthesis design and monitoring of their condition depending on the degree of tooth loss.

According to observational data, the highest rate of complications was registered with full plate prostheses (39.7%), while in patients with bracket prostheses the complication rate was 13.0% (Table 4).

The highest percentage of complications was observed in patients with full plate prostheses - 39.7% of 174 patients examined. The main types of complications in this group were mechanical (retention disorders, wear of the structures) and biological (prosthetic stomatitis, atrophy of the mucous membrane and alveolar ridge), which reflects the higher load on the tissues of the prosthetic bed in complete adentia and more difficult adaptation to complete prosthetics. In patients with plate partial dentures, complications were observed in 35.4% of cases (out of 113 patients). In this group, biological complications (inflammatory reactions, allergies) and functional complications (decreased chewing efficiency) predominated, which may be due to the combination of supporting teeth and plastic elements, disturbing the balance between fixation and comfort. The lowest percentage of complications was observed in patients who used clasp prostheses - 13.0% of 23 cases. Mechanical complications predominated. The lower incidence of complications in this group can be explained by better fixation rates, even distribution of masticatory load and smaller mucosal overlap area, which contributes to better hygiene and reduced risk of inflammatory reactions.

Thus, the frequency and nature of complications depend significantly on the type of removable prosthesis used. Full plate prostheses were the most unfavorable in terms of the number of complications, while bracket prostheses showed the best clinical tolerance. These data emphasize the importance of individual design selection based on anatomical, functional and clinical factors.

The results of our retrospective analysis showed functional disorders in 14.3% of patients. Chewing and biting difficulties were experienced by 3.1% of patients. These difficulties were associated with impaired denture stability and reduced biting force. Diction was impaired in 8.0% of patients. In these cases, dentures may affect the clarity of speech, especially during the initial period of adaptation. Gag reflex was observed in 2.7% of patients.

Thus, functional complications in patients with partial or complete adentia can significantly affect their quality of life. These complications range from difficulty with chewing and speech, problems with denture stability and oral health.

Biological complications were the most commonly reported, occurring in 58.0% of patients. Biological complications were mucosal inflammation, hyperplasia, candidal stomatitis, and alveolar ridge atrophy.

Prosthetic stomatitis was the most frequent complication, mainly in full removable prosthetics. We believe that risk factors could be poor denture hygiene, prolonged wear without removal, and irregularities in the fabrication of the denture base.

It should be noted that denture stomatitis is a common inflammatory disease affecting the oral mucosa of denture wearers, especially those wearing full or partial dentures. This condition is characterized by redness, swelling, and sometimes pain or burning in the area of the mouth covered by the denture. The primary causative agent is often a fungal infection, most commonly caused by Candida albicans, in combination with local and systemic factors. Candida albicans is the most common fungus associated with stomatitis caused by denture wear. It is a commensal organism, meaning it is normally present in the oral cavity, but its overgrowth can lead to infection. Inadequate cleaning of dentures and the mouth promotes the accumulation of microbes, including fungi of the genus Candida, creating an environment for infection. Poorly fitting dentures can irritate the mucosa, making it more susceptible to infection and inflammation [6]. Systemic diseases such as diabetes, nutritional deficiencies, immunosuppression and taking certain medications may also contribute to denture stomatitis by weakening the body's defense against infection.

Comparison with literature data showed that a number of researchers have also reported a frequent prevalence of denture stomatitis in patients with removable dentures [6-9]. In a study by E. Bozdemir et al. [10] revealed a significant relationship between the use of dentures and lesions of the oral mucosa (P=0.001).

Conclusion.

Thus, the analysis of archival material for a 10-year period showed that removable dental prostheses remain an actual and popular method of secondary adentia treatment. However, the frequency of complications, especially with complete dentures, remains high, which requires: more careful preparation of supporting tissues; individual selection of the design; regular monitoring and correction of prostheses; training patients in the rules of hygienic care.

REFERENCES

1. Robakidze N.S, Zhidkikh E.D, Oromyan V.M. Orthopedic treatment with the use of modern technologies in the complete absence of teeth: a clinical case. St. Petersburg: University Dentistry and Maxillofacial Surgery. 2024;2:181-188.
2. Lee D.J, Saponaro P.C. Management of Edentulous Patients. Dental Clinics of North America. 2019;63:249-261.
3. Jalilova G.I, Panakhov N.A. Pathologic changes in the oral cavity as a result of secondary adentia. Medical News. 2020;5:72-74.
4. Shahmuradov R, Mammadova G. Types of secondary deformation arising against the background of periodontal diseases. Scientific heritage. 2022;90:46-48.
5. Perić M, Miličić B, Kuzmanović Pfićer J, et al. A Systematic Review of Denture Stomatitis: Predisposing Factors, Clinical Features, Etiology, and Global Candida spp. Distribution. J Fungi (Basel). 2024;10:328.
6. Özkan G, Yasin Y.K, Okyay P. The relationship of oral mucosal lesions and removable prostheses: quantitative and qualitative study. Balk J Dent Med. 2020;24:35-43.
7. Adam R.Z, Kimmie-Dhansay F. Prevalence of Denture-Related Stomatitis in Edentulous Patients at a Tertiary Dental Teaching Hospital. Front Oral Health. 2021;2:772679.
8. GhiŢĂ R.E, Scrieciu M, MercuŢ V, et al. Oral Mucosa Changes Associated with Wearing Removable Acrylic Dentures. Curr Health Sci J. 2020;46:344-351.
9. Wang L.L, Liu X.H, Yang L.M, et al. Clinical analysis of denture-related oral mucosal lesions in 185 patients with removable denture. Shanghai Kou Qiang Yi Xue. 2020;29:85-88.
10. Bozdemir E, Yilmaz H.H, Orhan H. Oral mucosal lesions and risk factors in elderly dental patients. J Dent Res Clin Dent Prospects. 2019;13:24-30.