
ARE THE MODELS FOR EARLY POSTOPERATIVE RECOVERY IN LAPAROSCOPIC TREATMENT OF GASTROESOPHAGEAL REFLUX DISEASE APPLICABLE - OUR EXPERIENCE

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Abstract: Introduction: At the dawn of the new millennium, technological advances in both diagnosis and therapy make the treatment of hiatal hernia and gastroesophageal reflux not only anatomically but also physiologically sound surgical practice. No less important is the quality of life and early postoperative recovery of patients.

Material and methods: The 112-month period September 2010 - December 2019 was analyzed, during which 330 patients with diaphragmatic hernias were operated, of which 322 laparoscopic and 8 conventional. Of the hernias in the laparoscopic group, 306 were primary and 16 recurrent. 12 of the recurrences were after laparoscopic antireflux surgery and 4 after conventional surgery.

Of the 330 patients, 242 were women and 88 were men. The mean age was 57.4 years for men and 51.6 years for women.

Results: The verticalization of the patients in the early postoperative period in the laparoscopic group is between the second and the third postoperative hour, and on the next postoperative day all patients are independently moved and able to self-care. The nasogastric tubes (calibration) are removed at the end of the operation, before removal from anesthesia. A urethral catheter was placed in almost all patients, but was removed in the second postoperative hour during the first movement of the patients. Patients in the laparoscopic group were discharged on average on 3.9 postoperative days (postoperative stay 1 - 16.8 days). The cases with a longer postoperative hospital stay are those with postoperative complications. The standard discharge for more than 90% of laparoscopically operated patients is on the second postoperative day.

Postoperative complications in the early postoperative period were observed in 22 patients (6.66%).

We have no cases of perioperative mortality.

Patients were followed in the postoperative period from 30 days to 6 years. We observe 16 cases of recurrence (4.84%).

Discussion: In the clinic we apply a protocol for early postoperative recovery, using the criteria of ERAS (Enhanced Recovery After Surgery), which allows maximum reduction of hospital stay, reduction of postoperative complications, better quality of life for patients and minimization of costs (in optimal size without compromising the quality of the activity).

Conclusion: The application of early postoperative recovery systems reduces the frequency and severity of postoperative complications, shortens the postoperative hospital period, leads to a better quality of life for patients and is medically, socially and economically feasible.

Keywords: nurse care, enhanced postoperative recovery, laparoscopic surgery

1. INTRODUCTION

At the dawn of the new millennium, technological advances in both diagnosis and therapy have made the treatment of hiatal hernia and gastroesophageal reflux not only anatomically but also physiologically sound surgical practice. No less important is the quality of life and early postoperative recovery of patients.

Material and methods: The 112-month period from September 2010 to December 2019 was analyzed, during which 330 patients with diaphragmatic hernias were operated on, of which 322 laparoscopically and 8 conventionally. Of the hernias in the laparoscopic group, 306 were primary and 16 recurrent. 12 of the recurrences were after laparoscopic antireflux surgery and 4 after conventional surgery.

Of the 330 patients, 242 were women and 88 were men. The mean age was 57.4 years for men and 51.6 years for women.

Distribution of hernias by type:

- H1 - 56 women, 24 men - a total of 80 patients;
- H2 - 64 women, 16 men - total - 80 patients;
- H3 - 66 women, 16 men - total - 82 patients;
- H4 - 56 women, 32 men - total - 88 patients.

The distribution by age of complaints shows such between 1 and 3 years in 30 women (12.39%) and in 8 of men (9.09%). In all other patients, the duration of clinical complaints is more than 3 years. In all of them, drug therapy was administered over time, which was ineffective or with minimal or temporary effect.

We used perioperative antibiotic prophylaxis in 76 patients (23.03%), although it was a pure elective operation. The reasons for the application of this prophylaxis are:

- Presence of diabetes (especially type 1);
- Anemia - serum hemoglobin below 100 g / l;
- Pulmonary pathology - COPD, emphysema,
- Expected duration > 3 hours;
- Recurrent hernia;
- Simultaneous surgery - antireflux surgery and cholecystectomy.

In all cases, fundoplication was performed by the following methods:

- Hill - 208 cases;
- Nissen - 62 cases;
- Toupet - 60 cases.

2. RESULTS

The verticalization of the patients in the early postoperative period in the laparoscopic group is between the second and the third postoperative hour, and on the next postoperative day all patients are independently moved and able to self-care. The nasogastric tubes (calibration) are removed at the end of the operation, before removal from anesthesia. A urethral catheter was placed in almost all patients, but was removed in the second postoperative hour during the first movement of the patients. This is in accordance with our protocol for early postoperative recovery of patients, which we will present below.

Patients in the laparoscopic group were discharged on average on 3.9 postoperative days (postoperative stay 1 - 16.8 days). The cases with a longer postoperative hospital stay are those with postoperative complications. The standard discharge for more than 90% of laparoscopically operated patients is on the second postoperative day.

Postoperative complications in the early postoperative period were observed in 22 patients (6.66%). We show the distribution of complications (more than one complication has been observed in some patients):

- Postoperative pneumonia - 6 cases (1.82%);
- Bleeding from GIT (hematemesis and melena) - 12 cases (3.64%);
- Subcutaneous emphysema - 8 cases (2.42%);
- Urinary tract infection - 2 cases - (0.6%);
- Infection of the port - 2 cases (0.6%);
- Thrombophlebitis - 1 case (0.3%).

Postoperative pneumonia developed between the 2nd and 4th postoperative day. We believe that predisposing factors are the duration of the surgery, the age of the patients and the available concomitant pleuro-pulmonary chronic diseases (pulmonary emphysema, pulmofibrosis, long-term smokers, etc.). Four of the six cases of postoperative pneumonia required treatment in the intensive care unit, and in no case did artificial pulmonary ventilation be required. The other two cases were reported as mild and the treatment was performed in the surgical clinic.

Bleeding from the GIT in the postoperative period occurred immediately after surgery until the second postoperative day as hematemesis and melena. In all cases, emergency fibrogastroscopy was performed - in six erosive gastroduodenitis was found, and in two - acute duodenal ulcer. In four cases, no source of bleeding was detected. All were treated with proton pump inhibitors and fresh frozen plasma transfusions.

Of the eight cases of subcutaneous emphysema, only one required evacuation by fine-needle aspiration, and the remaining 7 were resorbed spontaneously by the third postoperative day. In all cases, control radiography was performed to rule out pneumothorax.

Cases of portal infection, urinary tract infection and thrombophlebitis were treated on an outpatient basis and no rehospitalization was required.

We have no cases of perioperative mortality.

Patients were followed in the postoperative period from 30 days to 6 years. We observe 16 cases of recurrence (4.84%). We attribute this relatively low frequency to the following facts:

Not all cases of recurrence seek medical help in the same surgical unit. Eg of the six recurrent hernias previously operated on in another ward, only two patients had sought examination by the operating surgeon;

At the follow-up period or as James M Tatum et al. from the University of California, Los Angeles, USA, in the first 20 months of follow-up recurrences are below 10%, and at 120 months follow-up in some centers reach a level of more than 60%.

3. DISCUSSION

In the clinic we apply a protocol for early postoperative recovery, using the criteria of ERAS (Enhanced Recovery After Surgery), which allows maximum reduction of hospital stay, reduction of postoperative complications, better quality of life for patients and minimization of costs (in optimal size without compromising the quality of the activity). In general, the essence of the model for early postoperative recovery in antireflux surgery is:

Preoperative period:

- Information about the nature of the disease;
- Information about the ways of treatment - operative, conservative, alternative;
- Information about the experience and opportunities of medical institutions and specialists (in Bulgaria and possibly abroad);
- Recommendations for diet - predominant intake of carbohydrate food 20 days before surgery, stopping eating 6 hours before surgery, stopping fluid intake 2 hours before surgery;
- Stopping alcohol intake - 20 days before surgery;
- Stopping (restriction of smoking) - 20 days before surgery;
- Maximum short preoperative hospital stay - if possible outpatient preoperative preparation and examinations and hospitalization the day before surgery.

Intraoperative period:

- Providing normothermia;
- Perioperative intestinal preparation;
- Avoiding the use of nasogastric tubes and catheters (insert a calibration probe type "bougie" Ch 36 after induction of anesthesia and remove it immediately after calibration of the crurography and fundoplication);
- Perioperative antibiotic prophylaxis (according to the indications in patients at risk for infectious complications).

Postoperative period:

- Fight and prevention of pain;
- Prevention and treatment of postoperative nausea and vomiting;
- Antithrombotic prophylaxis;
- Prevention of wound infection;
- Early feeding;
- Early movement;
- Early removal of probes, catheters, venous sources;
- Early hospitalization;
- Information about the post-hospital period - in which cases contact with a doctor is necessary and when re-hospitalization is necessary.

Behavior after discharge from hospital

After laparoscopic surgery, most patients do not experience severe pain, but may experience abdominal and chest discomfort and difficulty swallowing. This condition in our patients usually passes within 48 hours.

After laparoscopic hiatal hernioplasty in some western centers, it is practiced that the patient can return home on the same day if he has recovered from the anesthesia. Otherwise, he can spend the night in the hospital and must be able to walk on the day of the operation. However, this involves very strictly regulated control for postoperative follow-up by a GP, community nurse or other medical staff. The patient's actions are also postulated when and in what cases, how to act: when and to whom to call, when to take an antibiotic, what and for how long, when an antipyretic is needed, in what condition to go to a surgical unit and when is indicated for rehospitalization. And all this should be bound by a legal framework (prepared written instructions).

In our clinic we apply a protocol for behavior after discharge, borrowed from the British health system UK National Health Service (NHS):

- Patients are discharged on the 48th hour after the operation (this is largely due to the requirement of the Health Insurance Fund for a minimum hospital stay);
- In the days after surgery, patients are advised:
 - wash the incision area daily with ordinary soap and water;
 - take a shower instead of a bathtub and avoid the use of swimming pools and hot tubs;
 - walk whenever possible to prevent thromboembolic complications;
 - avoid drinking through a straw ';

- to practice specific breathing exercises and to avoid coughing in order to strengthen the diaphragm.

In the weeks following the operation, the UK National Health Service recommended the following:

- avoid lifting weights for 2 to 3 weeks;

- avoid driving for 7 to 10 days;

- return to work within 2 to 3 weeks or whenever a person feels well enough;

- taking painkillers for a few days after surgery to minimize discomfort.

Patients need to follow a specific diet after surgery. It is recommended to drink clear liquids immediately after the operation, and the next day to switch to soft or liquefied foods, including mashed potatoes, cocktails and soups. Foods that cause flatulence and bloating should also be avoided.

During recovery, it is recommended that the daily ration be divided into several smaller meals throughout the day instead of three large ones.

Most patients can return to their normal preoperative hygiene regimen 3 to 6 weeks after surgery. However, even after the patient has made a full recovery, we recommend that they continue to limit or avoid foods that contribute to symptoms of gas, bloating, and acid reflux, such as:

- sour foods, including citrus fruits and tomato products;

- alcohol;

- beans and lentils;

- carbonated drinks;

- corn;

- cruciferous vegetables, including broccoli, cabbage and cauliflower.

4. CONCLUSION

The use of early postoperative recovery systems reduces the frequency and severity of postoperative complications, shortens the postoperative hospital period, leads to a better quality of life for patients and is medically, socially and economically feasible.

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