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Method of Abdominal Cavity Postoperative Infiltrates Treatment in Children with Appendiceal Peritonitis

MG Melnichenko
Email: marina_gmj@i.ua
Odessa National Medical University, Odessa ,
Ukraine
VV Antoniuk
Email: vadim_antonuk@mail.ru
Odessa National Medical University, Odessa ,
Ukraine
LP Tkachenko
Odessa National Medical University, Odessa ,
Ukraine

Abstract

Treatment of postoperative abdominal infiltrates in children operated on appendicular peritonitis with the use of antibiotics and physical factors on the abdominal region according to the utility model includes two stages. The first stage involves regional antibacterial electrophoresis and therapeutic antibacterial microclysters. The second stage includes the impact of diadynamic therapy in infiltration projection and NSAIDs as rectal suppositories.

Problem statement and analysis of the recent research

Radiotherapy, conservative therapy and others are well-known among the methods of abdominal cavity infiltrates treatment [1]. However, these methods are not used in childhood or do not prevent the occurrence of appendiceal peritonitis complications. The choice of the most perfect treatment of the disease is discussed up to date. However, taking into account childhood morphological features and priority of saving approaches in children, more active local therapy is preferred.

Moreover, that local antibiotic therapy is known to contribute to the accumulation of therapeutic doses of antibiotics in inflammatory focus, and regional use of nonsteroidal anti-inflammatory

drugs increases the overall and local anti-inflammatory effect, which as a whole provides integrated anti-inflammatory effect, relieves inflammation, reduces swelling, improves circulation and homeostatic regulation [2]. As for diadynamic therapy, its positive effect is associated with a significant effect on the peripheral circulation and lymph, the nature of relationships between metabolism and function of damaged tissues. Under the influence of diadynamic therapy venous outflow increases, perineural edema decreases, metabolism increases, spasms are relieved and tissue swelling decreases, inflammation diminishes promoting elimination of inflammatory cells and so on [3]. However, aforementioned means in the treatment of postoperative abdominal infiltrates in children with appendiceal peritonitis are not efficient enough to avoid abscess formation and prevent excessive adhesion formation.

The objective of the research was to improve a method of abdominal cavity postoperative infiltrates treatment in children with appendiceal peritonitis by staged use of medical complexes.

Materials and methods

We analyzed the treatment of 62 children at the age of 4 to 18 years with postoperative abdominal cavity infiltrate that were in the department of purulent and septic surgery of Regional Clinical Children's Hospital in Odessa for the past 4 years. Complication occurred the most frequently on the 5th-9th day from the first day of intervention on appendicular peritonitis. According to the age composition formation of the postoperative infiltrate was more frequent in children of the senior group, namely 11 to 17 years (56.6%), in the second age rate complications were similar. We must determine that in the course of delineated inflammation formation as an infiltrate, an important feature was palpable "tumor" in the right side of the abdomen. Changes in stool and dysuric manifestations indicated placement and prevalence of inflammation to a certain extent. Sonography was performed to confirm the presence of inflammation, localization and stage of the process.

Treatment of postoperative infiltrates of the abdominal cavity in children with appendiceal peritonitis was conducted by staged use of therapeutic complexes (the TC number 1, the TC number 2) on the area of abdomen consisting of instrumental physiotherapy (regional antibacterial electrophoresis, diadynamic therapy) and endorectal anti-inflammatory drug therapy (therapeutic antibacterial microclysters, nonsteroidal anti-inflammatory drugs in the form of rectal suppositories) enhancing local antibacterial effect, providing integrated anti-inflammatory effect, regulating local homeostasis and improving results of treatment of such patients.

The first stage involved the use of a developed therapeutic complex number 1 after determining the localization and type of pathological formation: the daily dose of antibiotic solution (kanamycine, gentamicin and others) was introduced through the extraperitoneal-located microirrigator to the infiltrate, then operating by direct-current field with the density of 0.02 to 0.07 mA / cm, 15-18 minutes of exposure, the general course of 5-7 procedures; simultaneously therapeutic microclysters with antibiotics solution (kanamycin, gentamicin and others) were applied in 0.25 % Dimexidum solution with the volume of 30-50 ml per night.

After discontinuation of regional electrophoresis therapeutic complex number 2 was used at the second stage next: in infiltrate projection through the skin, diadynamic therapy was applied using "Tonus-1" device, a frequency of 50 Hz half-sine pulse, 10-15 minutes exposure, the general course of 6-8 procedures; simultaneously endorectal nonsteroidal anti-inflammatory suppositories (voltaren, diclofenac, etc.) were used in age-specific dosage variances twice a day. The developed method [4, 5] of using phased therapeutic complexes was performed to 35 patients with postoperative abdominal cavity infiltrate operated on appendicular peritonitis. They constituted reference group. The control group consisted of 27 children with postoperative

abdominal cavity infiltrate who were of the same age, period of illness, presence of pathology in which the proposed method was not used.

Results and Discussion

Effectiveness of the remedial measures was evaluated by the dynamics of the disease, including laboratory parameters, ultrasound data, the occurrence of complications, terms of patients' stay in the hospital. Comparative analysis showed that the use of staged therapeutic complexes favorably affected the disease, both general and locally: the child's condition significantly improved, the overall temperature returned to normal in 4-5 days sooner, pain syndrome stopped 2-3 days earlier, gastrointestinal upset and intestinal obstruction were not observed, while in the control group, 37.5% of the children complained of intermittent abdominal pain, stool was not permanent in 18.3 % of children. In addition, neutrophilic shift was negated in the reference group, leukocyte index of intoxication and IS normalized a week faster comparing with these indicators in the control group.

The dynamics of local changes in the abdomen was controlled instrumentally. Thus, ultrasound monitoring in the dynamics indicated the size reduction of infiltrate 4-5 days earlier, the disappearance of the intestinal wall, tissue swelling, improvement of peristalsis comparing to patients in the control group, 3 of which were diagnosed with abscess formation of infiltrate.

The proposed method is illustrated by an example.

Patient N., 9 years old (i/ x 787), admitted to the hospital on a 3rd day from the onset with the clinical findings of acute appendicitis and was operated on. The postoperative diagnosis: gangrenous-perforated appendicitis, local peritonitis. Traditional comprehensive treatment was prescribed. In the postoperative period, low-grade fever and pain in postoperative area remained. On the 4th day after the surgery tight elastic infiltration was determined by palpation in the right iliac area. Endorectal temperature was 38.2°C; temperature gradient was 1.5°C.

Ultrasound detected postoperative infiltration of the iliac region with no signs of abscess formation, swelling of all intestinal walls, the presence of liquid in small pelvis. Child underwent a staged use of developed therapeutic complexes: at the first stage (TC 1) in the morning the semi-daily dose of kanamycine was introduced through the extraperitoneal-located microirrigator to the infiltrate, then operating by direct-current field with the density of 0.02 to 0.07 mA / cm, 15minutes of exposure, the general course of 7 procedures; overnight therapeutic microclyster was administered in a half-daily dose of kanamycin in 0.25% solution of Dimexidum with the volume of 30-50 ml. At the second stage (TC 2) after discontinuation of regional electrophoresis in infiltrate projection through the skin, diadynamic therapy was applied using "Tonus-1" device, a frequency of 50 Hz half-sine pulse, 10-15 minutes exposure, the general course of 6-8 procedures; simultaneously endorectal nonsteroidal anti-inflammatory suppositories (voltaren in a dose of 25 mg twice a day) were used.

The patient's condition improved, the temperature normalized in 2 days, pain syndrome discontinued on the 3rd day, no effects gastrointestinal upset and intestinal obstruction was observed. In addition, neutrophilic shift negated in a week, IS and leukocyte index of intoxication normalized. Temperature gradient decreased to 0 on the 8th day of treatment. Ultrasound indicated the size reduction of infiltration in the dynamics on the 5th day, the amount of fluid and edema of tissues. After treatment on the 12th day ultrasound study confirmed the complete disappearance of inflammation in the stomach, absence of adhesions in the area of affection. The child was discharged in the satisfactory condition.

Conclusions

Thus, the proposed method can improve outcomes of postoperative infiltrates of abdominal cavity in children with appendiceal peritonitis, avoid abscess formation, prevent excessive adhesion formation in the area of affectation, and reduce terms of hospital stay.

References

- 1 VV Zhebrovskiy, AD Timoshin, SV Gotie, et al. Complications in surgery of the abdomen: guidance for doctors. Moscow: OOO "Medical inform agency"; 2006. 448p.
- 2 MG Melnychenko, NG Nikolaieva, KP Aleksyuk. Differentiated use of physical factors in treatment of appendiceal infiltrate in children. Guidelines. Odessa; 2006. 18p.
- 3 VS Ulashchyk. Phisiotherapy. Universal Medical Encyclopedia. Minsk: Knizhnyi Dom; 2008. 640p.
- 4 NG Nikolaieva, KP Aleksyuk, MG Melnichenko. Treatment of appendiceal infiltrate in children. Odeskyi medychnyi zhurnal ODMU. 2000;5:40-41.
- 5 MG Melnichenko, VV Antoniuk, inventors; MG Melnichenko, VV Antoniuk, assignees. The method of postoperative abdominal cavity infiltration treatment in children with appendiceal peritonitis. Ukraine Patent 103 392. 2015 Dec 10.

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