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PREVENTIVE MAINTENANCE OF COMPLICATIONS AFTER AN ABDOMINAL TRAUMA

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Key words: *abdomen trauma, complication after a trauma, preventive maintenance of complications.*

Abstract. *Bibliographic review pertaining the questions of abdomen trauma, development of complications after abdominal trauma and prevention of complications is given in the article.*

At present the traumatism remains one of the causes of the high lethality, physical inability and long disability. In the European region WHO 800000 people die every year, 60 thousand are hospitalised and 600 thousand forced have to apply for the first aid. Traumas are the main cause of people's death till by the age of 45 old. According to different authors middle age of the suffered people is 15-45 years (middle age thirty), and according to last years this index has no serious fluctuations, as well as lethality and frequency of complications after the received trauma.

The basic ways of a trauma receiving are mutilation (21%), road and transport accidents (16%), falling (10%) [33, 34, 37, 40] though data of some authors indicate the everyday mechanism of a trauma receiving (46,2%), road and transport accidents (11,8%), other causes (7,1%), industrial traumas (1,1%) [20, 21]. It is necessary to point out, that men and young men are subject to a larger risk, rather than women. Men die in three of four cases from a trauma, 21% of victims are young men [27, 34].

The occluded damages of an abdomen compound 10% among all traumas. The average number of men compounds 77,4%, women 22,6%. Among damages of an abdomen frequency of the occluded traumas of a abdomen without damage of viscera organs compounds 23% while the occluded trauma of a gaste with a damage of internals compounds 21,3% [22, 34, 40].

Despite the achievements of diagnostic methods, and treatment methods, diagnostics of abdomen traumas remains an actual problem [33, 37]. There is a risk of development, as early (continuous peritonitis, intra-abdominal abscesses, an abdominal sepsis etc.), and serotinous complications (adherent process, postresection syndrome, etc.) [31].

A special attention should be paid to the development of infectious complications after a received trauma. Development of infectious complications may to expected among the survived in 48 hours [7, 11, 42]. Complexity of the question, concerning abdomen damages, is that very often this problem is combined with outabdominal damages which are accompanied

by compression-dislocational brain syndrome, an acute massive bleeding, respiratory failure and circulatory insufficiency, instable fractures of pelvic bones and extremities [10, 24].

The conducted analysis of the Colombian hospital of Medellin. 10,8% of the victims with the occluded trauma of abdomen, had intraabdominal infection development namely: a peritonitis 51,9%, intra-abdominal abscesses 42,0%, etc. According to the identified microflora at 77,8% it has been presented by aerobes. The most frequent causative agents were *Escherichia coli* (43.3%), *Staphylococcus aureus* (18.9%), *Klebsiella pneumoniae* (14.4%), and *Enterococcus faecalis* (5.6%) [46].

It is necessary to point out, that among all the complications which appear after a laparotomy, concerning penetrating damages of the abdomen, the first place belongs to a festering an abdominal wall wound (30%), a postoperative peritonitis (15%), an incompetence of stiches of an anastomosis - 11%, a sepsis - 5%, postoperative bleedings - 5% and early intestinal obstruction 0,3% [8, 23].

Nowadays for point evaluation systems for the state gravity, probable development of complications, efficiency of therapeutic actions [25] for objective estimation are implemented more and more. All of them have advantages and disadvantages. Among such systems it is necessary to distinguish a scale of gravity of damages ISS (Injury Severity Score) with the help of which we may determine the gravity of the received damages. Advantages of this system lie in foreseeing the gravity of the gained damages in two or three parts of the body even in the cases, when the same but isolated, damages are not dangerous for life. Disadvantages of this system are in it does not take into consideration the gravity of a craniocerebral trauma and the age of patients [25, 39, 44].

MODS scale for the purpose of an assessment of a syndrome of multiorgan insufficiency has been developed. A serious abdominal trauma is rather often accompanied by the development of a syndrome of multiorgan insufficiency and determination of a degree

of danger with the further planning of medical tactics with the help of MODS scale [25, 39, 44].

APACHE scale (Acute Physiology And Chronic Health Evaluation) one of the systems of the patient state assessment which estimates objective and laboratory data specifying the state severity level [25, 44].

The data of integrated systems of assessments are useful for the purpose of dynamic overseeing of a the patient's state, planning of treatment tactics, and also the preventive actions with the purpose to reduce risks of complications and to affect the quality of life in the future [39].

In the early period of a trauma uncomplicated flow is accompanied by moderate raising of proinflammatory cytokines, in the blood content while in the development of the endogenous intoxication syndrome and a septic shock their concentration increases at ten times. Disturbance of immune indices, especially patients who are advanced in years are more often accompanied by the development of the secondary immune insufficiency with the result of pusinflammatory processes [32].

The formation of intraabdominal abscesses is expected to be one of complications [5]. Their possible localization may take place in: an omental bursa, pouchs, canals and sines of an abdominal lumen, fat of retroperitoneal space, liver, spleen, pancreas. This process can develop as a result of both a neglected acute surgical disease, and insufficient sanitation, a flaccid peritonitis, irrational and ineffective drainages of an abdominal cavity. Data of different authors indicate the development of intra-abdominal abscesses in 14,7-25,6% cases of postoperative complications and the death rate of 4,7-14,2% [5, 16]. Taking into consideration the possible cause of this complication development, both an abdominal trauma, and an operative measure interference, an accompanied pathology, the age, a group of patients who had an abdominal trauma may expect to have a higher index. The problem of intra-abdominal abscesses diagnostics states that sometimes patients may have the development of this complication with normal temperature and normal indices of leucocytes in blood though the latter ones are caused by the state gravity as a whole [5]. Not the last place belongs to the infectious agent who causes this complication.

Patients with the abdominal trauma complicated by abscesses and phlegmons, are observed to have adgezive-cooperative interaction disturbance of immunocompetent cells and the raised readiness of lymphocytes to Fas-dependent apoptosis, which are proved by a low initial level of expression CD11a+ i CD162+ and augmentation in blood CD95 +-lymphocytes. The specified changes of immune system are effectively corrected by operative measures interfer-

ence: on the seventh day after operation fraction CD162 of +-cells and CD95+-lymphocytes are normalised under content augmentation in blood CD162+ i CD16+-cells which provide processes regeneration [32, 43].

As continuation of postoperative abscesses or posttraumatic formation of an abscess the development of adherent process, that unlike the last complication influences the quality of life for a long time [26]. A especial danger of this pathology consists in consequences which cause sterility in women, and people may have complications in relapsing intestinal obstruction [19].

Pancreas occupies a special place among the damages of organs of an abdominal lumen [1, 3, 12]. Anatomically well protected pancreas is damaged rather seldom, from 4,3% to 10,7% [13]. However frequency of postoperative complications of pancreas damage is 35-75% [13, 28]. The lethality remains high, despite of the up-to-date methods treatment of 22-80% [14, 45].

One of the dangerous complications is the postoperative pancreatitis which is dangerous for patients after an abdominal trauma, especially if pancreas was one of objects of a numerous trauma, but the operative measure interference was caused by other organ damage of the abdominal cavity, as to result relatively insignificant damage of pancreas [9, 29]. The peculiarity of pancreas trauma is infact that damage of this organ needs the significant influence of outside energy, and anatomical security is accompanied by simultaneous damage of kidneys, a significant damage of soft tissues with the subsequent development of renal insufficiency, retroperitoneal hematomas and phlegmons [1, 3].

The preventive maintenance main aim is a decreasing of development hazard of postoperative complications [30]. Both the questions of organization and namely medical character are in the preventive complex [34]. We should refer to organizational questions the following: systematic struggle with a hospital infection, use of the up-to-date stitch material, a professional level of the surgeon, participation in postoperative treatment of the operating surgeon, reasonable realization of the concept «the active conducting of the postoperative period» (an early getting up, exercise therapy) [4, 8, 10].

One of the possible complications is the development of the adherent process the peculiarity of which is that this pathology essentially influences the quality of life of the patient in the future unlike other complications which are treated in full under the conditions of a surgical hospital [18, 27].

It is necessary to state, that 50-75% of the patients with adherent process have intestinal impassability with a high lethality [2, 4]. Relapses of operational

treatment of an adhesive disease compound 32-71% which are connected with the lack of effective means of preventive maintenance [15, 17]. Most of the preventive actions are directed to this factor due to the fact that in most cases the etiological agent of development of adherent process is a damage of mesothelium of an abdominal cavity as a result of traumas, peritonitis, and the operative measure when any manipulations cause peritoneum initial tears. However one of the important factors is early activation of the patient, hypothermia of an area of an operative measure interference and renewal of a motility of an intestine. For the purpose of special preventive maintenance fibrinolytic ferments (an urokinase, Streptokinase, etc.), proteolytic ferments (Trypsin, chymotrypsin, etc.) Anticoagulants (a low molecular weight heparin are used) [38, 41]. Sometimes limited agents are used, such as dextrans (rheopolyglucinum). The special interest represent absorbable monocomponental and multicomponent membranes and Membranulas [6]. Conservative therapy includes the usage of glucocorticoids (Hydrocortisonum, Prednisolonum, dexamethasone, etc.), nonsteroid antiinflammatory drugs, the antimicrobial agents [26]. Attempts of different authors to affect a humoral part of adhesive process (getting into an abdominal cavity a heparin, Lydasum, fibrinolytic ferments, etc.) does not provide us with a reliable guarantee of efficiency. This problem lies in impossibility of calculating necessary correction influence on a humoral part [35, 36]. Therefore nowadays the necessity to sanify an abdominal cavity drugs which cause insignificant response from a peritoneum, and also stop proliferative processes arises.

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ПРОФИЛАКТИКА УСКЛАДНЕНЬ ПІСЛЯ ТРАВМИ ЖИВОТА

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Резюме. У статті дається огляд літератури з питання травм живота, розвитку ускладнень після абдомінальної травми та профілактики ускладнень.

Ключові слова: травма живота, ускладнення після травми, профілактика ускладнень.

ПРОФИЛАКТИКА ОСЛОЖНЕНИЙ ПОСЛЕ ТРАВМЫ ЖИВОТА

В. П. Полевой, Ф. Г. Кулачек, Я. В. Кулачек

Резюме. В статье дается обзор литературы по вопросам травм живота, развития осложнений после абдомінальної травми и профилактики осложнений.

Ключевые слова: травма живота, осложнения после травмы, профилактика осложнений.

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