

The Effectiveness of Diet Therapy in the Early Stages after Surgery for Acute Anaerobic Paraproctitis and Correction of Anemia in a Hot Climate

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ABSTRACT: The article presents a review of the literature on the problem of effectiveness of diet therapy in the early stages after surgery for acute paraproctitis and correction of anemia in a hot climate. Data on the frequency and mortality in this pathology, issues of etiology, classification, diagnosis, surgical treatment and antibiotic therapy are given.

KEYWORD: Anaerobic paraproctitis, anemia, hot climate, microbiological verification, coloproctological patients.

Introduction.

Anaerobic paraproctitis (AP) is rare in clinical practice and there are few publications on this disease. It should be emphasized that AP is often treated as purulent paraproctitis. Microbiological verification is rarely carried out, the diagnosis of anaerobic process is made only with a sharp deterioration in the condition of patients, progression of necrosis in the cellular spaces and an unfavorable outcome.

Literary review and methodology.

For the first time, necrotic phlegmon of the perineum (anaerobic paraproctitis) was described by I.G. Karpinsky in 1870 [12]. A.N. Ryzhykh published 24 observations of AP in 1956, highlighting the putrefactive process, the progressive form of AP (with or without lymphangitis), and anaerobic sepsis. A.M. Aminev [1] combined the first two forms into putrefactive-gangrenous paraproctitis. A number of studies have shown that nonclostridial anaerobic microflora predominates in the structure of AP.

At present, lethality in AP remains high, especially in the case of generalization of the anaerobic process and the development of sepsis [10]. AP is one of the life-threatening infections, the mortality rate is 15-40%, when the process is generalized it reaches 80%. Those who died from acute paraproctitis accounted for 18% of the total number of coloproctological patients [7]. According to E.E. Bolkvadze et al. (2009) [4], out of 140 patients with AP, 48 (24.6%) died, and 30 patients died in the first 5 days, i.e. in the most severe period of sepsis, according to other data, mortality is 16%. Of all forms of acute paraproctitis, 1-3% of cases occur in AP. The average mortality rate is 20% in the population and 36% among people with diabetes. More than 60% of patients with AP are people of older age groups; among the dead, elderly and senile people also predominate. The reasons for the high mortality in AP are [3]: a high degree of invasiveness, significant toxicity of anaerobes and the predominance of non-clostridial gram-negative anaerobes, which significantly aggravates endotoxemia. Mortality is directly related to the late diagnosis of AP and, accordingly, to the spread of the necrotic process and the severity of general septic intoxication [5]. Improvement in diagnostic methods, early radical operations have reduced mortality from 38.5% in 1992 to 7.6% in 2011. Mortality depends on the age of the patients. Thus, 10 out of 15 patients died at the age of 71-80 years, and 6 out of 7 patients with AP died at the age of over 80 years [15]. According to other data, lethality in AP is 12.9-40%.

Patients with diabetes mellitus have a high frequency of complicated course of the wound process, the rapid spread of purulent-necrotic process without a tendency to delimitation. AP is more common in poor hygiene in combination with diabetes mellitus. Some authors point to certain factors that affect systemic immunity and predispose to the development of AP: autoimmune diseases and corticosteroids, antitumor chemotherapy, neurosensory diseases, periarteritis nodosa. With purulent banal paraproctitis, the aerobic bacterial flora is the leading one. However, anaerobic microorganisms are sown in 15-50% of the wound discharge [3,4]. The pathophysiology of anaerobic infection is associated with a very high dose and virulence of the infecting agent with a sharp suppression of immunity, which is a catastrophe of colonization resistance and loss of the competence of local immunity [11]. The abscess is not demarcated during anaerobic infection, and depending on the species of anaerobes, dissemination occurs, cellulite of various sizes is formed, or penetration occurs with damage to the fascia and muscles. These processes are associated with an increase in blood proteolysis and alteration due to the release of proteinases due to the death of neutrophils, in the lysosome of which they are located. Non-clostridial anaerobic infection (*Peptostrept parrilius*, *Bacteroides fragilis*) was detected in 82% of cases, clostridial infection was detected only in 18% of cases [14]. According to the classification of soft tissue infections according to D.H. Ahrenholz proposed to classify AP as a lesion level IV (damage to muscles and deep fascial structures). Specifying the level of the lesion according to this classification aims the surgeon to detail the coverage of the purulent-necrotic process of soft tissues and cellular-fascial spaces, to clarify pre- and intraoperative diagnostics and a certain set of additional treatment methods. There is a fairly clear relationship between the level of infection and a certain set of microorganisms that are the cause of the development of a purulent process.

Discussion and results.

There are three forms of AP depending on the nature of the pathogen: clostridial, non-clostridial and putrefactive [3,5]. Clostridial AP is characterized by dense edema in the affected area, pallor of the skin with a bronze tint or bluish spots, during the operation - a fetid odor, a small amount of pus, a "lifeless" appearance of the wound, no bleeding, imbibition of tissues and muscles with hemorrhagic exudate, "boiled" type of muscles. In non-clostridial AP, there is a discrepancy between the severity of the general condition and the weak severity of local signs, an extensive, mild, low-painful swelling of the perineum with moderate skin hyperemia without fluctuation is revealed. During the operation, numerous purulent passages of various sizes are found in the soft tissues, extensive streaks on the abdominal wall, thigh, buttocks, retroperitoneal space, in some patients - necrosis of the scrotum and penis (Fournier's syndrome). The fiber is gray or gray-dirty in color, there are multiple hemorrhages, tissue imbibition with a serous-purulent fetid liquid with gas

bubbles and droplets of dark or black fat (due to *B. melaninogenicus*). In the putrefactive form of AP, the general condition is slightly disturbed, there is a slightly painful, dense infiltrate without clear boundaries and tissue crepitation, sometimes there is icterus or hyperemia of the skin over the infiltrate (subfascial phlegmon). During the operation, a significant amount of fetid, bubbling exudate of a dirty gray color, black or dark green tissue is released, tissue bleeding is mild, cellulite is often detected, since the process spreads suprafascially.

During AP, the first general somatic period (3-5 days) is distinguished, when the systemic inflammatory reaction syndrome is formed against the background of persistent bacteremia, and the local reaction consists in the formation of perineal phlegmon. It has been shown that when diagnosing AP during this period, the best results in treatment are achieved and mortality rates are reduced. When an emergency operation is delayed, the process becomes generalized, and mortality increases sharply - up to 73%. Sometimes they note the "lightning" development of the disease - within 2-3 days. Due to the difficulties of cultivation and identification of anaerobic microflora, the primary diagnosis of AP is based on clinical and intraoperative data. Microscopy of surgical specimens, examination of exudate, ultrasound and CT when the process spreads to neighboring cellular spaces contribute to the clarification of the diagnosis. For preoperative differential diagnosis of AP, the blood plasma chemiluminescence index can be used.

A more accurate determination of the border of tissue necrosis during surgery and, accordingly, the implementation of radical necrectomy is facilitated by the use of laser Doppler flowmetry [4]. During surgery for AP, a fetid putrefactive odor is detected, "dry" fasciomyositis in clostridial infection, and in non-clostridial infection, a gray-black effusion with gas bubbles and fatty droplets [13]. In case of AP in conditions of an emergency operation, it is often impossible to determine the depth (height) of the abscess, its spread through the cellular spaces [4,5]. More than 80% of patients have a high localization of anaerobic lesions in the pelvic and ischioanal spaces, in 10% of patients - horseshoe-shaped AP or pelvic phlegmon. In studies, 48 out of 140 patients had streaks in the lower extremities, anterior abdominal wall, lower back and scrotum. Surgical treatment includes adequate necrectomy until distinct capillary bleeding appears in the tissues.

Treatment is carried out in a special ward of the intensive care unit, often with the transfer of the patient to a ventilator. Interventions in the anal canal should not be performed due to the risk of anal sphincter insufficiency. At any stage of AP, an emergency operation is required - opening the abscess with a wide incision, necrectomy, drainage of the abscess and streaks [5], which can reduce or prevent the release of microbes and toxins into the blood. When draining, it is recommended to use double lumen PVC tubing for active suction and, if necessary, flushing. In 24% of cases, there is a need to perform surgical interventions in adjacent cellular spaces in the amount of fasciotomy, foscionectomy, and additional drainage. In AP, emergency surgery is the only way to prevent sepsis. The operation involves, first of all, necrectomy, opening and adequate drainage of purulent streaks [5].

It is recommended to start antibiotic therapy 30-40 minutes before surgery, using the "gold standard" - clindamycin in combination with gentamicin and metronidazole or thienam/amoxiclav in combination with metrogil and dioxidine [3]. The high efficiency of using vacuum therapy in the treatment of AP has been shown [8]. Sigmotomy is performed in exceptional cases - with the destruction of the rectal wall adjacent to the phlegmon [3,4], with pelvic phlegmon with necrosis of the anal sphincter, pelvic floor and rectal wall. The terms of inpatient treatment averaged 25.8 days (from 20 to 37 days).

Conclusion.

In conclusion, it should be noted that AP remains a severe, life-threatening surgical infection. The basis for the treatment of patients is early diagnosis, urgent radical necrectomy with wide, active drainage, massive antibiotic therapy, correction of disorders of the cardiovascular system and hemodynamics.

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