

PURULENT-INFLAMMATORY DISEASES OF THE MAXILLOFACIAL REGION AND OPTIMAL METHODS OF THEIR TREATMENT

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ANNOTATION

Incidence of acute purulent-inflammatory diseases of the maxillofacial region, including phlegmon, is growing steadily. In recent years, the number of patients with a severe course of this pathology, accompanied by the development of complications, long-term disability, and sometimes leading to Disability and mortality All this demonstrates the important social importance of an integrated approach to treating acute maxillofacial phlegmons and preventing postoperative complications. This article provides an analysis of data from scientific literature and clinical observations on the pathophysiological features of the course of purulent-inflammatory diseases of the maxillofacial region, modern methods of diagnosis and integrated treatment.

Key words: maxillofacial region, odontogenic phlegmons, obligate and facultative anaerobes, fluktoorization, necrosis, epithelialization

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ГНОЙНО-ВОСПАЛИТЕЛЬНЫЕ ЗАБОЛЕВАНИЯ ЧЕЛЮСТНО-ЛИЦЕВОЙ ОБЛАСТИ И ОПТИМАЛЬНЫЕ МЕТОДЫ ИХ ЛЕЧЕНИЯ

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АННОТАЦИЯ

Частота острых гнойно-воспалительных заболеваний челюстно-лицевой области, в том числе флегмон, неуклонно растет. В последние годы заметно увеличилось число больных тяжелым течением данной патологии, сопровождающимся развитием осложнений, долговременной утратой трудоспособности, а иногда приводящим к инвалидности и смерти. Все это свидетельствует о важной социальной значимости комплексного подхода к лечению острых флегмон челюстно-лицевой области и профилактике послеоперационных осложнений. В этой статье приведено анализ данных научной литературы и клинических наблюдений, посвящённых патофизиологическим особенностям течения гнойно-воспалительных заболеваний челюстно-лицевой области, современным методам диагностики и комплексного лечения.

Ключевые слова: челюстно-лицевая область, одонтогенные флегмоны, облигатные и факультативные анаэробы, флюктуоризация, некролиз, эпителизация

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Purulent-inflammatory processes associated with one odontogenic inflammatory diseases are an important medical and social problem in the practice of a dentist and maxillofacial surgeon, due to the extremely high incidence, which ranges from 60-67% [3-5]. It has been noted that in the structure of acute purulent-inflammatory diseases of the maxillofacial region, acute inflammatory diseases account for up to 70% with a tendency to increase [1-5].

A special place in the course of acute odontogenic inflammatory diseases is occupied by the pain component, which largely determines the clinical course of the disease, the general condition of the patient, his emotional background and recovery. In this regard, the study of the nature of pain, intensity, provoking factors will allow us to assess the nature of the course of AOIA, which in the future will allow for the optimal selection of pain therapy in patients with HL of the maxillary fossa.

THE PURPOSE OF THE STUDY to compare the course of various clinical forms of acute odontogenic diseases with the determination of the age categories of patients, as well as to develop and

implement optimal methods for their treatment.

MATERIALS AND METHODS

Clinical studies were conducted on the basis of the Department of Maxillofacial Surgery of the Bukhara Regional Multidisciplinary Medical Center. The observations were based on a clinical and laboratory study of 150 patients with purulent-inflammatory diseases of the maxillofacial region (abscesses and phlegmons), including 88 (58.7%) men and 62 (41.3%) women, aged 18 to 80 years (Table 1.).

As can be seen from Table. 1, purulent-inflammatory diseases of the maxillofacial region were more common in persons aged 18 to 44 years (65% of patients). 85% of those hospitalized were admitted for emergency reasons. All cases of abscesses and phlegmons were of odontogenic origin. The most common reason for the development of odontogenic inflammation was the presence of a focus of infection in the area of the tops of the roots of the third molar - 77 patients (51.3%), less often - the first 20 (13.3%) and second 15 (10%) molar, premolars - 25 (16.7%) and anterior teeth - 13 (8.7%).

Table 1

Distribution of patients by sex and age

Age, years	Men		Women		Total	
	abs	%	abs	%	abs	%
18-44	57	65.7	40	65	97	65
45-59	18	20	15	24	33	21.7
60-75	13	14.3	7	12	20	13.3
Total	88	100	62	100	150	100

An analysis of the terms of hospitalization in the department (Table 2) found that most of the patients were admitted to the clinic on the

5-7th day from the onset of the disease, which indicates that the course of the inflammatory process is active.

Table 2

Terms of hospitalization of patients with odontogenic abscesses and phlegmons since the onset of the disease

Terms of hospitalization	3-5 days	5th-7th day	7-10th day	more than 10 days
Number of patients	20 (13.3%)	62 (41.3%)	48 (32.1%)	20 (13.3%)

As a result of the study of the localization of the purulent-inflammatory process, it was determined that in most patients the purulent focus occupied one anatomical space (45%) - more often the pathological process occurred in the submandibular region. In 35% of cases,

two anatomical spaces were affected (the submandibular and submental regions were more often affected), and in 20% of patients, purulent inflammation affected three or more anatomical spaces (Table 3).

Table 3
Distribution of patients according to the localization of the purulent process at the time of hospitalization of the patient

Purulent-inflammatory diseases maxillofacial area form	Number of patients	%
Abscesses and phlegmons of the same anatomical space	67	45
Abscesses and phlegmons of two anatomical spaces	53	35
Abscesses and phlegmons of three or more anatomical spaces	30	20
Total	150	100

Upon admission to the department, patients mainly complained of pain at the site of the lesion, radiating to the adjacent areas, swelling, general weakness, malaise, fever, loss of appetite and other complaints characteristic of the lesion of a particular anatomical space of the maxillofacial areas.

Depending on the affected anatomical space, other symptoms were also noted: functional disorders - restriction of mouth opening - trismus of varying degrees, pain when swallowing, speech disorders (with damage to the parotid-masticatory, pterygo-maxillary regions).

Laboratory indicators clearly reflected leukocytosis (indicators ranged from $11.7 \cdot 10^9 / l$ to $25.1 \cdot 10^9 / l$) due to an increase in the number of neutrophilic granulocytes. The prevalence of the process was reflected in the value of the leukocyte index: in 137 (91.3%) it exceeded normal values, fluctuations from 1.1 to 2.0 were noted in 32 (53.3%), above 2.0 - in 58 (38.3%) %).

In 12 (8.3%) patients, this indicator corresponded to the norm. An increased level of ESR up to 20 mm/h was also noted. A general urinalysis did not determine any disorders of the kidneys and the state of decompensation - the indicators were within normal values according to age.

X-ray examination (dental x-ray) showed the presence of bone tissue destruction in the area of the causative tooth.

Based on the complex of examinations upon admission of patients to the department, it was determined that the patients were conditionally homogeneous groups for further research and their clinical and laboratory parameters corresponded to the moderate severity of the inflammatory process.

Based on the objectives of the study, 150 patients with purulent-inflammatory diseases of the maxillofacial region, depending on the type of local therapy, were divided into 3 groups by random sampling (Table 4):

Table 4
Distribution of patients by study groups depending on the local treatment complex used

Localization of purulent-inflammatory disease of the maxillofacial area	Groups		
	1	2	3
	TT + LPHDT	TT + Oflo-melide	TT + Oflo-melidee + LPHDT
One anatomical space (n= 67)	17	25	25
Two anatomical spaces (n= 52)	20	15	17
Three or more anatomical spaces (n=31)	13	10	8
Total	50	50	50

The 1-st group consisted of 50 patients in whom local treatment after opening a purulent focus, evacuating exudate and installing drains was limited to regular washing with antiseptic solutions - furacillin in a ratio of 1:5000 and 5% chlorophyllipt solution during daily dressings, and also underwent laser photodynamic therapy (LPHDT).

The 2-nd group consisted of 50 people who were included in the composition of the local treatment complex after the traditional treatment of the wound dressings with ointment "Oflo-melide";

The 3-rd group consisted of 50 patients who, after washing the purulent wound with antiseptic solutions (traditional therapy) during daily dressings, included an ointment on a water-soluble polyethylene glycol (PEG) base "Oflo-melide" in the form of a bandage in the form of a bandage using local laser photodynamic therapy (LPHDT).

Patients of all study groups underwent primarily surgical treatment: removal of the causative tooth, opening and drainage of the purulent focus.

RESULTS AND ITS DISCUSSION

Clinical observations of the state of purulent wounds in the studied groups of patients showed the following results. In the second group of patients, the use of dressings with polyethylene glycol - based ointment "Oflo-melide" provided an acceleration of wound cleansing from necrotic tissues on the 3rd day, there was no purulent discharge already on the 4th day, signs of tissue granulation were found. On the 5-6-th day from the start of treatment, complete resorption of the infiltrate was observed, followed by the formation of atrophic scars.

A higher efficiency of treatment was observed in the 3rd group of patients who, along with traditional therapy, included the Oflo-melide ointment and local laser photodynamic therapy (LPHDT) in the complex treatment. Cleansing of wounds from necrotic masses occurred on the 2nd day from the moment of the start of treatment, already after the first sessions of LPHDT and applying a bandage with ointment. The amount of secreted serous-bloody exudate sharply decreased, on the 3rd day granulation tissue appeared. On the 5-6th day, complete resorption of the infiltrate was observed, wound healing occurred with a soft and aesthetic scar.

Table 5

Terms of regeneration of purulent wounds in the studied groups (days)

Treatment Methods	cleansing from necrotic tissues	Stop of exudation		Resorption of infiltrate	Appearance of granulation tissue	Beginning of epithelialization
		purulent	serous			
TT + LPHDT	4	4	5-6	5-6	5-6	7
TT + Oflo-melide	5-6	5-6	6-7	6-7	>7	> 7
TT + Oflo-melide + LPHDT	2-3	3	4	4	4	5-6

The above described changes in the state of wounds in patients of the 1st and 2nd groups were observed later - only on the 7th day. An assessment was also made of the average length of stay of patients with abscesses and phlegmon of the maxillofacial region in the PCLS department: patients who included dressings with "Oflo-melide" and LPHDT in the treatment regimen remained in the hospital for 4-5 days, which is 3-4 days less compared with the group

of patients receiving traditional treatment (Table 5).

In addition, clinical observations have shown that the inclusion of local LPHDT in the complex treatment regimen activates the processes of repair and regeneration and promotes faster wound cleansing, maturation of granulation tissue and allows preparing the wound for closure at an earlier time, thereby accelerating the healing and recovery of the patient (Fig.1).

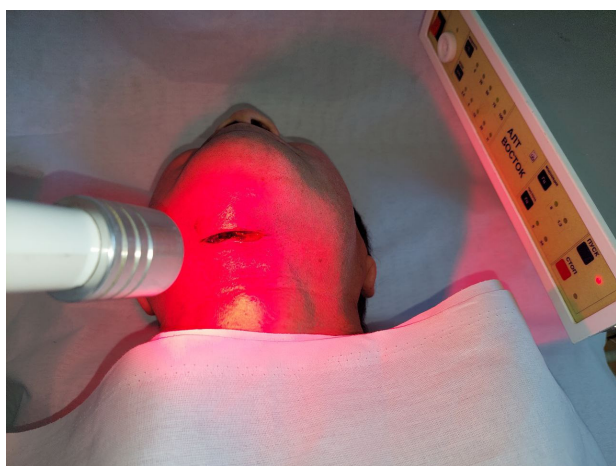


Fig. 1. Procedure and result of laser photodynamic therapy of a purulent wound

In this case, it is important to choose the correct dosage of LPHDT. During the study, it was also determined that the use of LPHDT for 10 minutes can reduce the microbial contamination of the wound below a critical level in a short time and contribute to the early transition of inflammation to the second phase of its course. But at the same time, after that, it is necessary to reduce the duration of exposure to 5 minutes, which prevents the negative impact associated with its overdose.

CONCLUSIONS

The course of acute odontogenic inflammatory diseases in all cases is accompanied by pain sensations, the intensity of which is determined by the localization of the purulent-inflammatory process, the duration of the disease, and the clinical form of HL of the maxillary tract.

The inclusion of dressings with Oflomelide ointment and LPHDT sessions in case of purulent-inflammatory diseases of the maxillofacial area in the traditional treatment regimen restores microbiological, immunological and biochemical parameters to normal values, which is positively reflected in clinical observations - signs of inflammation stop on the 3rd-4th day of treatment, and the terms healing of a purulent wound is significantly reduced (up to 38% on average), the formation of purulent scars and the development of complications are prevented.

Polyethylene glycol - based ointment "Oflomelide" was developed and implemented, which makes it possible to reduce the time of hospitalization of patients by an average of 35%.

CONFLICT OF INTERESTS

The authors declare the absence of obvious and potential conflicts of interest related to the publication of this article.

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AVAILABILITY OF DATA AND MATERIALS

All data generated or analysed during this study are included in this published article.

AUTHORS' CONTRIBUTIONS

All authors contributed to the design and interpretation of the study and to further drafts. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

All applicable international, national, and/or institutional guidelines for the care and use of animals were followed.

CONSENT FOR PUBLICATION

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КОНФЛИКТ ИНТЕРЕСОВ

Авторы заявляют, что данная работа, её тема, предмет и содержание не затрагивают конкурирующих интересов.

ИСТОЧНИКИ ФИНАНСИРОВАНИЯ

Авторы заявляют об отсутствии финансирования при проведении исследования.

ДОСТУПНОСТЬ ДАННЫХ И МАТЕРИАЛОВ

Все данные, полученные или проанализированные в ходе этого исследования, включены в настоящую опубликованную статью.

ВКЛАД ОТДЕЛЬНЫХ АВТОРОВ

Все авторы внесли свой вклад в подготовку исследования и толкование его результатов, а также в подготовку последующих редакций. Все авторы прочитали и одобрили итоговый вариант рукописи.

ЭТИЧЕСКОЕ ОДОБРЕНИЕ И СОГЛАСИЕ НА УЧАСТИЕ

Были соблюдены все применимые международные, национальные и/или институциональные руководящие принципы по уходу за животными и их использованию.

СОГЛАСИЕ НА ПУБЛИКАЦИЮ

Не применимо.

ПРИМЕЧАНИЕ ИЗДАТЕЛЯ

Журнал *"Интегративная стоматология и челюстно-лицевая хирургия"* сохраняет нейтралитет в отношении юрисдикционных претензий по опубликованным картам и заявлениям институциональной принадлежности.

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