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## **IMPLEMENTATION OF THE LHP METHOD - LASER REMOVAL OF HEMORRHOIDAL NODES**

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**Summary.** The study is devoted to the investigation of the advantages of surgical intervention using laser vaporization compared to the traditional Milligan-Morgan method in treatment of patients with chronic hemorrhoids.

**Key words:** laser vaporization, laser treatment, hemorrhoids.

## **ВНЕДРЕНИЕ МЕТОДА LHP – ЛАЗЕРНОГО УДАЛЕНИЕ ГЕМОРОИДАЛЬНЫХ УЗЛОВ**

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**Резюме.** Исследование посвящено изучению преимуществ оперативного вмешательства с использованием лазерной вапоризации по сравнению с традиционной методикой по Миллигану-Моргану у больных с хроническим геморроем.

**Ключевые слова:** лазерная вапоризация, лечение лазером, геморрой.

**Introduction.** Chronic hemorrhoids are most common in adult patients. Among the adult population, hemorrhoids are common as follows: 25-35 years old - 14.6%, 36-45 years old - 17.4%, 46-55 years old - 36.3%, 56-65 years old - 11.3%, 66-85 years old - 3.8% [Lapina E.A., 2015. Most patients are of working age up to 50 years [Katorkin S.E. et al., 2021]. In the structure of proctological diseases, hemorrhoidal disease accounts for 41 to 53% of cases. According to the literature, hemorrhoidal disease affects 5 to 25% of the world's population [Shelygin Yu.A. et al., 2019].

The gold standard of surgical treatment for patients with chronic external and internal hemorrhoids of stages 3–4 is hemorrhoidectomy [Mirzabekov S. G., 2018]. The main disadvantage of surgery in the early

postoperative period is the appearance of severe pain in patients at rest and during defecation [Ofshteyn A. et al., 2019].

In the long term, several patients develop stenosis of the anal canal, which leads to an increase in the rehabilitation time and disability [Bodea R., et al., 2015] [Tiryaki C. et al., 2017].

Our professional interest in studying this pathology is due to the relevance of the problem of acute and chronic hemorrhoids. Methods of treating hemorrhoidal disease using laser vaporization technologies are becoming increasingly popular from year to year. This is due to the identification of new effects of laser radiation that occur when changing the design of devices or their operating parameters [Sturiale A., 2019].

Modern medicine sets itself the task of developing innovative approaches and implementing minimally invasive methods of treating acute and chronic forms of hemorrhoids both in inpatient and outpatient settings. This area of work allows for effective clinical diagnosis, comprehensive medical care, and significant reduction in patient treatment costs.

**The aim of the study:** to study the features of the laser hemorrhoidectomy technique, the specifics of the postoperative period, and the effectiveness of this surgical technique.

**Materials and methods of the study.** The study analyzed data on the surgical treatment of 98 patients diagnosed with chronic hemorrhoids who were treated in the period from 2020 to 2023 in the surgical department of the University Hospital of the Non-Commercial Joint-Stock Company "Semey Medical University" (UH NCJSC "SMU"). Of these, 37 (37.8%) were women, 58 (62.2%) were men. The age of the patients ranged from 21 to 65 years; the average age was  $56.1 \pm 1.7$  years. The duration of the disease ranged from 11 months to 25 years. According to the severity of the disease, the patients were distributed as follows: Stage I - 12 (12.3%), Stage II - 32 (32.6%), Stage III - 48 (49%), Stage IV - 6 (6%) patients. All patients were divided into two study groups: the main (n=47) and the control (n=51) groups depending on the surgical intervention methods used. The effectiveness of the treatment was determined by conducting a comparative assessment between these two study groups (the distribution of patients into groups was random). All patients underwent sacral anesthesia with 2% Lidocaine, as well as rectal drainage.

The main group included 47 (48%) patients with chronic hemorrhoids, operated on using an improved technique - laser vaporization (LV). In the group, there were 17 (36.2%) women, 30 (63.8%) men. The age of patients ranged from 23 to 60 years; the average age was  $56.1 \pm 1.2$  years. The duration of the disease ranged from one year to 25 years. According to the severity of the disease, the patients were distributed as follows: Stage I - 5 (41.7%), Stage II - 15 (46.9%), Stage III - 23 (47.9%), Stage IV - 4 - (66.7%) patients.

The control group included 51 (52%) patients with chronic hemorrhoids who were operated on using the traditional method of Milligan-Morgan (MM) of the Research Institute of Proctology II. In the group, there were 20 (39.2%) women and 31 (60.8%) men. The age of the patients ranged from 21 to 65 years; the average age was  $56.2 \pm 2.2$  years. The duration of the disease ranged from 11 months to 24 years. According

to the severity of the disease, the patients were distributed as follows: stage I - 7 (58.3%), stage II - 17 (53.1%), stage III - 25 (52.1%), stage IV - 2 - (33.3%) patients.

**Results and discussion.** In the main group, the duration of surgery for chronic hemorrhoids ranged from 14 to 20 minutes (on average,  $16.3 \pm 1.2$  minutes). After laser vaporization of hypertrophied hemorrhoidal tissue, all patients showed a 4-5-fold decrease in the size of hemorrhoids). The average hospitalization time for such operations ranged from 2 to 5 days ( $3.1 \pm 0.4$ ). The postoperative period in most patients was typical. In 4 (8.5%) cases, tissue edema appeared in the laser exposure zone on the 3rd day after surgery. A dependence of tissue edema on the volume of submucosal anesthetic solution was noted.

In the control group, the duration of surgery for chronic hemorrhoids ranged from 45 to 73 minutes (on average,  $53.3 \pm 1.2$  minutes). The average hospitalization time for such operations ranged from 7 to 12 days ( $8.1 \pm 1.4$ ). The following complications were noted in the postoperative period in 8 (15.7%) cases: bleeding from mucosal sutures - 4 (50%), prolonged pain syndrome - 3 (37.5%), cicatricial stenosis - 1 (12.5%).

**Conclusion.** The introduction and application of this method of treating hemorrhoidal disease in our clinic has allowed us to reduce the length of hospital stay for patients several times - from 5-7 days to 1-3 days.

Unfortunately, this technique is applicable only to patients with the second and third stages of the disease. In this regard, there is a need for early diagnosis and timely intervention.

Our experience in performing submucosal laser vaporization in the treatment of patients with chronic hemorrhoids has shown that this technique allows us to speed up the rehabilitation period for patients by reducing the level of pain and minimizing the number of postoperative complications. Reduces the frequency of complications by 2 times ( $p = 0.015$ ); reduces the level of inflammatory, pain syndrome and reduces the duration of hospitalization. However, which of these methods is preferable in each specific case should be decided jointly by both the surgeon and the patient.