METHODS OF DIAGNOSIS AND TREATMENT

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EXPERIENCE OF LAPAROSCOPIC APPENDECTOMY IN THE MULTIDISCIPLINARY SURGICAL CENTER OF THE REPUBLIC SAKHA (YAKUTIA)

ABSTRACT

The **aim** of the study was to evaluate the results of surgical treatment of patients with uncomplicated forms of acute appendicitis using the laparoscopic method in conditions of the multidisciplinary surgical Center of the Republic Sakha (Yakutia).

Material and methods. The work is based on the analysis of the results of complex treatment of 582 patients with uncomplicated forms of acute appendicitis, in 287 (49.3%) of whom, laparoscopic appendectomy was performed.

Results. The first experience of laparoscopic appendectomy demonstrated the promise of the method, as well as its high efficiency and safety.

Conclusion. The introduction of the method allowed reducing the number of postoperative complications by 3,0% and shortening the length of stay in the surgical hospital by 42,8%.

Keywords: acute appendicitis, laparoscopic appendectomy.

INTRODUCTION

Currently, laparoscopic appendectomy has taken a strong place in emergency surgery of the abdominal cavity [1, 3, 8]. However, the number of studies aimed at studying the results of its use everywhere, especially with regard to complicated forms, remains insufficient, which leads to an active discussion of this topic on the sites of various forums, surgical congresses and congresses [1, 9].

According to a wide range of researchers, the incidence of acute appendicitis varies within 10-15% [2, 5], lethality does not exceed 0.1-0.5% [1, 2, 4, 6], and the number of postoperative complications remains stable high and reaches 30-40% [2, 6] with complicated forms. Thus, the above facts dictate the need for more in-depth and comprehensive study of various aspects of surgical treatment of patients with acute appendicitis.

The study of the possibility of reducing the number of intra- and postoperative complications, as well as the reduction in the time of stay of a patient with acute appendicitis in the multidisciplinary surgical center of the Republic of Sakha (Yakutia), through the introduction and wide application of laparoscopic appendectomy in everyday practice, was **the objective** of our study.

Materials and methods of the research. The presented work is based on the analysis of the results of the complex treatment of 582 patients with acute appendicitis at the age of 18 to 73 years, men - 265 (45,5%), women - 317 (54,5%), who were treated in the emergency surgical department of the Republican Hospital № 2 - Center for Emergency Medical Care of the Republic of Sakha (Yakutia) in the period from 2015 to 2017. The diagnosis of acute appendicitis and its complications is verified on the basis of a modern multi-level complex examination.

Patients were divided into study groups. The main group included 287 (49.3%) patients who underwent laparoscopic appendectomy (LA), the control group included 295 (50,7%) patients who underwent traditional appendectomy (TA). Patients who have been diagnosed with an appendicle infiltrate at the stage of a general examination, an appendicle abscess, a common or diffuse purulent peritonitis are not included in this study.

All operations were performed using the endoscopic Karl Storz Endovision® DCI® system with an autorotation system (ARS) - a digital single camera, PAL color systems, NTSC with an integrated digital image processing module. A set of DCI® HOPKINS®II laparoscopes (large-format optics - 10 mm), trocars, forceps, scissors, dissectors, Karl Storz Click'Line® extractors under combined endotracheal anesthesia.

Points of administration and diameter of trocar: paraumbilical - 10 mm, left iliac region - 5 mm and left mesogastric region - 10 mm. After the installation of trocars, a revision of the abdominal cavity was carried out with the diagnosis and evaluation of the degree of inflammatory changes in the peritoneum. Appendectomy was performed antegrade with treatment of mesentery with the electrosurgical apparatus "LigaSure™» from Valleylab (Smart technology) and clipping of the base of the appendage with tantalum clips without peritonization.

The statistical processing of the material was carried out using the StatPlus 2007 statistical program for the Microsoft Office 2007 operating system, as well as the IBM.SPSS.Statistiks.v22 software package. When estimating the whole population, the mean values (μ) and the standard deviation (σ) were calculated, the reliability of differences (p) was determined by the Newman-Keils criterion.

Results and discussion. In the course of LA, forced transition to laparotomy (conversion) was required in 7 (2.4%) patients. In two clinical cases, the reason for the conversion was the perforation of the appendix, with the development of diffuse purulent peritonitis. In the other three - in the formation of an appendicle infiltrate and typhlitis. And finally, in the last two cases, the cause of the conversion was the appendicle abscess that was not diagnosed at the stage of the general examination. In all cases of conversion, we used laparotomy access of Volkovich-Dyakonov. Immersion of the stump was carried out in the "pouch" and Z-shaped stitches, followed by drainage of the abdominal cavity with silicone drains and / or a Penrose-Mikulich tampon, the amount of which was individual and depended on the severity of the inflammation, the nature of the exudate in the abdominal cavity, and pathomorphological changes vermiform appendix.

From the moment of admission of the patient into the surgical hospital (taking into account the necessary comprehensive examination) and before the surgical intervention, no more than 120 min passed. The time of operative intervention in the performance of the aircraft ranged from 35 to 75 min and averaged 45.2 ± 20.1 min. TA took from 25 to 120 min. An average of 55.8 ± 22.8 mi. The difference in time was statistically significant ($p < 0.05$).

Another important parameter, this is confirmed by other researchers [7, 10], is the average time of activation of patients after performing an operative intervention. In our case, the activation time after the LA was 1.1 ± 0.5 days. After the TA - 2.5 ± 0.7 days ($p < 0.01$). The increase in

the time of bed rest after TA was largely due to postoperative pain syndrome.

Along with the time of activation of the patient, one of the important parameters is the time of the appearance of active intestinal peristalsis [2, 7]. Possibilities to take liquid and solid foods in order to maintain energy balance and maintain the plastic function of the body. In our case, after the operation of LA, this time was 1.3 ± 0.5 days, and after TA – 1.7 ± 0.8 days.

The total number of complications in the main group was 4 cases (1.4%). In 2 (50%) cases there was an intraoperative bleeding from the mesentery of the appendix, in 1 (25%) in the early postoperative period patient was found to have a limited fluid accumulation along the right lateral canal. In 3 described cases no re-operative treatment was required, conservative and operative measures of a corrective nature produced a positive result. In 1 (25%) of the treated patients after LA, in the early postoperative period, continued peritonitis was observed, on which, on the 3rd day, a mid-laparotomy with sanation and drainage of the abdominal cavity was performed. The patient recovered and was discharged on the 15th day of the first operation.

In the control group, the total number of complications was 11 (3.7%) cases. In 4 (36.3%) patients after TA, an infiltration of the area of the postoperative wound was formed. Conservative treatment of these patients was supplemented by physiotherapeutic procedures, which allowed preventing the development of infectious complications, and ended safely. The postoperative period was complicated by hemorrhage from the muscles of the laparotomy wound seam line in 2 (18.2%) patients, suppuration of the postoperative wound was detected in 5 (45.5%) patients. There were no lethal outcomes in both groups.

The average length of stay in the hospital after the LA was 4.0 ± 1.0 bed-days, after TA – 7.0 ± 2.0 bed-days. Patients after the LA were in the surgical hospital on average 3.0 ± 0.1 bed-days (42,8%) less than the patients with TA. The difference in the length of stay is statistically significant ($p < 0.01$).

Thus, we can draw the following **conclusions:** LA is a less traumatic type of surgical intervention. Patients of the LA group were significantly more active than in the TA group. Almost 2.5 more quickly left the surgical hospital, and accordingly significantly reduced the period of incapacity for work and the consumption of medicines. With this method of operative intervention, a significantly lower number of postoperative complications was observed – 0.7% after LA, compared with 3.7% after TA. All this allowed us to continue the wide introduction into surgical practice in the multidisciplinary surgical center of the Republic of Sakha (Yakutia) LA and set the goal of further training this technique for surgeons in the emergency surgical departments of the Center.

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