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PECULIARITIES OF ADHESION PROCESS PREVENTION FOLLOWING LAPAROSCOPIC OPERATIONS IN GYNECOLOGY

Abstract. *In order to minimize the risk of the adhesive process development in the abdominal and pelvic cavities after laparoscopic gynecological interventions, women who underwent laparoscopic intervention for therapeutic or diagnostic purposes, were administered Longidase in the postoperative period depending on the complication, duration of operation, and total blood loss during operation. The conducted researches and the results obtained dictate the necessity of prevention of the adhesion formation, since it contributes to the better postoperative period course, reduction of the temperature reaction, pain syndrome, restoration of the function of the organs of the abdominal and pelvic cavity.*

Key words: *adhesion process, laparoscopic intervention.*

The formation of intraperitoneal and pelvic adhesions is a principal clinical problem in the abdominal and pelvic surgery, associated with reparative processes after surgery [2,3,7]. Today, due to an increase in the number and traumatism of operations on the abdominal cavity organs, adhesive disease is observed more often following surgical treatment [1,4,5]. After surgical operations on abdominal organs, adhesive disease develops in 2-10% of cases, however, according to autopsies, the frequency of adhesion origin in the abdominal cavity is significantly higher [8, 11, 15].

The adhesions are the bands of the fibrous connective tissue (synechia, fusion) between the small pelvis organs affecting their mobility [10, 14]. The mechanism of the adhesion process development is complicated and insufficiently explored. With the least damage of cells at participation of various factors of the local and general action, except epithelization, the process of the fibrin formation, converting into collagen - the main component of adhesions, is in progress [9, 13]. Investigations of the pathogenesis of the adhesions' formation have shown that the main reason for their occurrence is a decrease in the level of plasminogen activator within the damaged peritoneum. The fibrin organization occurs until the end of the first three days after the traumatic agent action, and if plasminogene activity and local fibrinolysis are inhibited during

this time, the formation of adhesions occurs. Ischemic tissue damage at surgical intervention or inflammatory peritoneal response is a powerful factor inhibiting tissue fibrinolysis [1, 12]. Thus, rough manipulations with the tissue, the blood presence, ischemia or tissue hypoxia, tissue drying during the operation, the presence of the foreign material elements (doctor's gloves, suturing material, tampon fibers, etc.) are considered to be the routine factors of the increased risk of the postoperative formation of adhesions.

Formation of the adhesion process in the postoperative period is of the particular importance in gynecology today, since the postoperative intraperitoneal adhesion takes the leading positions among the causes of the tubal-peritoneal infertility [2, 8, 11]. The frequency of adhesive complications in small-invasive gynecology according to the data of various authors is observed in 55-97% of patients after abdominal operations and is due to the volume, severity of surgical intervention, microflora increased resistance to antibiotics, changes in immunological reactivity of the organism, etc.

The adhesion process following the abdominal interventions can stipulate intestinal obstruction, infertility of the tubal-peritoneal genesis, chronic pelvic pain syndrome, impaired function of the small pelvis organs (dysuria, constipation), dyspareunia. During the repeated surgical interventions, especially with laparoscopic access,

the adhesive process in the abdominal cavity and the small pelvis, formed after the surgery, is a potential factor in the risk of the internal organs damage [4, 10].

The aim of the work was to minimize the risk of adhesive development in the abdominal and small pelvic cavity after laparoscopic gynecological interventions. Women who underwent laparoscopic intervention with a therapeutic or diagnostic purpose (n = 30), in the postoperative period, were administered Longidase intramuscularly at a dose of 3000 IU once every 3 days with a total course of 5-15 injections, depending on the complexity, duration of operation and total blood loss during it (Group I).

Longidase - a conjugate of hyaluronidase with the derivative of N-oxide of poly-1,4-ethylenepiperazine, which possesses an enzymatic proteolytic (hyaluronidase) activity of prolonged action, has immunomodulatory, chelate, antioxidant and anti-inflammatory properties. The prolongation of the enzyme action is achieved by its covalent bond with a physiologically active high molecular carrier (Polyoxidonium), which has its own pharmacological activity. In addition, Longidase has anti-fibrotic properties, weakens the course of the inflammation acute phase, regulates (increases or decreases depending on the initial level) the synthesis of mediators, increases the humoral immune response and the resistance of the organism to infection. The covalent bond in the preparation provides simultaneous local presence of the proteolytic enzyme and a carrier capable of binding the released inhibitors. Due to these properties, Longidase has not only the ability to depolymerize the matrix of the connective tissue in the fibrous granulomatous formations, but also to suppress the reverse (regulatory) reaction directed to the synthesis of the connective tissue components.

Analysis of the postoperative period course in women who underwent laparoscopic intervention for a curative and diagnostic purpose showed that complications were not observed in any patient who was recommended Longidase prior the traditional management according to the proposed scheme. The group of comparison consisted of 30 women after laparoscopy with the traditional post-operative period (group II, n = 30).

The duration of the temperature reaction was on average 44.8 hours in group I, while in the main group it was 22.6 hours. The duration of the pain syndrome in women with traditional post-operative period was 51.6 hours, in women of group I - 39.4 hours. The quality of the postoperative period not to a small extent depends on the time to restore the function of the intestine. So, in women who received Longidase, the restoration of the bowel function occurred in 36.2 hours, while in women of Group II it was twelve hours longer. In the analysis of hemogram indices, it should be noted that normalization of the indices' levels of leukocytes, hemoglobin, ESR is more rapid (on average, for two days). In general, the duration of a patient's staying in the hospital was different. The average bed-day of patients with the traditional post-operative management period was 95.8 hours, while the patients who received Longidase additionally, were discharged from the hospital on an average after 76.8 hours.

Thus, Longidase use in combination with traditional approaches leads to a reduction of the adhesion process, promotes a better postoperative period course, reduces the duration of the temperature reaction, pain syndrome, restores the function of the organs of the abdominal and pelvic cavity, hemogram indices, and, consequently, reduction of the patients' staying in a hospital, that has a certain economic effect, and improvement of the life quality of women. The above-mentioned fact dictates the need to prevent the adhesion process during and after laparoscopic interventions, which minimizes the risk of the distant complications.

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