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Mini Review

Chronic Anal Fissure. Modern View of the Problem

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Abstract

According to Russian and foreign literature anal fissure is one of the most frequent and common human diseases, accounting for 20 - 30 cases per 1000 people of the adult population. In the vast majority of cases, anal fissure occurs at the age of 30 to 50 years. It is believed that for the successful treatment of anal fissure, it is necessary to interrupt the pathological circle, in which the following occurs: as a result of constipation, solid fecal masses are formed, which mechanically damage the most vulnerable part - the posterior wall of the anal canal, which leads to severe pain and a significant increase in the tone of the sphincter, which, in turn, leads to ischemia and necrobiotic the state of the anoderm. Conservative treatment of patients with chronic anal fissure does not bring proper results. The traditional method of treatment of CAT is surgical, consisting in excision of a crack with lateral subcutaneous or posterior transanal metered sphincterotomy. However, sphincterotomy may be complicated by insufficiency of the anal sphincter, with a closed sphincterotomy - subcutaneous hematoma. The preservation of sphincterospasm in the postoperative period contributes to the recurrence of the disease and can lead to the formation of a submucosal pararectal fistula, cicatricial strictures of the anal canal or long-term healing. The articles devoted to modern approaches to the treatment of anal fissure are analyzed. The review presents the main modern methods of treatment of this pathology.

Keywords: *Anal Fissure; Laser Vaporization; Fissurectomy*

Purpose of the Study

To analyze modern methods of treatment of chronic anal fissure, to determine their effectiveness.

The Relevance of the Problem

Anal fissure is one of the most common diseases of the rectum. It accounts for 10 to 15% of all coloproctological diseases, the frequency of occurrence ranges from 20 to 23 per 1000 adult population. The disease most often develops at the age of 30 to 50 years, which determines its social significance. The incidence among men and women is the same. Modern methods of treatment of chronic anal fissure are described in both foreign and domestic literature. Beaty JS., *et al*. (2016) we conducted research in Eastern India from February 2019 to January 2021. Patients with chronic anal fissure were included in the study by the authors after receiving written informed consent. All patients were divided into two groups (fissurectomy and lateral sphincterotomy) according to the SNOSE method. In the group with

fissurectomy, anal dilation was performed for four minutes using a four-finger technique followed by fissurectomy. The crack was excised with a scalpel, the wound was treated until a healthy edge was reached to the level of the internal sphincter. In the group of patients with lateral sphincterotomy, the operation was performed in a closed manner. A double-leaf mirror was inserted into the anal canal. With the index finger of the left hand, the furrow between the inner and outer anal sphincters is probed. Then a scalpel was inserted into the furrow and carefully turned towards the internal sphincter in order to partially cut the muscle at the level of the tip of the fissure. Hemostasis was achieved in both procedures. Then, to stop minor bleeding, an anal tampon was given, which was removed after 24 hours. All patients were on intravenous administration a better treatment option for a chronic anal fissure than a fissurectomy. Postoperative complications with lateral sphincterotomy were less than with fissurectomy. But relapses were higher in the lateral sphincterotomy group, while there were no relapses in the fissurectomy group. Four-finger dilation followed by fissurectomy is the best option for young male patients with high anal sphincter pressure at rest, as well as for women with previous obstetric trauma and a short anal canal. Since the sample size is small, further research is needed to make a conclusion [1].

Stewart DB (2017) and Boland PA (2022) established the effectiveness of treatment with PFPT, including surface electromyography (s-EMG). The patients were hospitalized in a specialized multidisciplinary proctology clinic in the Netherlands. The authors collected clinical data, including previous treatment, duration of symptoms and results of clinical examination regarding cracks and pelvic floor dysfunction. The authors tested muscle tone, strength, endurance and relaxation of the sphincter muscles. The dysfunction was detected by rectal examination. In addition, muscle tone and PF function are measured using s-EMG [2] with an in-channel sensor (Maple®) [2]. To quantify the average intensity of pain during defecation, a visual analog scale (VAS) will be used on a 10-point scale from 0 (no pain) to 10 (the most intense pain). The quality of life is measured using the SF-36 health status questionnaire [2]. The SF-36 questionnaire includes eight areas of health-related quality of life related to both physical health (physical functioning, role limitations due to physical health, pain, general perception of health) and mental health (emotional well-being, role limitations due to emotional problems, social functioning, energy/fatigue). The score on each scale is obtained as the sum of points for each item and is linearly converted into a range from 0 to 100, where a higher score means a better level of functioning. The treatment consisted of 5 sessions with an average duration of 45 minutes for 8 consecutive weeks. The treatment protocol consisted of intrarectal myofascial sprains of the pubic-rectal muscle and myofascial relaxation at certain trigger points in the PF to increase flexibility, relieve muscle tension and improve blood circulation. Manual techniques are selected individually for patients. Breathing and exercises for the PF muscles are combined with surface electromyography (c-EMG) and biofeedback with an intra-channel sensor (Maple) [3]. Sessions are held to raise awareness and monitor the PF (dis) function [3]. Patients with dyssynergia PF learn to relax PF during tension. If patients are unable to shorten or relax the sphincter during a biofeedback session, neuromuscular electrical stimulation will be applied internally. Primary outcome the primary end result is rest tone during s-EMG PF registration before and after therapy. Secondary results consist of the prevalence of PF dysfunction in CAF; the relationship between CAF and other PF dysfunctions, PF muscle function before and after PFPT; VAS-pain before and after PFPT, fissure healing (complete reepithelization and absence of pain), quality of life (RAND-36) and reduction of complaints using proctological measurement of the outcome of a particular patient (Proctoprom) before and after PFPT. The effect analyses correspond to the RCT design and measurements at baseline, after 8, 20 weeks and 1 year of follow-up [3].

Sobrado Júnior (2019), CW Marti L (2020), D'Orazio (2020) studies with pelvic floor physiotherapists in the field of anorectal dysfunction were organized at the Proctos Clinic of the Leiden University Medical Center. This retrospective study involved 110 consecutive female patients with idiopathic and non-recurrent CHF who underwent surgery from January 2010 to January 2019. All patients were observed for at least 2 years after surgery. The authors conducted this study in in accordance with the principles of the Helsinki Declaration. All patients underwent a preoperative manometric assessment, which was carried out by a manometric sensor. The manometric assessment was carried out 12 and 24 months after the operation. The data collected by the laboratory from healthy volunteers showed that the normal values of maximum resting pressure (MRP) and maximum compression pressure (MSP) were 68.1 ± 12.3 mmHg and 112 ± 36.2 mmHg, respectively [5]. All patients underwent fissurectomy and anoplasty with V-Y advancement of the skin flap lying in a

gynecological position under spinal or general anesthesia. Patients with hypertensive IAS were treated intraoperatively with local administration of 30 units. Botulinum toxin A (Botox, Allergan Westport, Ireland) [5] or with local administration of postoperative nifedipine and lidocaine within 15 days after surgery (Antrolin®) [5]. Metronidazole was administered intravenously at a dose of 500 mg 1 hour before surgery, then orally at a dose of 250 mg for 7 days 3 times a day. During the first two weeks after surgery, patients took various doses of plantain fibers. A laxative drug (sennosides) was given orally to subjects who had not yet had a stool 3 days after surgery. Immediately after surgery, all patients received 100 mg of diclofenac intramuscularly for pain relief and were instructed to take only 100 mg of nimesulide tablets as needed. Complete healing was defined as complete epithelization of the extended skin flap. Recurrent CAF were defined as those that occurred after the complete healing of the previous wound. Both the duration and intensity of pain after defecation were assessed; the intensity was assessed on a visual analog scale (VAS). PHI was assessed before surgery and 6, 12 and 24 months after surgery on the Pescatori scale [6]: incontinence of gases and mucus; B for liquid stool; C for solid stool; 1 for random; 2 for a week and 3 for a day. Patients were discharged within 24 hours after surgery, then examined until full recovery with the first visit 3 days after surgery, the second on the 10^{th} postoperative day and regularly every 10 days for the first two months after surgery. They were also observed up to 24 months after surgery. In 72 patients with hypertensive IAS, 40 were treated with botulinum toxin A injection, and 32 of them were treated with local application of nifedipine and lidocaine ointment. On the 40^{th} day after surgery, complete wound healing and resolution of clinical symptoms were achieved. The duration and intensity of post-defecation pain significantly decreased compared to preoperative values from the moment of the first bowel movement. The results of manometry 12 and 24 months after surgery, the values of MCI and SSM practically did not change in patients with normotonic IAS. In patients with hypertension and AS, the values of SSM did not change compared to the values 12 and 24 months after surgery; whereas MRP were significantly lower after 12 months of follow-up compared to preoperative, but still significantly higher than in healthy people. After 24 months of follow-up after surgery, MRP values were within normal limits. The authors performed a fissurectomy with V-Y flap promotion in combination with a chemical-pharmacological sphincterotomy to reduce the tone of IAS, in the case of hypertensive IAS, may represent an effective approach to the treatment of CFA in patients. In most worldwide clinics, fissure excision (fissurectomy) using various methods of relaxation of the internal sphincter of the rectum, the operation consists in excision along the plane of the crack with fibrous changes within healthy tissues with the removal of the wound edges to the perianal skin. In patients with chronic anal fissure with sphincter spasm and a high risk of anal incontinence in the postoperative period (elderly patients, multiple and complicated labor history, clinical signs of perineal prolapse), it is recommended to excise the crack in combination with drug relaxation of the internal sphincter with botulinum toxin type A (after excision of the crack is administered at 3 and 9 hours for 5 UNITS of the drug (total of 10 units)). after excision of the crack, according to the accepted method, botulinum toxin type A is injected according to the developed method. The authors believe that in patients with chronic anal fissure with sphincter spasm, with the ineffectiveness of fissure excision in combination with drug relaxation of the internal sphincter, it is recommended to excise the fissure in combination with lateral subcutaneous sphincterotomy. After lateral sphincterotomy, the following complications are noted: hematomas, abscesses, formation of fistulas of the sphincter area, insufficiency of the anal sphincter in the postoperative period [8-11].

The operation was performed under local anesthesia. After the sphincter avulsion, vaporization of the chronic anal fissure was performed using a laser with a power of 10 watts and a wavelength of 1560 nm. with dosed lateral sphincterotomy. In the control group, the results of treatment of 110 patients (49 men and 61 women, the average age was 40.3 ± 10.9 years) were analyzed. In this group, excision of the anal fissure was used.

Conclusion

Having analyzed the available literature, today there are many modern techniques that allow performing operations for the treatment of chronic anal fissure. There is always a tendency towards perfection.

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