



## COMPARATIVE APPROACHES IN THE TREATMENT AND PREVENTION OF PERITONEAL ADHESIONS IN CHILDREN

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### ABSTRACT

*The authors studied one of the pathogenetic factors of adhesive disease in 53 sick children, susceptibility to adhesive disease, and measures to prevent early adhesion formation. The susceptibility to conjunctivitis is observed in 50% of patients and is determined by an increase in the concentration of fibrinogen in the blood and a decrease in fibrinolysis. Accordingly, mitigation measures were taken and the possibility of early prevention of congestion was studied.*

**Relevance:** One of the unresolved problems of modern clinical surgery is the treatment and prevention of abdominal adhesions. Over the last decade, the number of patients with adhesive bowel obstruction has increased, reaching 48–60% compared with other intestinal obstructions [2,3,5]. It is known that each person differs in terms of anatomical structure and physiology, psychology and physiology of the nervous system. This idea has been confirmed in scientific practice.

Patients who underwent abdominal surgery between 1992 and 2012 were analyzed. The findings showed that 780 (12.0%) of the 6,506 children who underwent surgery for various diagnoses presented with clinical signs of adhesions. Of these, 1,280 (19.7%) children presented with intermittent abdominal pain. These data suggest that adhesion processes are not the same in all patients. Therefore, 86 parents of children were examined, and it

was found that 53 of them (61.1%) underwent abdominal surgery. Of these (42 with appendectomy, 5 with 12-finger ulcer perforation, 3 with gastric resection, 3 with abdominal organ injury). 17 of them (32.0%) have conjunctivitis, and 5 parents,

**The purpose of our research** -to study the individual susceptibility to adhesions in patients undergoing abdominal surgery.

### Materials and methods

Disruption of the tissue fibrinolysis system plays an important role in the pathogenesis of the formation of adhesions in the abdominal cavity after abdominal surgery. (1,2,3).

We set ourselves the following goals - to study the state of fibrinolysis, the amount of fibrinogen before surgery, during surgery, within 5 days after surgery.



Of the 53 patients, 34 were boys and 19 were girls, ranging in age from 7 to 18 years.

The first group consisted of 29 children (54.7%) who were informed that surgery was planned. In the second group, 24 children (45.2%) were reported to be scheduled for routine examinations without any information on surgical procedures. Venous blood was drawn from both groups of patients 2 hours later to check fibrinogen levels and blood fibrinolytic activity.

### **Inspection results and conclusions**

In the first group of 29 (54.7%) sick children, an increase in fibrinogen levels was observed in 11 (37%), ranging from 394 to 488 mg%, with an average of  $412 \pm 18.4$  mg%, of which 3 (10.3%) had fibrinogen. Showed an increase from 468mg% to 488 mg%. In the remaining (18) patients, the fibrinogen content was 364–400 mg%. However, these values also showed higher than normal (average  $338 \pm 26$  mg% in the norm).

In the second group of patients, 24 (45.2%) had an increase in fibrinogen levels of 394 mg% in two of them. In the rest, the mayor set the norms. These results show that if the patient knows that a surgical procedure is planned, the body will prepare for it, in which protective reactions will gradually appear.

Oxner (1930) argued in his time that if abdominal adhesions had not formed after abdominal surgery, abdominal surgery would not have developed either.

We also repeated analyzes during endovideolaparoscopic surgical procedures. At the same time, the increase in fibrinogen content in all patients varied

from 480mg% to 1240mg% and averaged  $844 \pm 28$ mg%, and blood fibrinolytic activity decreased rapidly, from 96 to 158mg% (normal  $310 \pm 8.7$ mg%) on average.  $136 \pm 7.6$ mg%.

These indicators suggest that a rapid decrease in blood fibrinolytic activity allows fibrinogen to be converted to fibrin, allowing fibrin to be converted to collagen, indicating the rapid onset of the adhesion process. In addition, it should be noted that in some patients an increase in fibrinogen levels was observed 1.5 times, and in some up to 3 times. Blood fibrinolytic activity also coincided with the amount of fibrinogen. These results showed that in some patients, fibrinolysis inhibitors were normal, fibrinogen levels increased by 1.5 to 2 times, and blood fibrinolytic activity increased accordingly. Only 17 patients showed an increase in fibrinogen levels as a result of lack of inhibitors, a sharp decrease in blood fibrinolytic activity. These data lead to the conclusion that an increase in the amount of fibrinogen in some patients, a decrease in fibrinolysis, indicative of a tendency to adhesion processes. Timely, if possible, correction of blood fibrinolytic activity in such patients during surgical procedures prevents the formation of premature adhesions. For this purpose, at the end of the surgical procedure, a fibrinolytic compound (heparin 10000 ED + fibrinolysin 20000 ED + hydrocortisone 125 mg + gentamicin 80 mg + novocaine 0.25% -200) was administered every 6-8 hours through a microirrigator left in the abdominal cavity, 6 hours later, venous blood was examined. It was found that a decrease in fibrinogen levels was observed, compared with previous analyzes ( $614 \pm 14$  mg% and  $844 \pm 28$  mg% in previous



analyzes), while an increase in blood fibrinolytic activity ( $284 \pm 8.4$  mg%). But these indicators, it was found that the amount of fibrinogen was somewhat higher with the improvement of fibrinolysis compared to the previous indicators. High fibrinogen levels were associated with decreased fibrinolysis. In conclusion from the above, the fibrinolytic mixture was injected into the abdominal cavity 2 times a day. At the end of the second day, at the beginning of the third day, a gradual decrease in fibrinogen levels was observed, and these values were different in all patients.

In 38 of the 53 patients (71.7%), fibrinogen levels returned to normal, averaging  $402 \pm 12$  mg%, while in the remaining 15 (28.3%), fibrinogen levels remained higher than normal and averaged  $486 \pm 16$  mg%. formed. Thus, the increase in blood fibrinolytic activity was  $288 \pm 18$  mg% in the first group of patients, and  $212 \pm 14$  mg% in the second group. Complex treatment with fibrinolytic compound was continued. After surgery, intestinal peristalsis improved from day 2 in the first group of patients and from day 3 in the second group of patients, and intestinal passage became uniform.

Recurrent analyzes showed a return to normal fibrinogen levels of  $386 \pm 16$  mg% on average, while blood fibrinolytic activity also increased (average  $302 \pm 6.0$  mg%).

These figures did not differ from the norm. Thus, based on the results obtained, it can be concluded that blood fibrinolytic activity, the amount of fibrinogen, is one of the important links in the pathogenesis of adhesion processes. Depending on the amount and indicator of fibrinogen and blood fibrinolytic activity during surgery, it is possible to determine the degree of susceptibility of patients to the formation of adhesions. For early prevention of conjunctival disease, it is advisable to send a fibrinolytic mixture, fibrinogen content and blood fibrinolytic activity to the abdomen under control in the complex treatment from the time of surgical procedures.

Then the balance of fibrinolysis is observed in 5-6 days. This is important in the early prevention of the adhesion process, leading to a rapid recovery of intestinal motility and a sharp decrease in the adhesion process.

## CONCLUSION

1. Predicting the degree of adhesion process in each patient child is important in the prevention of adhesion disease.
2. The fibrinolytic compound acts at the time of adhesion disease and prevents adhesions from forming. This is of paramount importance in the early prevention of adhesions, leading to a sharp reduction in adhesions.

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