

Rehabilitation of patients operated on peritonitis

Rehabilitacja pacjentów operowanych z powodu zapalenia otrzewnej

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Praca opisuje aspekty rehabilitacji we wczesnym okresie pooperacyjnym zapalenia otrzewnej zorientowane na przywrócenie funkcji motorycznych jelita i prewencji niewydolności wielonarządowej.

Słowa kluczowe: rehabilitacja, zapalenie otrzewnej, porażenie jelit, leczenie

This paper highlights the issues of rehabilitation in the early postoperative peritonitis period aimed at restoring motor function of bowel evacuation and prevention of multiple organ failure.

Key words: rehabilitation, peritonitis, intestinal paresis, treatment

© Hygeia Public Health 2010, 45(1): 80-82

www.h-ph.pl

Nadesłano: 28.08.2010

Zakwalifikowano do druku: 10.09.2010

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Introduction

Prevention and rehabilitation of patients operated for abdominal peritonitis is still unresolved today [1, 2].

One of the complications after surgery is the development of concurrent peritoneal disease, which subsequently leads to the patient's suffering. Frequency of a concurrent disease ranges between 60-95% [3]. Union formation is observed after completion of all surgical procedures in the abdomen and spread concurrent process depends on the severity of the course, the nature of the disease, the type and extent of surgery (surgical trauma), the body resistance [4].

Aim

To create an algorithm of rehabilitation of patients with an operated abdomen in the early postoperative period and study the influence of bowel stimulation in the postoperative period in patients with peritonitis to prevent early concurrent intestinal obstruction.

Material and methods

The study comprised 119 patients who were operated on the etiology of peritonitis, caused by inflammation of the abdominal cavity. 47 patients

were men, 72 were women, age of patients ranged from 18 to 92 years.

The cause of peritonitis in 19 (15.96%) patients was acute perforation of appendicitis, in 37 (26.05%) – perforation of stomach ulcers and 12-ring of the colon, in 29 – (22.4%) destructive cholecystitis, in 20 (15.2%) – acute intestinal obstruction. Binding hernia caused peritonitis in 8 (4.8%) patients, other causes – in 6 (4.8%). The character of exudation in the investigated groups was as follows: serous – 13, serofibrinous – 72, bile – 4, fecal – 3, purulent – 27. The analysis of most frequent concurrent disease indicated a disease of cardiovascular system: ischemic heart disease – 78 (60.5%), hypertension – 53 (44.5%), obesity – 21 (17.6%), diabetes 13 (10.9%).

Enteroplegia and dynamic intestinal obstruction in the postoperative period was observed in all patients. Violation of geodynamics and respiratory disorders were more marked in patients aged over 60 years, as was the combination of three or more concomitant diseases. More information was gathered on disorder observed in the presence of diseases of the cardiovascular system and operation lasting more than 90 minutes.

Diagnosis of enteroplegia and dynamic intestinal obstruction in the postoperative period was based

on the basis of patients' complaints, objective and instrumental methods of analysis. There was manifested a clinical picture of abdominal swelling, increasing pain in the postoperative wound, retention of gases, departure of a significant number of gastric contents through a gastric tube, delay in urination, hiccups, decrease in oxygen saturation, which is determined by "YUTASOKSY-201".

Conducting rehabilitation activities including prevention of enteroplegia started before surgery and further treatment at all stages. Prior to surgery the patients were subjected to adequate preoperative preparation: infusion therapy to reduce intoxication and correction of fluid and electrolyte balance based on laboratory studies obtained, eliminating hypovolemia. To reduce intoxication and gastrointestinal tract decompression a stomach pump conducted gastric lavage, enema cleansing and siphon. Oxygen saturation was determined in its lowering of oxygen carried insufflation. In 71 (89.6%) patients a subclavian vein catheterization was performed for adequate preoperative preparation.

One of the effective measures for prevention of postoperative intestinal paresis and stimulation of peristalsis was the introduction of 60-80 ml of 0.25% solution of novocaine in the mesentery of small intestine during the operation. In complicated cases a catheterization of epidural space under a local anesthetic can be performed, which creates good muscle relaxation, thereby reducing intra-abdominal pressure, with long anesthetic effect and stimulation of the motor-evacuation function of intestines.

All patients were postoperatively in the intensive care department or intensive care unit under constant monitoring of oxygen saturation, general clinical examination, control of blood electrolytes and hematocrit. After 3-6 hours after the operation, there were introduced breathing exercises, 12-hour individual exercise therapy, massage; individually for every patient. Drug stimulation of bowel motility started 12 hours after the operation in small doses of prokinetic administration (0.05% sol. Prozerinum 1.0 ml in/m each 8 h, sol. Metoclopramidum 1.0 ml in/m each 8 h), together with the holding of hypertonic enema and setting of colonic tube. Infusion therapy was carried out at a rate of 50-70 ml/kg per day, subject to hematocrit index and central venous pressure. To prevent thromboembolic complications an anticoagulant was used (sol. Clexane 0.4 ml, sol. Fraxiparine 0.6 ml). For early restoration of peristalsis and improvement of microcirculation the following solutions were injected: Trental, Rheopolyglucinum, polarizing mixture (sol. Glucosae 5%, Insulin, Acidum Ascorbinicum 5%, Kalii Chloridum 3%), sol. Rheosorbilactum, sol. Reamberin).

For prevention of respiratory distress and congestive pneumonia during 12-24 hours the aerosols with ultrasonic nebulizers were used with the addition of inhaled mixture of sea salt solution and expedorant.

Against a background of drug stimulation during 12-24 hours a bowel electrostimulation apparatus "Endoton-1" was used, cross method with the frequency of 25-50 Hz for 10 min. 1-2 times a day, given the severity of intestinal paresis.

Early rising in order to prevent enteroplegia and hypostatic pneumonia was conducted individually depending on the amount of surgery and the stage of peritonitis, patient's age and presence of concomitant diseases.

Results

The results of treatment and rehabilitation in the early postoperative period in 58 patients with toxic phase of peritonitis, who were divided into two groups. Groups of patients were similar in age and with similar concomitant diseases. The control group (19 patients) was given a drug without a bowel stimulation exercise therapy, respiratory gymnastics or intestinal electrical stimulation. Compared with the control group, the investigated group of patients manifested faster recovery of oxygen saturation without receiving oxygen through a mask for $7:00 \pm 1.2$ hours. Restoration of peristalsis in the control group occurred 12 hours later. The control group manifested two complications: one bowel eventration and one hypostatic pneumonia. There were no complications in the tested group.

Rehabilitation measures are aimed:

- to limit physical activity for 3-4 months of transfer to light work ;
- adherence to a diet of small 5-6 meals a day, exclusion of a rich diet, fatty, spicy foods, products that promote fermentation or intestinal swelling (grapes, juice, milk, cakes, sweets) for 2-3 months, the future diet gradually extended and increased;
- during the month of dissolving therapy (electrophoresis, diadynamic current), with possible repeated course after six months;
- therapeutic exercises directed at strengthening of the abdominal pressure, raising the tone of smooth muscles of hollow organs to improve their microcirculation;
- regular supervision of the physician within the first year under dispensary group;
- a resort and spa treatment, especially in patients with concomitant pathology in sanatorial gastroenterological profile.

Conclusions

1. Carrying out of rehabilitation in patients with peritonitis in the early postoperative period allows earlier recovery of oxygen saturation and reduction of the bowel wall hypoxia.
2. Rehabilitation of patients in the early postoperative period on application procedures, physiotherapy, massage and exercise leads to a faster motor recovery of the intestine.
3. Using enteroplegia as comprehensive prevention and early stimulation in the complex intestinal rehabilitation is an effective method of restoring motor-evacuation function of intestines that prevents multiple organ failure.
4. Initiation of appropriate medications to stimulate bowel 12 hours after surgery as a method of a concurrent disease prevention.
5. Prediction of intestinal paresis and measures to stimulate must consider the duration and volume of surgical intervention, the degree of violation of water-electrolyte balance and rehabilitation of the patient's condition and severity of potential disability.

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