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## SYSTEMATIZATION OF THE IATROGENIC PATHOLOGIES OF MAXILLARY SINUSES

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The study was aimed at systematize the modern stomatogenic iatrogeny based on the analysis of literature data and own observations. The meaning of the word iatrogeny includes all the cases of postoperative conditions, new diseases after treatment, complications of illnesses in case of unsuccessful treatment or diagnosis, negative consequences of medical activity, cases of the patient's recovery against medical intervention. Iatrogeny is a patient's condition in which the fact of the medical intervention influence on its development and formation, or its course, or its outcome (positive or negative) is established. Stomatogenic iatrogeny can manifest itself in the form of: iatrogenic recovery, iatrogenic complication of the underlying disease, iatrogenic harm caused to health, development of iatrogenic concomitant disease. Systematization of stomatological iatrogeny was established on examples of clinical cases.

**Key words:** iatrogeny, dentogenic iatrogeny, iatrogenic maxillary sinusitis, systematization of iatrogeny.

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Modern medicine is characterized by an increase of the pathologies that occur on the background of medical manipulation. Integration of the newest technologies, front-rank equipment, innovative materials and methodologies in stomatology changes usual clinical presentation of iatrogenic diseases which are manifested after the curatively-diagnostic manipulations. The new forms of diseases appear.

In modern scientific literature, a single, general or dominant, classification of the iatrogeny concepts and iatrogenic diseases is absent. Absence of the differentiated approach to the treatment of different diseases is the reason of treatment on general standards, which is ineffective. And the use of the wrong wording can lead to unreasonable accusations against the doctor about his guiltiness about of development pathological conditions

**The purpose** of the study was to systematize the variants of ending of stomatological treatment in a concept of iatrogeny based on the analysis of literature data and our own observations.

**Material and methods.** Analysis of literature and clinical cases of 167 patients with different forms of iatrogenic maxillary sinusitis was performed. Systematization of stomatological iatrogeny was established on examples of these cases.

**Results of the study and their discussion.** Stomatology is one of the most important fields of health protection in Ukraine [4]. High level of population attendance for dental care is another factor contributing to a large amount of different iatrogenic diseases.

Some pathologists associate the increase of number of complaints and so called "medical criminal cases" with frequent use of "iatrogeny" term. Avdeev A.I.(2009) cites data of Shnur A.(1992), who notes, that the increase of lawsuits is observed independently from our view on iatrogenia and is connected to demanding of patients and with propaganda of consumerism in mass-media [1]. We think that the spread of the "iatrogeny" term in practical medicine is one of the ways of objectification for specialists and patients, and prevention of speculations (in philosophical meaning of the word) with this term.

At first this term was introduced, as it is known, in 1925 by German psychiatrist Osvald Bumke in research article "A doctor as a reason for mental disorders" [9] for designation of diseases, caused by psychogenic influence of medical personnel on patients. Nowadays a tendency of expanded understanding of this term, and of adding to iatrogeny diseases, caused by medical factors of physical, chemical and mechanical nature [11]. Some forensic experts are sure, that exactly "medical error" term determines "iatrogeny" [2]. Others match iatrogeny with infliction of harm to the health of a man directly [6]. Some – with onset of an unsuccessful outcome and indirect consequence of doctor's actions [8]. Suchkov A.V. puts into the concept of medical (medical) error causing patient (patients) serious health damage or death through negligence [7].

"Medical error" according to the formulation of M.I. Galyukov. Are unfavorable changes in the patient's condition, caused by the unconscious actions of the doctor "[3]. However, "medical error" being always associated with an unfavorable outcome in medical practice, does not always harm the patient's health [5; 6]. In all of the examples, a demonstration of iatrogeny is seen as a negative result of medical intervention. We consider this point of view to be one-sided, like the opinion that iatrogeny is inevitably

harm to the patient, in the absence of harm the situation can be not considered iatrogenic, and note that it is necessary not to identify iatrogeny with a harm to the patient.

The concept of "medical error", reflecting only the situation of a negative outcome of treatment through the fault of the doctor [7] can't be a concept wider than iatrogeny, rather it is one of the forms of iatrogeny

Currently, according to ICD-10, iatrogeny is any undesirable or unfavorable consequence of preventive, diagnostic and therapeutic interventions or procedures that result in abnormal functioning of the body, restriction of habitual activity, disability or even death; complication of medical activities that have developed as a result of both erroneous and correct actions of the doctor [10]. In the interpretation of ICD-10, attention is drawn to the identification of "iatrogeny" in some cases with complications, as well as its representation only in a negative aspect.

In our opinion, the meaning of the word iatrogeny (translated from Greek *iatros* - 'doctor' and *genes* - 'generated') is enough to reveal the essence of the term: any state of the body that has developed on the background of medical treatment and diagnostic activities is iatrogenic. Literally, not only all cases of postoperative conditions, new diseases after treatment, complications of diseases with unsuccessful treatment or diagnosis, negative consequences of medical activity, but also cases of recovery of the patient on the background of medical intervention fall under the definition of iatrogeny.

Only diseases in the pathogenesis of which the elements of the influence of therapeutic and diagnostic measures and cases of self-healing of the disease or any solution without the participation of medical personnel can't be traced, don't fit the concept of iatrogeny (generated by a doctor). Complication of the disease is by definition pathological process etiologically or pathogenetically related to the underlying disease, less often with curative effects, and aggravating the course of the underlying disease [3].

Thus, the "complication" is one of the forms of manifestation of iatrogeny, which means the weighting of the course of the disease, the treatment of which was conducted. Therefore, it is necessary to speak of iatrogenic complications in those situations when after an ineffective medical intervention the deterioration of the course of the underlying disease is observed. In the research of clinical cases of maxillary sinusitis, we observed forms of diseases in the pathogenesis of which the fact of improperly performed dental treatment was traced, for example, excretion of the root sealant or ejection of a fragment of the root of the removed tooth into the lumen of the sinus (figure 1).

Pathological changes in the mucosa of the right maxillary sinus are determined on the background of excretion of the root sealant into the lumen of the sinus.

There have been cases of the development of sinusitis after dental treatment on the background of a new pathological condition, for example, oro-anthral communication (fistula): these circumstances can't be clearly considered a medical error or negative results of treatment. Firstly, because a violation of the integrity of the sinus bottom could be both an anatomical feature and a consequence of chronic inflammation of the periapical tissues of the causative tooth. The appearance of oro-anthral communication (fistula) under the given conditions is rather inevitability depending on the quality of the doctor's work, than the consequence, (figure 2).

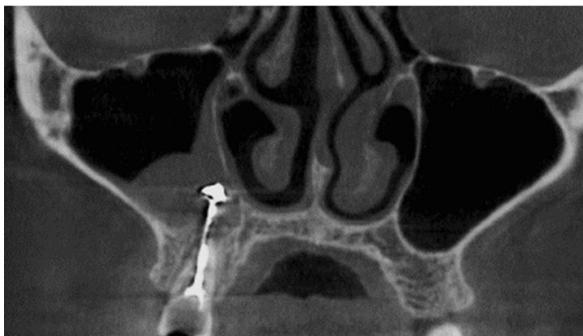


Fig. 1. Iatrogenic maxillary sinusitis of dental origin on the right (mixed form). Cone-ray computer tomography (frontal section).



Fig. 2. Iatrogenic maxillary sinusitis of dental origin on the right (infectious-allergic form). Cone-ray computer tomography (frontal section).

The violation of the integrity of the lower wall of the maxillary sinus is determined due to resorption of bone tissue between the sinus and the socket of the "causal" tooth - pathological perforation of the sinus bottom; the presence of a shadow of the root sealant in the projection of the root canals indicates a previously conducted endodontic treatment. Secondly, the removal of the tooth as a cause of inflammation in any case has a therapeutic value, and the oro-anthral message providing an outflow, facilitates the suffering of the patient (figure 3).

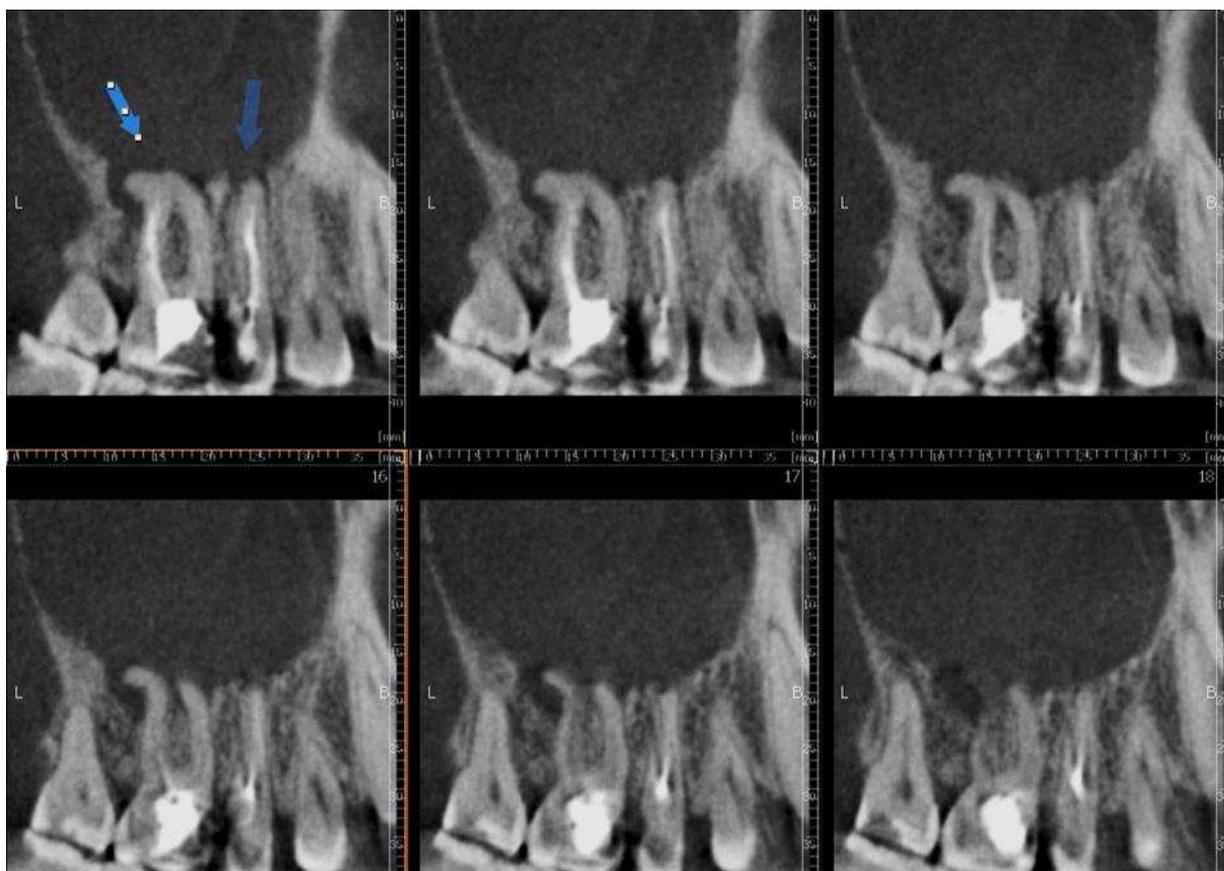


Fig. 3. Iatrogenic maxillary sinusitis of stomatogenic origin (infectious-allergic form). A series of images of cone-ray computed tomography (sagittal section).

Violation of the maxillary sinus lower wall integrity is determined as a result of bone resorption between the sinus and the sockets of the 6th and 5th teeth - the pathological perforation of the sinus bottom; the presence of a shadow of the root sealant in the projection of the root canals indicates a previously conducted endodontic treatment. The third group of iatrogenic diseases observed by us had no pathogenetic connection with the underlying disease and developed on the background of a successful resolution of the underlying disease.

In the modern literature, we didn't find definitions and terms that reflect the cases of iatrogenia that occurred at different times after a positive outcome of treatment, and do not share pathogenesis with the underlying disease.

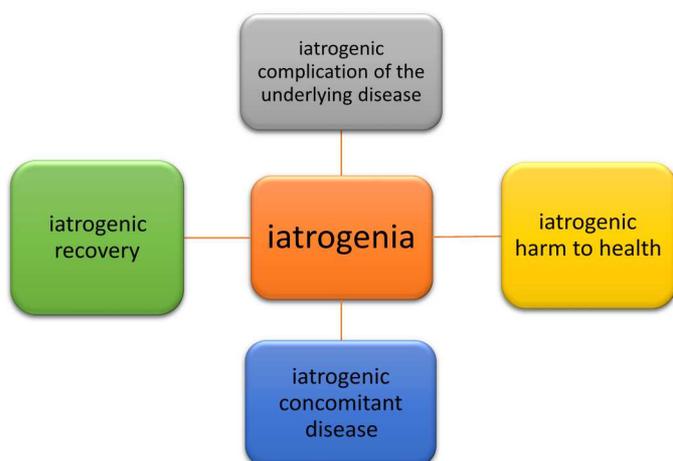


Fig. 4. Forms of the iatrogeny outcome as a medical intervention.

Violation of the maxillary sinus lower wall integrity is determined due to the structural features - the anatomical perforation of the sinus bottom. The presence of a shadow of the root sealant in the projection of the root canals indicates a previously conducted endodontic treatment; the safety of the width of the periodontal cleft in the apex of the "causal" tooth indicates the absence of a clinically pronounced periapical focus of inflammation. Most likely, such a condition can be represented as "iatrogenic concomitant disease", since it is the "concomitant disease" -

the nosological form (unit), etiologically and pathogenetically not associated with the underlying disease and its complications, which has not adversely affected their course and development and did not contribute to the onset of death [10]. Thus, we offer the notion of "eligible actions of a doctor", "ineligible actions of a doctor", "medical errors" not to be matched with the concept of "iatrogeny," but to treat them as its forms

that characterize the qualitative aspect of medical activity. All possible consequences of dental iatrogeny - as a phenomenon of medical intervention, presented in the form of a scheme (figure 4).

The so-called post implant maxillary syndrome can serve as a measure of iatrogenic concomitant disease in dentistry.

The syndrome, in the opinion of the authors, arises to all patients after prosthesis of the upper jaw on implants in conditions of favorable treatment outcome and absence of local symptoms [10]. This group can also include maxillary sinusitis after successful sinus lifting, sinusitis after qualitative endodontic treatment of upper molars in the absence of symptoms of active periapical inflammation.

### Conclusions

1. The concepts of "medical error", "eligible and ineligible actions of a doctor" characterize the qualitative side of iatrogeny.

2. Any state of the patient in the development, formation of the flow or outcome (positive or negative) of which, the fact of the influence of medical intervention is established, can be considered iatrogenic.

3. The result of medical intervention (iatrogeny) can be: iatrogenic recovery, iatrogenic complication of the underlying disease, iatrogenic harm to health, development of iatrogenic concomitant disease.

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### Реферати

#### СИСТЕМАТИЗАЦІЯ ЯТРОГЕННИХ ПАТОЛОГІЙ ВЕРХНЬОЩЕЛЮПНИХ СИНУСІВ

Гулюк А.Г., Варжапетян С.Д., Баранник Н.Г.

Дослідження було спрямоване на систематизацію сучасних стоматогенних ятрогеній на підставі аналізу літературних даних і власних спостережень. Значення слова ятрогенія включає в себе всі випадки післяопераційних станів, нові захворювання після лікування, ускладнення захворювань в разі невдалого лікування або діагностики, негативні наслідки медичної діяльності, випадки одужання пацієнта всупереч медичного втручання. Ятрогенія - це стан пацієнта, при якому встановлено факт впливу лікарського втручання на її розвиток і формування, або її перебіг, або її результат (позитивний або негативний). Результат стоматогенної ятрогенії може проявлятися у вигляді: ятрогенного одужання, ятрогенного ускладнення основної хвороби, ятрогенного шкоди здоров'ю, розвитку ятрогенного супутнього захворювання. На прикладах клінічних випадків була встановлена систематизація стоматологічної ятрогенії.

**Ключові слова:** ятрогенія, стоматогенна ятрогенія, ятрогенний верхньощелепний синусит, систематизація ятрогеній.

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Гулюк А.Г., Варжапетян С.Д., Баранник Н.Г.

Исследование было направлено на систематизацию современных стоматогенных ятрогений на основании анализа литературных данных и собственных наблюдений. Значение слова ятрогенія включает в себя все случаи послеоперационных состояний, новые заболевания после лечения, осложнения заболеваний в случае неудачного лечения или диагностики, негативные последствия медицинской деятельности, случаи выздоровления пациента вопреки медицинскому вмешательству. Ятрогенія - это состояние пациента, при котором установлен факт влияния врачебного вмешательства на ее развитие и формирование, или ее течение, или ее исход (положительный или отрицательный). Исход стоматогенной ятрогенії может проявляться в виде: ятрогенного выздоровления, ятрогенного осложнения основной болезни, ятрогенного вреда здоровью, развития ятрогенного сопутствующего заболевания. На примерах клинических случаев была установлена систематизация стоматологической ятрогенії.

**Ключевые слова:** ятрогенія, стоматогенная ятрогенія, ятрогенный верхнечелюстной синусит, систематизация ятрогеній.

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