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Overview Of Comprehensive Treatment Of Acute Purulent-Inflammatory Diseases Of The Face And Neck

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ABSTRACT

The aim of the work is to systematize the data of special literature for the clearest definition of the directions of studying the modern approach to the diagnosis, prognosis and treatment of pyoinflammatory processes in the maxillofacial region and neck. As a result of the analysis of the data of special literature, it becomes obvious that in recent decades the idea of the etiology and pathogenesis of pyoinflammatory processes in the maxillofacial region and neck has changed, which determines the need for further search for new informative methods of diagnosis, prognosis, as well as the most effective methods of treatment and prevention of complications for this pathology.

KEYWORDS

Pyoinflammatory diseases, immunocorrector, ozone therapy, polyvinyl chloride

INTRODUCTION

Treatment of acute pyoinflammatory diseases (PHI) of the face and neck continues to be one of the urgent problems of emergency surgery. This is primarily due to the significant number of patients with inflammatory diseases, which make up 10-20% of surgical patients who visit dental clinics and about 50% of patients being treated in maxillofacial hospitals [1]. In

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addition, there is a steady growth of progressive phlegmon, spreading to several cellular spaces and leading to such formidable complications as contact mediastinitis, thrombosis of the cavernous sinus of the dura mater, sepsis [2].

With severe complications of inflammatory diseases of the face and neck, despite the multicomponent therapy, the great efforts of surgeons, resuscitators, the colossal costs of treating such patients in the intensive care units, it is not always possible to save their lives [3,4]. The urgency of this problem is also due to the fact that mortality continues to be high in case of OGVZ, reaching 28-50%, and with intracranial complications, mediastinitis, sepsis - from 34 to 90%. The frequency of cases of the progressive course of purulent diseases is 3 - 28% [5].

In recent years, in periodicals, materials of congresses and conferences, there have been many reports on new effective methods of diagnostics and treatment of inflammatory diseases of the face and neck (V International Conference of Maxillofacial Surgeons and Dentists. St. Petersburg 2000). Therefore, it is no coincidence that at the VII All-Russian Congress of Russian Dentists (2001), questions on this topic were covered in detail. Inflammatory diseases of the face and neck are infectious in nature and occur with the participation of microbes, most of which are part of the normal microflora of the skin and oral mucosa. In case of violation of the integrity of the skin and mucous membrane of the oral cavity, damage to the marginal periodontium, as well as the destruction of the hard tissues of the tooth with the opening of its cavity, these microbes are introduced into the underlying tissues. Some of them die in the zone of introduction under the influence of factors of nonspecific and specific (immune) defense of the patient's body. Other microbes adapt to new conditions of existence and begin to multiply intensively. It should be emphasized that the development of a local infectious and inflammatory process requires a "critical concentration" of the causative agent of the disease, which is lower, the higher its pathogenic properties [6].

Only a timely started intensive therapy of OGVZ can prevent purulent complications and prevent death. Bearing in mind all of the above, we have developed a method for optimizing the complex treatment of OGVZ, based on a combination of multicomponent therapy with infusions of ozonized solutions and an immunocorrector. All this made it possible to significantly improve treatment results and reduce mortality. If with the traditional complex treatment of progressive phlegmon lethality reached 8%, then with the use of an immunocorrector and ozone therapy it decreased to 2.85% [8,9].

In modern medicine, purulent infection remains an urgent problem, since there are still no sufficiently reliable methods for its prevention and treatment. There is no doubt that the treatment of patients with HHVD should be comprehensive, using primarily surgical methods, as well as medical and physiotherapeutic treatment [10].

THE MAIN FINDINGS AND RESULTS

We can say with complete confidence that if acute purulent-inflammatory diseases of the face and neck were diagnosed early, i.e. before the development of a purulent process, then with a timely begun complex treatment in many patients it would be possible to "cut off" the pathological process and achieve its

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reverse development. But with regret, we have to admit that patients are admitted to the hospital late, already after the development of suppuration, so almost all patients have to be operated on. Many researchers are forced to state that the traditional therapy recommended by the authors in 1980-1995. currently has an insufficient therapeutic effect [11]. In modern purulent surgery in general and in the treatment of purulent-inflammatory diseases of the maxillofacial region, complex methods of therapy prevail (Shargorodsky A.G., 1998). In addition to surgery, they include etiotropic therapy, anti-inflammatory, immunocorrective and physiotherapeutic treatment (Gubin M.A., 1996, 1998). Many clinicians now recommend that surgical interventions for OGVZ be carried out in a hospital setting under general anesthesia (Alexandrov N.M., 1986; Kolesov A.P. et al., 1989). Moreover, many authors, in particular Yu.M. Batrak et al., (1996) note that in the context of an increase in the number of patients with purulent infection, against the background of a decrease in the effectiveness of antibiotic therapy, the main emphasis in the treatment of these patients should be on the most radical methods of surgical treatment, and more extensive use of methods of physical and functional rehabilitation. The dissection of tissues should be wide enough, but at the same time economical. After opening abscesses and phlegmons, drainage is necessary, which must be effective enough to create a good outflow of wound discharge, which in turn prevents the progression of infection and, moreover, the development of formidable complications. According to B.M. et al. (1990), wound packing, the use of rubber graduates and single rubber tubes should be excluded from the arsenal of surgical care, since they do not provide a sufficient outflow of wound discharge. There are many methods for treating patients with HHVD. Yu.A. Davydov et al. (1992) consider biologically justified wound healing under vacuum drainage conditions at p = 0.1-0.15 atm. in combination with a blind seam. Apply with a blind seam. The technique of combined drainage is used, the essence of which is the rehabilitation of the postoperative wound and the bone marrow canal (Klyukvin I.Yu. et al., 1996). E.S. Tikhonov et al., (1996) for permanent dialysis of the wound, they carry out directed transport of drugs to the focus to obtain their high concentration by drainage, using various kinds of rubber and polyethylene strips and double-lumen rubber and polyvinyl chloride (PVC) drainages. Quite often, active drainage (aspiration, flow-through, flow-aspiration) is also used, but the rejection of traditional drainage in modern conditions still seems to be premature (Shafit S.E., Samoilov V.A., 1996).

In the treatment of HHVD, antibacterial agents occupy an exclusive place and significantly affect the course and outcome of diseases, but they complement, not replace, surgical intervention.

It should be noted that in recent years, the sensitivity of microflora to antibacterial drugs has significantly decreased. This explains the difficulties in determining the optimal variant of antimicrobial treatment for each patient [12]. In this regard, with regret, we have to state that the antibacterial drugs currently used in purulent surgery are not effective enough, which creates difficulties in determining the optimal option for antimicrobial treatment, and therefore many authors recommend the use of combined antiseptic agents (Kuzin M.I. et al. ., 1990; Dmitrieva L.A. et al., 1997). To increase the effectiveness of antibiotic therapy, various

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ways of carrying antibiotics to the inflammation zone are used: administration directly into the wound using dialysis (Dudenko G.I. et al., 1990), by regional infusion through catheterized branches of the external carotid artery (Pasevich I.A. , 1996), by the lymphogenous route (Levin Yu.M., 1986; Devyatoe V.A. et al., 1991), intraosseous administration or intraosseous lavage (Arkhipov V.D., 1988). The most promising drugs today, according to many authors (Guk AS et al., 1990; Weitekamp M., 1993), are: in relation to the entire anaerobic spectrum - lincomycin, dalacin C and rifampicin; to gram-positive flora (peptostreptococci) - ampicillin; with mixed flora with Pseudomonas aeruginosa and sensitive strains of staphylococcus - gentamicin; with anaerobic-aerobic infection, cefotoxime is highly active. Clinical studies D. Classen et al. (1992) suggest that an adequate concentration of antibiotics in the proposed surgical site should be achieved within 30-40 minutes from the start of the operation. According to D. Classen et al. (1992), the time interval of the greatest efficiency should be achieved from 0 to 2 hours before the start of the operation, since the contamination with microbial strains increases on both sides of the specified interval.

Purulent-inflammatory diseases of the face and neck most often occur against the background of secondary immunodeficiency, which requires immunocorrective therapy [13].

According to many researchers, OGVZ of the maxillofacial region occurs against the background of altered reactivity of the body - a decrease and perversion of nonspecific and specific immunological reactions, deficiency of cellular and humoral immunity (Gubin M.A., 1998). At the same time, significant changes were established in indicators that reflect the state of organs and systems. Secondary immunodeficiency is characterized by a decrease in the total number of lymphocytes, populations of T- and B-lymphocytes, an imbalance of immunological parameters, an increase in the number of zero cells, suppressive depression, a decrease in the immunoregulatory index (IRI), the appearance of degenerative cellular elements, as well as an imbalance of immunoglobulins, a decrease in mononuclear phagocytic system [14].

Recent studies show that antibiotics enter into complex reciprocal relationships with infectious agents, on the one hand, and with the immune system of a macroorganism, on the other (Ushakov R.V., Tsarev V.N., 1997). At the same time, according to the data obtained, antibiotics of different classes have a very diverse effect on certain links of the nonspecific and specific immunity of the organism, which naturally requires careful study (Kudinova E.S. 1999).

The most significant mechanisms that ensure the fight against infection in the body is the phagocytic system, which includes micro- and macrophages, as well as regulators of their functions [15].

One of the ways to increase the effectiveness of treatment was the development of a differentiated approach to the complex treatment of patients with HHVD based on an objective assessment of the severity of the course and prognosis of the disease and taking into account the characteristics of the body's response to the infectious focus - according to the normergic, hypo- or hyperergic type (Kashmirsky V.A., Osokina M. .I., 1996).

Literature data (Lebedev K.A., Ponyakina I.D., 1996. Volozhin A.I., 1993, 1996) show that

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different stages of the inflammatory process are characterized by different shifts in immunogram indices. For example, the level of T-suppressors decreases at the beginning of the inflammatory process and increases at the height of inflammation. The number of B-lymphocytes increases only in the 2nd stage of inflammation, while the number of T-lymphocytes remains reduced, while their absolute number remains unchanged or increases. These changes are characteristic and are observed in all normally current odontogenic inflammatory diseases.

With the development of immune deficiency, all these shifts, characteristic of each phase of inflammation, were either not fully detected or were weakly expressed, which indicates an unfavorable development of inflammation. The use of immunomodulators usually leads to the restoration of shifts in the value of immunological parameters, but at the same time, an overdose can lead to an aggravation of the course of the disease due to an overstrain of the immune system. Therefore, the restoration of the values of immunological parameters to the level characteristic of the corresponding phase of inflammation is a signal for the cancellation of immunomodulators (Lebedev K.A., Ponyakina I.D., 1996).

According to many authors (Shargorodsky V.M., 1998), traditional definitions of T and B cells and their populations at the height of inflammation give wide scatter of values. When using a more advanced method, discrete - dynamic according to R.V. Petrov, although more objective data are obtained, due to the fact that it turned out to be laborious, it did not become widespread. A simpler and more reliable assessment is an immunogram showing the functioning of the whole immune system (Kazimirsky V.A., 1996; Lebedev K.A., Ponyakina I.D., 1996). This method is also used for purulent-inflammatory diseases of the face and neck. The most severe general course and local progression of the purulent process was characterized, as one would expect, by the hyperergic type of inflammatory reaction. At the same time, the immunogram showed various violations, both of individual links of immunity, and of the entire system as a whole. Taking into account deep and persistent immune disorders in patients with purulent odontogenic infection, it is necessary to include targeted and controlled immunocorrecting or immunostimulating therapy in the treatment complex, which will optimize regenerative processes and eliminate the imbalance in the immune system (Gubin M.A., 1996).

According to TG Robustov et al. (1990), immunocorrection in patients in the reactive phase of the disease should be carried out by the administration of immunomodulatory and stimulating drugs (sodium nucleinate, levamisole, T-activin, thymalin, timoptin, etc.). In sepsis and especially in the terminal phases of the disease, when the mechanisms of compensation and protection are depleted, immunosuppressive therapy is carried out (infusion of native hyperimmune plasma, leukocyte suspension, directional gamma globulins, etc.) During the period of convalescence, immunomodulators and nonspecific stimulants are used.

Recently, in the literature on immunology and surgery, there are many reports of immunotherapy with the drug roncoleukin. Roncoleukin is a recombinant human interleukin-2, a cytokine. Cytokines have the ability to participate in the body's defense reactions, which are provided by natural

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(adaptive) and acquired immunity, inflammatory reactions and changes in the sensitivity threshold of neurons in the peripheral and central nervous system. Interleukins contribute to the formation of immunity in response to damaging environmental factors that penetrate the body (Kozlov V.K. 2002).

The clinical study included a traditional survey of complaints, anamnesis of the disease and life, an objective assessment of the general condition, auxiliary and special methods of examination of patients with HHVD.

When patients were admitted to the hospital, subfebrile temperature was more often observed (37.4-38.5), with severe severity it reached 39.5 and 40C.

To determine the severity and prevalence of the inflammatory process, the patients were examined by conventional clinical and laboratory methods, including a complete blood count (Zolotnitskaya R.P., 1987), where the hemogram parameters, hemoglobin content, the number of erythrocytes and leukocytes, leukocyte count and ESR were determined. In addition, a number of biochemical parameters were determined (the ratio of the main protein fractions - albumin and globulin, the content of glucose, residual nitrogen, fibrinogen, seromucoid, total bilirubin, y-glutamyl transpeptidase, aspartate and alanine aminotransferases (AST, ALT). fractions in blood serum were determined by electrophoresis (Menshikov V.V., 1987).

Clinical observation included an assessment of the general condition of patients in dynamics, the severity of intoxication of the body, determination of the adaptive response of the body. From local manifestations, the dynamics and prevalence of the inflammatory process, the state of the wound, edema and infiltration of soft tissues, the presence of pain syndrome, dysfunction of chewing and swallowing were taken into account. The studies were carried out before the start (baseline data) and on the 5th day of treatment.

Endogenous intoxication due to mass death of microorganisms, tissue necrosis in the focus of inflammation, metabolic disturbances and hypoxia are the cause of homeostasis disturbance in HHVZ. Therefore, with them, it is important to objectively assess the degree of intoxication of the body in order to judge the adequacy of the treatment, the dynamics and prognosis of the disease. The body's response to the appearance of endogenous intoxication is a change in the leukocyte blood count. To assess the severity of which the leukocyte intoxication index (LII) was used (Kalf-Kalif Ya.Ya., 1941). This index, which normally equals 0.3-1.5 U, was calculated by the formula: where, ml - myelocytes;

The LII value of more than 1.5 U indicates intoxication of the body. This indicator rises with purulent-inflammatory diseases early, even in the prodromal period (Guk A.S., 1990).

Also, an objective indicator in the diagnosis and course of a purulent-inflammatory process is the determination of the concentration of average mass molecules in the blood (Gabrielyan N.I., Dmitriev A.A., Sevostyanova O.V., 1985). Analysis of MSM for toxicity shows that they have an immunosuppressive effect.

The fight against intoxication is an extremely important component in the treatment of purulent-inflammatory diseases. The range of targeted methods of detoxification therapy is quite wide: from various options for infusion-

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transfusion therapy to combinations of methods of extracorporeal detoxification. To assess the severity of the intoxication syndrome, we used the assessment criteria developed by M.A. Gubin., Yu.M. Kharitonov (1996).

Acute purulent-inflammatory diseases of the face and neck do not always proceed in the same way in all patients, which depends both on the individual and immunobiological characteristics of the organism, and on the virulence of the pyogenic infection, the localization of the process and the adequacy of treatment.

In the departments of maxillofacial surgery, patients with severe inflammatory diseases are treated, often requiring a detailed examination and long-term complex therapy. The treatment of such patients is a complex problem, which consists of the following main tasks (Gostishchev V.K., 1996). 1. Timely adequate performance of surgical intervention 2. Targeted antibiotic therapy. 3. Effective detoxification therapy. 4. Immunocorrective and restorative therapy. 5. Restoration of impaired functions of organs and systems. The division of methods of treatment of pyoinflammatory diseases into operative and conservative ones can be carried out conditionally, since they are all aimed at solving the same problems - suppressing microorganisms in the lesion focus, reducing intoxication, increasing immunity and nonspecific protective factors. Cellulitis of the face and neck constitute the most frequent and complex pathology encountered in the practice of the departments of maxillofacial surgery. One of the features of odontogenic phlegmons is their frequent spread through the cellular spaces and fascial clefts with the formation of purulent streaks, which must be taken into account during surgery.

It should be noted with regret that patients are admitted to the hospital so late that it is no longer necessary to talk about successful conservative treatment. Therefore, absolutely all of them undergo an operation - opening the phlegmon, necrectomy and drainage with perforated tubes in the first 2-3 hours after admission to the hospital. In addition, long before admission, patients independently take antibacterial drugs at their own discretion, which adversely affects further treatment and the course of the disease.

It can be seen from this that cellulitis is progressing both due to untimely surgical treatment, and the haphazard use of antibiotics and reduced immunoreactivity of the body. Most of the patients, about 60.4%, were treated on an outpatient basis in a polyclinic before going to the hospital. They removed the "causal" tooth, opened the purulent focus, prescribed antibiotics and physiotherapy. But in connection with the progression of the inflammatory process, the patients were sent to the hospital.

CONCLUSION

From practice it is clear that phlegmon of two or more cellular spaces are more often observed. This is due, as already mentioned, with a change in the biological properties of microorganisms, a reduced immunoreactivity of the body and late treatment of patients for medical help. Taking into account these features, we analyzed our own observations of 50 patients with pyoinflammatory diseases of the maxillofacial region, who received standard conventional therapy. On admission, the patients complained of pain and swelling in

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the area of inflammation on the face, weakness, and malaise. In addition, sometimes due to involvement in the process of the periopharyngeal, pterygoid-jaw spaces, the bottom of the oral cavity, it is difficult to open the mouth and swallow. Also, due to the fact that spilled phlegmons are accompanied by severe intoxication, significant metabolic disorders and functions of vital organs, the most severe patients experienced breathing difficulties. This can be explained by mechanical obstruction of air flow into the respiratory tract due to swelling of the soft tissues of the neck and severe intoxication. Due to pain during chewing and swallowing, the intake of food and liquid into the body is limited, which leads to dehydration of the patient's body. Due to the difficulty in opening the mouth and swelling of soft tissues, it is often difficult to intubate the trachea for anesthesia. In such cases, we perform tracheostomy and carry out intubation anesthesia through it. With the generalization and spread of the inflammatory process along the cellular spaces of the neck into the mediastinum, an operation was performed - transsevular mediastinotomy according to Razumovsky with active drainage. After surgery, conservative treatment was carried out, which included antibiotic therapy, infusion of physiological and 5% glucose solution, blood fractions and blood substitutes. Microbiological studies were performed to confirm the effect of antibiotic therapy. Among the variety of microflora in the etiology of purulent-inflammatory diseases, obligate anaerobes are of great importance. With odontogenic phlegmons, anaerobic bacteria were isolated in 64.4% of patients. The main place among the anaerobes was occupied by bacteroids, fusobacteria. Facultative anaerobes were obtained by us in 93.3% of patients. Among the isolated strains of facultative anaerobes, the share of various staphylococci (S. Aureus, S. Epidermidis) accounted for 66.8%, and in 53 hemolytic streptococcus - 33.2%. It should be emphasized that the growth of staphylococci and streptococci occurred both under aerobic and anaerobic conditions. These microorganisms are, in essence, facultative anaerobes, but can modify their metabolism to adapt to microaerophilic and anaerobic conditions. It should also be noted that anaerobes further aggravate tissue hypoxia, intensively consuming oxygen in the reproduction phase, thereby improving the conditions for the colonization of new tissue sites with anaerobes. The microbial landscape of purulent wounds after opening and drainage was characterized by a sharp predominance of polymicrobial associations. Floras of 2-5 types of microorganisms were isolated in 79.6% of patients. Patients with associations consisting of two, three and four cultures predominated. As already noted, the causative agents of diseases in 64% of patients were anaerobic-aerobic association of microorganisms, less often aerobic-aerobic and anaerobic-anaerobic associations were found: in 24.0% and 12.0%, respectively.

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