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Features of Hemostatic Therapy for Traumatic Coagulopathy in Patients with Combined Hemorrhoids

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Abstract: ***In this article, the features of hemostatic therapy for traumatic coagulopathy in patients with combined hemorrhoids and their treatment methods are highlighted. Laser treatment of combined hemorrhoids is the subject of debate, since removal of the external component of the disease can lead to increased pain and the impossibility of eliminating it on an outpatient basis.***
Keywords: hemostatic therapy, traumatic coagulopathy, hemorrhoids, treatment methods, transmucosal laser.

I. INTRODUCTION

Transmucosal laser thermal ablation (TLT) has become widespread in the treatment of chronic hemorrhoids. It is more often used in isolation for internal hemorrhoids and less often in combined forms with excision of external nodes and perianal fimbria or their laser destruction [1–5]. This is due to the fact that during laser treatment of combined hemorrhoids after destruction of internal nodes, the main reasons that brought the patient to the operating room are eliminated. At the same time, external hemorrhoids remain, which may subsequently pose certain problems for the patient associated with the possibility of their thrombosis, and the perianal fimbria bring not only aesthetic inconvenience, they can become injured, become inflamed, and the patient is left with a feeling of incomplete treatment [2,5].

II. RELEVANCE

External hemorrhoids and perianal skin folds are common in patients with chronic hemorrhoids. Thus, according to Lomonosov A.L., among patients with chronic internal hemorrhoids of 1–2 degrees, external hemorrhoids were of medium size in 46.8% and large in 15.9%, perianal fimbria, respectively, in 57.3 % and 15.9% of patients [6]. Hemorrhoidal fimbriae can also form after laser destruction of external hemorrhoids; the cause of their appearance is the emerging excess perianal skin remaining after laser destruction of external hemorrhoids [2,5]. In 9–12% of those who have undergone such interventions, excision of the perianal fimbriae is subsequently performed [5]. Cherepenin M.Yu. points out the same drawback of laser destruction: after laser coagulation, 18 (14.5%) patients had residual anal fimbria that did not cause any discomfort; 5 (4.0%) patients required excision hypertrophied fimbriae of the perianal region [2].

The need to eliminate external filaments and perianal fimbria during laser treatment of combined hemorrhoids of 2–3 degrees is a subject of debate, since they are located below the dentate line, in the area of pain sensitivity, and this can cause intense pain and cast doubt on the possibility of performing the operation in on an outpatient basis under local anesthesia [3,4].

To study the results of treatment of patients with chronic combined hemorrhoids of stage II–III using the method of vaporization of internal nodes with simultaneous elimination of external nodes and hemorrhoidal fimbriae.

III. METHODS

In 2018–2021 In an outpatient clinic, one surgeon performed 378 laser vaporizations of stage 2–3 hemorrhoids. From the entire cohort of patients, a study group was selected - 136 patients with combined hemorrhoids, who underwent vaporization of internal nodes and removal of external nodes or perianal fimbria. 109 (80.1%) had stage 2 hemorrhoids and 27 (19.9%) had stage 3 hemorrhoids.

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The median age of patients in this group was 44.0 years, 88 (64.7%) were men, 48 (35.3%) were women. The control group consisted of 90 patients treated only with laser vaporization of internal nodes. The second stage of the disease was in 86 (95.6%), stage 3 in 4 (4.4%) patients. The age of the patients ranged from 20 to 84 years Me = 36.0 (31.75; 50.0); (40.56 ± 12.98), there were 51 (56.7%) men, 39 (43.3%) women.

Comparison of patients in the studied groups showed that age and gender differences were not significant. In the group of patients with combined hemorrhoids, patients with stage 3 of the disease predominated.

Indications for surgical treatment of patients in both groups were: pain, recurrent bleeding, prolapse of nodes. The procedure was performed on a Lakhta-Milon device with a wavelength of 1.47 microns and a power of 8.0 watts. After transmucosal laser thermal ablation of internal nodes, external nodes and fimbriae were eliminated by laser destruction or excision with a scalpel. Regardless of the method of excision, the bottom of the wound was treated with a laser for the purpose of hemostasis. As a result, the tissues were equally exposed to the laser, and no differences in their healing were observed.

The operation was performed under local anesthesia. A 2% solution of lidocaine in a volume of 4 ml was diluted in 20 ml of physiological solution and injected perianally at 3, 7 and 9 o'clock on the conventional dial; in addition, the anesthetic was injected under the external hemorrhoids before vaporization and their subsequent excision. The total amount of solution administered varied from 20.0 to 40.0 ml depending on the severity of the patient's pain sensitivity and the size of the nodes. Vaporization of internal nodes was performed transmucosally: after inserting the anoscope, the hemorrhoidal node was visualized, a laser conductor with a puncture of the mucosa above the hemorrhoidal node was inserted into the proximal part of the node, and thermal ablation was performed in the projection of the vascular pedicle at 2–4 points with an exposure time of 1 to 4 seconds. The leg of the knot was not tied. As the anoscope was withdrawn, the main part of the hemorrhoid was processed; the criterion for effectiveness was color change and tissue reduction. The impact stopped 0.5 sm proximal to the dentate line. Attention was paid to the short duration of the radiation pulse to prevent mucosal necrosis, which can lead to increased pain and the possibility of erosive bleeding in the postoperative period. For better manipulation of the optical fiber, a handle-holder for the optical fiber is designed. It allows the surgeon to precisely control the laser guide, quickly change the location of the light guide and perform vaporization of hemorrhoidal tissue more effectively.

After performing TLT of internal nodes, the removal of external hemorrhoids was carried out in the following way: partial vaporization of the node was performed, after which the reduced node was excised with a laser end guide with a diameter of 0.500 μm, making sure that the wound did not extend into the anal canal and was completely located perianally, in otherwise, pain and prolonged wound healing were provoked. The technique of excision of a node after its vaporization allows for economical excision of pathologically altered tissue, while leaving a narrow, quickly healing wound.

In patients, the duration of the operation was determined, using a visual analogue scale (VAS) the intensity of pain after surgery, its duration, and the presence of postoperative complications. Long-term results were studied after a year and a half. Postoperative complications and relapse of the disease were regarded as unsatisfactory treatment results. To assess the severity of complications, the Clavien Dindo classification was used [7]. Study design: retrospective, single-center.

Results. In the study group (n = 136), the duration of the intervention was 15.0 (15:20) minutes, minimum - 10 minutes, maximum - 25 minutes. Patients assessed the intensity of pain during surgery as 2.5 (2;3) points, from 1 point to 4. Its duration in the postoperative period was 6 (4;7) days, the minimum value was 2 days, the maximum value was 12. Postoperative bleeding occurred in 4 (2.9%), relapse of the disease within 1.5 years was diagnosed in 3 (4.8%) patients.

In patients in the control group (n = 90), the median duration of the intervention was 10 (10;15) minutes. The minimum duration was 5 minutes, the maximum was 25 minutes. The intensity of pain during surgery was rated by patients as 2.5 (2.0; 3.0) points. The minimum value was 1 point, the maximum - 4 points. The duration of pain after surgery was 5 days, the minimum value was 2 days, the maximum value was 12 days. In 8 (8.9%) patients, the postoperative period was complicated by bleeding, 2 (2.2%) of them with stage 3B severity required hospitalization and surgery.

As can be seen from the table, statistically significant differences between the studied groups of patients during laser treatment of internal and combined hemorrhoids of stages 2–3 were in the time of its implementation - combined operations were 1.5 times longer than isolated vaporizations.

After the operation, patients in both groups were prescribed phlebotropic drugs, a diet with increased fiber content, and osmotic laxatives were recommended. The differences between the local treatment of patients with excised external nodes and patients with isolated vaporization of internal nodes consisted in dressing wounds with Levomekol ointment until they healed with mandatory hygienic procedures with a weak antiseptic solution after defecation and before dressing.

Epithelization of wounds occurred in 123 (90.4%) patients in the first 4 weeks; in more than 4 but less than 8 weeks - in 12 (8.8%) patients; wound treatment was carried out for more than 8 weeks in 1 (0.7%) patients. %) of the patient. Long-term results were studied in 63 people over 18 months after surgical treatment of combined hemorrhoids. Recurrence of external hemorrhoids occurred in 3 (4.8%), in the control group - in 1 (0.01%, p = 0.5). No polypoid skin formations were observed at the site of the external nodes after their vaporization and excision.

IV. DISCUSSION

The undeniable advantage of laser destruction of internal hemorrhoids over other treatment methods is the low level of pain during surgery and in the postoperative period, which is one of the main reasons for the widespread use of this treatment method in proctology [1,2,4,5,8]. Removal of an external hemorrhoid is performed in an area of increased sensitivity and can cause, according to a number of surgeons, not only an increase in the duration of the operation, but also an increase in pain, both during the operation and in the postoperative period, an increase in the frequency of postoperative complications, which, in to a certain extent, and is a brake on the spread of laser treatment of chronic combined hemorrhoids [3,4].

Surgeries for combined disease, in comparison with isolated internal hemorrhoids, take longer to perform; the median, respectively, was 15 and 10 minutes, p = 0.001, which is associated with the additional stage of eliminating the external component of combined hemorrhoids. A comparison of the time for performing operations showed that it took 5 minutes to eliminate the external node; in the structure of the intervention time, this stage amounted to 33.3% of the entire duration of surgical treatment of combined hemorrhoids.

The intensity of pain on the VAS scale for isolated and combined interventions was rated by patients as the same at 2.5 points, which can be explained by the minimally invasive nature of the main and simultaneous stages of the operation and the adequacy of local anesthesia. The increased number of patients with stage 3 disease in the study group did not affect pain perception during surgical treatment of combined hemorrhoids.

The intensity of pain during surgery for combined and internal hemorrhoids of 2.5 points according to VAS corresponds to the results obtained by other surgeons and indicates good tolerability of laser techniques in the treatment of both forms of the disease [1,2,4]. Postoperative bleeding occurred in 8 (8.9%) patients with isolated laser vaporization, which is more than twice as high as this figure with combined treatment of hemorrhoids - 4 (2.9%), p = 0.051. The differences obtained can be explained by the fact that the surgeon began to master laser treatment of chronic hemorrhoids with the destruction of only internal nodes, as an easier and less lengthy intervention, and only as he gained experience began to perform operations for combined hemorrhoids with the elimination of external nodes. Previous studies in the clinic showed that when laser coagulation was introduced into practice, including the elimination of the external component of hemorrhoids and concomitant pathology of the anal canal, the frequency of negative results (postoperative complications and relapses of the disease) in those operated on during the period of accumulation of experience was significantly higher. This allows us to conclude that the occurrence of bleeding is related to the training period, which is accompanied by the highest level of complications, and not to the peculiarities of laser treatment of internal and combined hemorrhoids [8].

The healing of wounds in the perianal area in 123 (97.6%) people in the first 4 weeks of the postoperative period is associated with the following factors: laser tissue dissection has a beneficial effect on wound healing by reducing inflammation and accelerating reparative processes; the wounds were located in a well-supplied area in the absence of inflammatory processes; were shallow and had a slit-like shape (the length prevailed over the width) [1,2]. Thus, evidence has been obtained of good tolerability of laser destruction of internal, as well as vaporization of external hemorrhoids with their excision, which motivates the wider use of this method of treating patients with chronic combined hemorrhoids of stages 2–3 on an outpatient basis under local anesthesia.

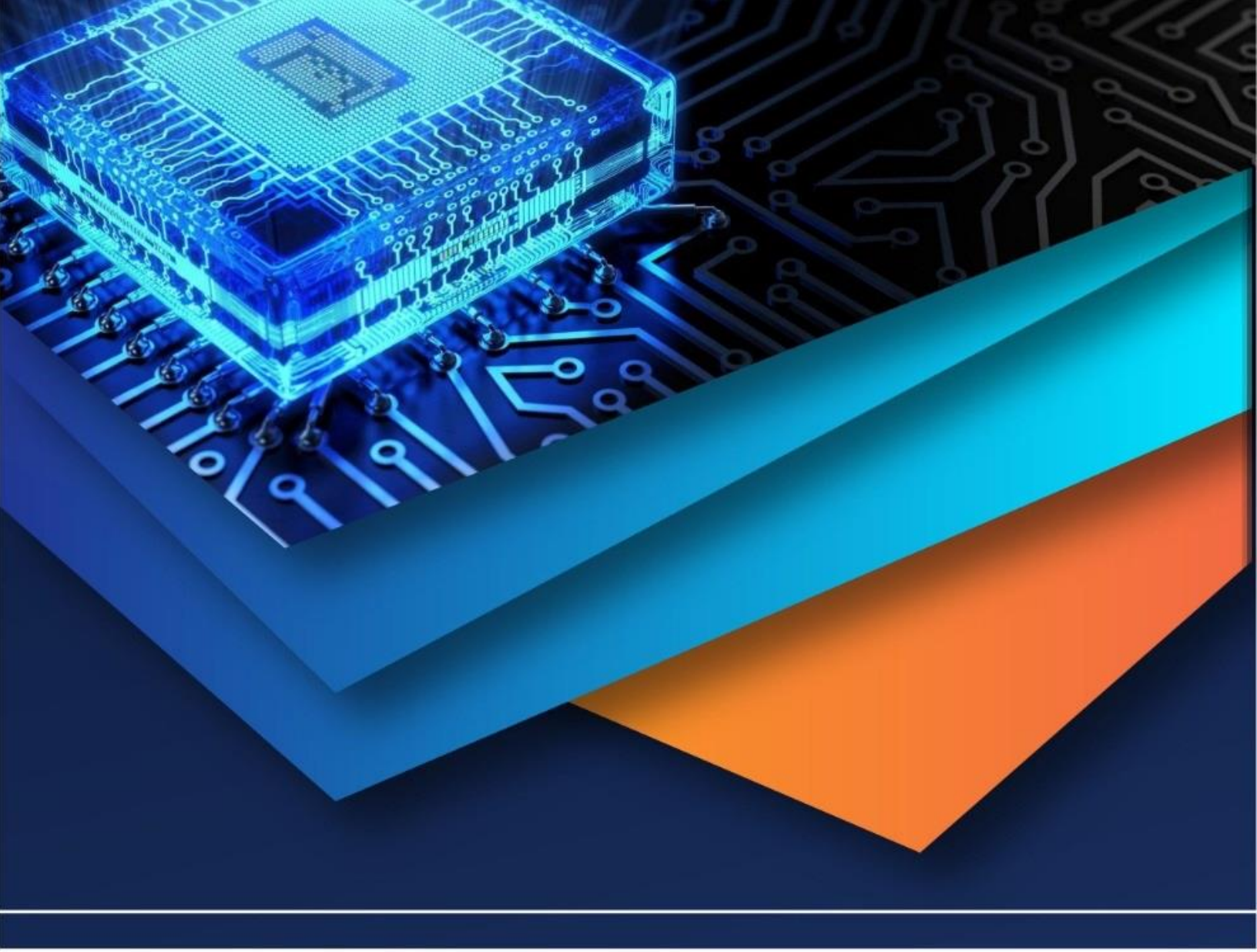
V. CONCLUSION

Laser destruction of internal and excision of external nodes after their vaporization, despite the significantly longer duration of the intervention, is similar in intensity and duration of pain syndrome to vaporization of isolated internal hemorrhoids, which makes it possible to recommend this tactic in the treatment of chronic combined hemorrhoids stages 2–3 on an outpatient basis.

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