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CLINICAL GUIDELINES

Anal Fissure

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International Statistical Classification of Diseases and Health-related Problems: K60.0; K60.1; K60.2

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LIST OF ABBREVIATIONS

AS — Anal sphincter
MRI- magnetic resonance imaging
RCT — randomized controlled trial
US — ultrasound examination

TERMS AND DEFINITIONS

Anoderm is the epithelial lining of the anal canal, represented by a stratified squamous non-keratinized epithelium.
Anal canal is the terminal part of the digestive system, located between the lower rectum and the anus.
"Anatomical" anal canal is a zone located between the outer edge of the anus and the dentate line, 1.5–3.0 cm long.
Dentate line is a line formed by the margins of the anal valves formed by the intestinal mucosa between the Morgagni columns.
"Surgical" anal canal is the distal part of the gastrointestinal tract, including the 'anatomical' anal canal and the distal part of the rectum (from the dentate line to the anorectal ring, i.e. the attachment point of the puborectal muscle), with a length of 2.4–4 cm.
Anal fibrosis is resulting from a chronic inflammatory process, including the presence of scars in the edges and bottom of the fissure, a sentinel pile at the distal edge of the fissure, a fibrous polyp of the anal canal at its proximal margin and pectenosis.
Pectenosis is a rigid circular narrowing of the anus due to scarring of the distal margin of the internal sphincter.
Dyssynergic defecation is a disturbed coordination of the pelvic floor muscles during defecation.

1. BRIEF INFORMATION ON THE DISEASE OR CONDITION (GROUP OF DISEASES OR CONDITIONS)

1.1 Definition of the Disease or Condition (group of diseases or conditions)

Anal fissure is a linear or ellipsoid tear (ulcer) of the anoderm located within the 'anatomical' anal canal [1–6].

1.2 Etiology and Pathogenesis of the Disease or Condition (group of diseases or conditions)

Anal fissure is a polyetiological disease. Its cause is trauma of the anal canal, most often due to the constipation, frequent liquid stools or other defecation disorders [1,5,7–9].
The main pathogenetic cause of anal fissures is the presence of spasming of the internal sphincter [10–13], which occurs in response to trauma of the anoderm [7–9].

An important role is played by a predisposition to a low production of nitric oxide, which leads to an increased tone of smooth muscles [14].

It is also possible for dyssynergic defecation to influence on the internal sphincter spasming [15,16]. The predisposing factors also include the vascular factor: the inferior rectal artery does not form a wide network of vascular anastomoses along the posterior semicircle, the density of the capillary network is also significantly less here, and small arterial vessels feeding the anoderm pass through the contracted internal anal sphincter [17]. Consequently, the spasming further worsens the perfusion of the anoderm, creating unfavorable conditions for the healing of the defect [17–19].

In the anal fissure, the margins and the bottom are distinguished. An acute anal fissure (up to 2 months) has clear smooth margins without fibrous changes. At the bottom of such a fissure, there are nerve endings, which leads to a severe pain and the internal anal sphincter spasming. If the main damaging factors eliminate, an acute anal fissure heals.

With continued exposure to damaging factors, the healing process delayed. At the same time, fibrosis develops in the margins and bottom of the tear, preventing the epithelialization of the fissure: a chronic anal fissure is formed [1,5].

Pathognomonic signs of a chronic anal fissure are:

- fibrosis in the margins of the tear, as well as the presence of a fibrous polyp of the anal canal at the proximal edge of the defect and/or the presence of a sentinel pile at the distal edge of the defect;
- disease history ⩾ 2 months;
- fibers of the internal anal sphincter in the bottom of the defect.

1.3 Epidemiology of the Disease or Condition (groups of diseases or conditions)

Anal fissure is one of the most common diseases. It accounts for 10–15% of all coloproctological diseases, the incidence ranges from 20 to 23 per 1,000 adult population [20]. The disease most often develops at the age of 30–50 years, which determines its social significance. The incidence among males and females is the same [2].

1.4 Features of the Coding of Disease or Condition (group of diseases or conditions) According to the International Statistical Classification of Diseases and Health-related Problems

ICD-10 codes

Class — Diseases of the digestive system (XI):

K60.0 Acute fissure of the anus

K60.1 Chronic anal fissure

K60.2 Anal fissure, unspecified

1.5 Classification of the Disease or Condition (groups of diseases or conditions)

Anal fissure happens [21,22]:

1. By the disease time:

- Acute
- Chronic

2. By site of the tear in the anal canal:

- Posterior
- Anterior
- Lateral

3. By the spasming of the internal sphincter:

- With spasming
- Without spasming (most often occur due to the complications or are secondary manifestations of the another disease).

1.6 Clinical Picture of the Disease or Condition (group of diseases or conditions)

The main clinical manifestation of anal fissure is burning pain in the anus after defecation.

Some patients report pain during defecation and the blood discharge or blood stains on the stools or toilet paper.

A change in the pain syndrome, a decrease in its intensity, wetness, itching and persistent burning in the anus, shows a complication of the anal fissure — the blind internal anal fistula.

2. DIAGNOSIS OF THE DISEASE OR CONDITION (GROUP OF DISEASES OR CONDITIONS), MEDICAL INDICATIONS AND CONTRAINDICATIONS TO THE USE OF DIAGNOSTIC METHODS

The criterion for the diagnosis of ‘anal fissure’ is the presence of a linear or ellipsoid tear of the anoderm within the “anatomical” anal canal.

The diagnosis of 'acute anal fissure' means the presence of a linear or ellipsoid defect of the anoderm located within the 'anatomical' anal canal; the duration of the disease history is less than 2 months; and there are no fibrous changes indicating the chronic nature of the disease.

The diagnosis of 'chronic anal fissure' means the presence of a linear or ellipsoid defect of the anoderm located within the 'anatomical' anal canal; the disease history is more than 2 months; and the at least one of the symptoms of a long-term chronic process:

- scarring of the margins of the defect;
- fibrous polyp of the anal canal at the proximal edge of the defect;
- sentinel pile at the distal edge of the defect;
- fibers of the internal anal sphincter in the bottom of the defect.

In most cases, clinical examination is enough for the diagnosis of anal fissure.

At the same time, it is necessary to carry out differential diagnosis in order to exclude erosive and ulcerative lesions of the anal canal of other origin [1,21,23,24]:

- tumors of the anal canal and rectum;
- fistula-in-Ano;
- specific infections (tuberculosis, herpes virus, actinomycosis, syphilis, HIV infection);
- complications of caudal teratomas (in the presence of an opening of the primary embryonic tract);
- inflammatory bowel diseases with perianal complications;
- hemoblastoses.

Diagnosis

When formulating the diagnosis of anal fissure, it is necessary to reflect the nature of the disease, the site of defects, the presence or absence of spasming of the internal sphincter. The following are examples of diagnosis formulations:

- 'Chronic anterior anal fissure with spasming of the sphincter';
- 'Chronic posterior anal fissure without spasming of the sphincter';
- 'Acute posterior anal fissure'.

2.1 Complaints and History of the disease

Anal fissure is characterized by burning pain in the anus after defecation. Some patients may complain of pain during defecation and discharge of blood from the anus (blood blots on the stools and toilet paper) [2,23].

When asking the history of the disease, attention should be paid to the nature of pain, its duration and connection with the act of defecation. The following predisposing factors may present in the history: insufficient intake of dietary fibers, spicy, fatty and carbohydrate-rich food, constipation, and diarrhea [2,25–27].

2.2 Clinical Examination

- Physical examination is **recommended** for all patients with suspected anal fissure in order to confirm the diagnosis [1,21,23,24]:
- Visual check-up of the perianal skin and anus;
- Digital examination.

Grade of recommendation — C (Level of evidence — 4)

Comment: *the examination is carried out on a gynecological chair, in the position of the patient on his back with his legs as close to his belly as possible, and if it is impossible — in the side position.*

During visual check-up of the perineum and anus, attention should be paid to changes in the perianal skin (wetness, rashes, etc.), the shape of the anus, its gap, the presence of scarring and deformities, as well as the condition of the inguinal lymph nodes. Then, with careful spread of the anal verge, the anoderm should be examined for the presence of its defect. At the same time, the shape of the defect (linear or ellipsoid), its depth and boundaries, changes in the margins and the presence of a sentinel pile should be noted.

Digital examination for anal fissure is usually painful and may require the use of local anesthetics. During digital examination, attention should be paid to the presence of an anoderm defect and its site, the condition of the margins of the anal fissure, the presence or absence of fibrous changes in the anal canal, comorbidities of the anal canal and the low rectum (hemorrhoids, anal fistula, tumor, etc.).

It is necessary to determine the presence of clinical signs of spasming of the internal sphincter, characteristic of anal fissure — retracted and spasming distal part of the internal sphincter.

2.3 Laboratory Diagnostic Tests

There is no specific laboratory tests for the anal fissures.

Laboratory diagnostic tests should be performed before the surgery to exclude comorbidities, as well as, if necessary, for differential diagnosis.

2.4 Instrumental Diagnostic Tests

- Anoscopy, proctoscopy, and colonoscopy are **not recommended** for patients with anal fissure due to the presence of severe pain syndrome.

In order to clarify the diagnosis, it is recommended to perform the above tests in the surgery room under anesthesia, if necessary; in other cases — after pain relief [1,11,21].

Grade of recommendation — C (Level of evidence — 5)

- In patients with anal fissure in the absence of clear clinical signs of the internal sphincter spasming, according to clinical examination, it is **recommended** to study anal sphincter functions by sphincterometry to objectify the presence of the internal sphincter spasming [1,11,28–30].

Grade of recommendation — C (Level of evidence — 4)

Comment: *this method allows to evaluate the total contractile activity of the external and internal sphincters of the anus.*

The following indicators are evaluated: tone and strength of volitional contraction of the anal sphincters. The magnitude of the tonic tension characterizes the internal anal sphincter predominantly.

With volitional contraction, the contractile activity of the striated muscles of the external sphincter and pelvic floor is evaluated. Spasming of the internal sphincter is confirmed in the presence of at least one of the following manometric signs:

1. *Increase of the mean pressure in the anal canal at rest;*
2. *The presence of ultra-slow waves.*

Method: the patient is placed on the couch in the position 'lying on his/her side with his/her knees bent', the sensor is inserted into the anus to a depth of 4.0–5.0 cm. Data is recorded 3–4 minutes after the introduction of the sensor — the time required for the patient to adopt to the test and attenuation of the anal reflex caused by the introduction of the sensor.

- In patients with anal fissure, in the absence of clear clinical signs of the internal sphincter spasming according to clinical examination, it is **recommended** to check-up the sphincter functions by profilometry, while this test is a more sensitive method for diagnosing the presence of the internal sphincter spasming [1,11,29–31].

Grade of recommendation — C (Level of evidence — 3)

Comment: *profilometry is a method of assessing pressure in the lumen of a hollow organ. Anorectal profilometry provides pressure recording in different planes along the entire length of the anal canal.*

A computer program is used to graph the distribution of pressure values and calculate the maximum and the mean pressure values, as well as the asymmetry coefficient. The processing program provides for the analysis of pressure data at any level of the anal canal cross-section.

Spasming of the internal sphincter is confirmed in the presence of at least one of the following manometric signs:

1. *increase of the mean pressure in the anal canal at rest;*
2. *increase in the maximal pressure in the anal canal at rest;*
3. *the presence of ultra-slow waves.*

Method: the test is carried out in the position of the patient lying on his/her side with his/her legs bent at the knees. After preliminary calibration, the catheter is inserted into the rectum of the patient to a depth of 6 cm. The rate of fluid perfusion through the catheter is 1 ml / min. With the help of a special puller device, the catheter is pulled out of the rectum at a speed of 1 mm / sec, while the pressure is recorded throughout its movement. Data analysis is carried out using a computer program with a graph showing the distribution of pressure in the anal canal.

2.5 Other Diagnostic Tests

Additional instrumental and laboratory tests are performed for the purpose of differential diagnosis.

- For patients with anal fissure, in the absence of signs of the rectal internal sphincter spasming, according to physical and instrumental examination, and suspected presence of erosive and ulcerative lesions of the anal canal of specific etiology, as well as the development of complications, the following tests are recommended [1,21,23,24]:

1. endoanal ultrasound;
2. colonoscopy (examination level — terminal ileum).

Grade of recommendation — C (Level of evidence — 5)

3. TREATMENT, INCLUDING DRUG AND NON-DRUG THERAPY, DIET THERAPY, ANESTHESIA, MEDICAL INDICATIONS AND CONTRAINDICATIONS TO THE USE OF TREATMENT METHODS

3.1 General Principles of Treatment of Acute and Chronic Anal Fissure

The treatment of acute and chronic anal fissures pursues the following objectives:

1. normalization of the stool;
2. relief of pain syndrome;
3. impact on the wound healing;
4. relaxation of the internal anal sphincter.

3.2. Treatment of Acute Anal Fissure

- Conservative treatment is **recommended** for all patients with acute anal fissure [4].

Grade of recommendation — A (Level of evidence — 1)

3.2.1. Diet Therapy and Normalization of the Gastrointestinal Tract function with the Use of Laxatives

- Patients with anal fissure are **recommended** to consume an adequate amount of fluid and dietary fibers to normalize the activity of the gastrointestinal tract and eliminate constipation. In cases where it is not possible to normalize the stool while following a diet, it is **recommended** to use laxatives in order to form a regular mushy stool in the patient [1,11,21,32–35].

Grade of recommendations — C (Level of evidence — 5)

Comment: *the diet of patients should include foods rich in dietary fiber and a large amount of liquid. It has been proven that daily intake of 25 grams of dietary fiber increases the frequency of stool in patients with chronic constipation. The use of liquids up to 1.5–2 liters per day increases the frequency of stools and reduces the need for laxatives in patients who follow a protein diet. Wheat bran, seaweed and flaxseed traditionally used in our country as a source of dietary fiber. Also, to normalize the activity of the gastrointestinal tract, drugs containing the shell of plantain seeds or polyethylene glycol, which have a high water-retaining ability, are used. They allow the patient to avoid straining during defecation. The doses of drugs are chosen individually.*

3.2.2. Conservative Treatment

- Patients with anal fissure are **recommended** to undergo conservative therapy aimed at pain relief and healing the defect [1,21,35–37].

Grade of recommendation — C (Level of evidence — 5)

Comment: *for the treatment of anal fissures, both systemic and topical agents are used in the form of gels, creams, ointments and suppositories.*

With severe pain syndrome, are used:

1. *agents from the group of propionic acid derivatives;*
2. *local anesthetics.*

The conservative treatment, including stool regulation and the use of anesthetics, can effectively cure up to 50% of patients with acute anal fissure.

As wound-healing agents, agents with anti-inflammatory, immunostimulating and analgesic effects are used. These drugs can be used both for the treatment of acute anal fissure, and as symptomatic treatment for chronic anal fissure, as well as after surgery to heal wounds. After surgery, the above drugs are used in accordance with the stage of the wound healing.

3.2.3. Non-Operative Relaxation of the Rectal Internal Sphincter

- In patients with anal fissure with the internal sphincter spasming, it is **recommended** to inject botulinum toxin type A into the internal anal sphincter [2–5,38–50].

Grade of recommendation — B (Level of evidence — 2)

Comment: *as per this technique, the drug should be injected under the visual control into the internal sphincter under application or local anesthesia in a total dosage from 10 units to 100 units [39].*

It is worth noting that at the moment there is no unified method of administration of agents for non-operative relaxation of the internal anal sphincter (different agents, injection points and their quantity, dosage of the drug), which explains the significant heterogeneity in the results of treatment of patients [3,40,41].

Administration of the agent leads to epithelialization of the anal fissure in 33–96% of patients [4,42–46]. The recurrence rate can reach 42% [4,39,42,47; however, repeated use of the agent is possible [44,45,48]. Complications after injection of botulinum toxin type A (off-label) include: hematomas, perianal thrombosis, perianal abscesses; though the morbidity does not exceed 2.2% [3]. Clinical manifestations of anal incontinence are observed in 5.1%, they disappear within up to 8 weeks [3,39,40].

3.3. Treatment of Chronic Anal Fissure

3.3.1. Conservative Treatment of Chronic Anal Fissure

- For patients with chronic anal fissure for the purpose of symptomatic therapy and if surgery is refused, conservative treatment is **recommended** in accordance with the recommendations for the treatment of acute anal fissure (see point 3.2. Treatment of Acute Anal Fissure) [2–5,12,38–50].

Grade of recommendation — B (Level of evidence — 2)

- Patients are **not recommended** to undergo conservative therapy only more than 8 weeks [51,52].

Grade of recommendation — B (Level of evidence — 2)

3.3.2. Surgery for Chronic Anal Fissure

***** Surgery is **recommended** for patients with chronic anal fissure. Surgery for a chronic anal fissure includes an excision of the fissure and various methods of relaxation of the internal sphincter. [1,4,48,53–58].

Grade of recommendation — B (Level of evidence — 2)

Comment: *the presence of fibrosis in the anal canal significantly increases the risk of recurrence.*

Fissure excision technique: the procedure should include excision along the plane of the fissure with fibrous changes within healthy tissues, with the removal of the wound margins to the perianal skin 1.5–2.0 cm from the anal verge [1]. In cases where a posterior internal fistula forms against the background of a chronic anal fissure, the surgery should be performed according to the above method and is supplemented by probing the fistula and excision on the probe.

With a transsphincter fistula, an additional internal sphincterotomy is not recommended.

- In patients with chronic anal fissure with sphincter spasming and a high risk of anal incontinence after surgery (elderly patients, multiple and complicated childbirth in the history, clinical signs of perineal descent), it is **recommended** the fissure excision in combination with non-operative relaxation of the internal sphincter with botulinum toxin type A (after excision of the fissure, 5 units of the drug are injected at 3 and 9 o'clock (10 units in total)) [59–68].

Grade of recommendation — B (Level of evidence — 2)

Comment: *after the fissure excision an injection of #botulinum toxin type A should be performed into the internal anal sphincter, according to the method developed in the RNMRC of Coloproctology, which is more effective than isolated excision of the anal fissure [60–67]. The most effective is a dose escalation of #botulinum toxin type A from 10 to 40 units [67]. In addition, the use of this drug may be recommended for the treatment of patients with a high risk of postoperative anal incontinence [68].*

- In patients with chronic anal fissure with sphincter spasming, if the fissure excision is ineffective in combination with drug relaxation of the internal sphincter, it is **recommended** combine it with lateral internal sphincterotomy [69].

Grade of recommendation — A (Level of evidence — 1)

Comment: *the technique of lateral internal closed sphincterotomy. The index finger is inserted into the anal canal. Under the digital control a narrow eye scalpel is inserted between the internal and external sphincters through the intersphincter space.*

The depth of the scalpel insertion is up to the dentate line. Dissection of the sphincter is performed in one motion, removing the scalpel outwards. The finger in the anal canal detects the presence of a dissected sphincter diastase is, which indicates a correctly performed procedure.

The technique of lateral internal open sphincterotomy. At 0.5–1.0 cm from the anal verge at 3 o'clock, according to the conventional dial, a semi-oval incision of the skin is made about 1.0 cm long. 3.0–5.0 ml of 0.5% procaine solution is injected

into the submucosal layer of the anal canal wall to detach it from the internal sphincter. With a clamp or scissors, the internal sphincter is separated from the epithelial layer of the anal canal, as well as the internal anal sphincter from the external one. The height of the dissection is limited by the dentate line. After the sphincterotomy, two stitches are applied to the skin.

Contraindications: patients with a high risk of persistent anal incontinence in the postoperative period (elderly patients, multiple and complicated childbirth in the history, clinical signs of the pelvic floor descent) [70–74].

Complications [11,75]:

- *hematomas in the area of sphincterotomy;*
- *abscesses in the area of sphincterotomy;*
- *fistulas in the area of sphincterotomy;*
- *anal Incontinence after surgery.*

Lateral internal sphincterotomy is the 'gold standard' of anal fissure treatment. The rate of fissure healing after sphincterotomy is from 88% to 100%, with the rate of anal incontinence — from 8% to 30%, with follow-up to 6 years [43,70,76–84]. Open and closed methods of lateral sphincterotomy are comparable in outcomes [47,59,69,75,85].

3.4 Prevention of Infectious Wound Complications after Surgery

- For patients, after surgery for anal fissure in the presence of large wounds and disorders of the immune status, it is **recommended** to prescribe antibacterial and antimicrobial agents acting on the intestinal flora and in soft tissues. The agents can be administered parenterally or orally [1,21].

Grade of recommendation — C (Level of evidence — 5)

4. MEDICAL REHABILITATION, MEDICAL INDICATIONS AND CONTRAINDICATIONS TO THE USE OF REHABILITATION METHODS

- In all patients who have undergone surgery for anal fissure, in the postoperative period until wound healing, it is **recommended** to carry out daily dressings by cleaning wounds with antiseptic solutions and applying ointment with anti-inflammatory and wound healing effects to the wound surface to reduce the risks of inflammatory complications) [1,21].

Grade of recommendation — C (Level of evidence — 5)

- All patients who have undergone surgery for anal fissure, in the postoperative period until wound healing, are recommended to follow a diet with fibers, taking dietary fiber to form a regular soft stool [1,21].

Grade of recommendation — C (Level of evidence — 5)

- All patients who have undergone surgery for anal fissure are recommended to be under the supervision of a coloproctologist or a surgeon at their place of residence after discharge from the hospital, for the period of wound healing, to prevent recurrence and complications [1,21].

Grade of recommendation — C (Level of evidence — 5)

Comment: *the need for rehabilitation of patients is due to surgical trauma of the perianal region and anal canal. The presence of wounds in these anatomical areas and their healing by secondary tension cause the risk of infectious complications, postoperative bleeding.*

Pain syndrome of varying severity and possible violations of the functions of defecation and anal continence in the postoperative period can lead to significant social maladaptation and reduce the quality of life.

General principles of rehabilitation after surgical treatment:

- *comprehensive assessment of the patient's initial condition and formulation of the rehabilitation program;*
- *drawing up a plan of diagnostics and management necessary for rehabilitation;*
- *multidisciplinary approach for rehabilitation;*
- *monitoring the effectiveness of the management during the rehabilitation and at the end of the rehabilitation.*

Stages of rehabilitation of patients after surgery:

Stage 1 — early rehabilitation — from 4–6 to 7–10 days after surgery.

During this period, the patient is undergoing rehabilitation inpatient treatment for 3–5 days, after which further rehabilitation takes place within 7–14 days in an outpatient setting, or in a short-term hospital.

The most important task of the 1st stage of rehabilitation is to normalize the activity of the gastrointestinal tract for the normal consistency and frequency of stool. In addition, at this stage, hemostasis, wound healing and relief of postoperative pain are monitored.

The 2nd stage — from 15 to 45 days after surgery — is aimed at geometrically correct, programmable healing of wounds with the control of the gastrointestinal tract activity.

- *Diet: one of the important components of postoperative rehabilitation at an early stage is the normalization of the function of the gastrointestinal tract, aimed at eliminating constipation, the formation of a normal stool consistency. For this purpose, patients are recommended to consume an adequate amount of fluid and dietary fiber.*

Wheat bran, seaweed and flaxseed are used as a source of dietary fiber in their natural form, or in the form of dietary supplements and pharmacological drugs, which have a high water-retaining ability, which makes it possible to soften the stool, promotes regular defecation with the exception of the need for straining to empty the rectum.

- *Hemostasis control: rehabilitation measures for increased bleeding of wounds consist of their regular examination, the use of ointment compositions with a complex, including capillary strengthening effect, normalization of stool consistency with restriction of excessive straining. Various hemostatic remedies can be used, including gelatin absorbent sponges, electrocoagulation of bleeding surfaces.*
- *Relief of pain syndrome: the severity of pain depends on the extent of surgical trauma of the perianal area and anal canal, individual pain threshold, the presence of sutures on the wounds of the anal canal and perianal area. Systemic or topical drugs for pain relief are selected individually by the attending physician, depending on the degree of its intensity, as well as the severity of psycho-emotional disorders.*
- *Programmable wound healing: one of the most important aspects of postoperative recovery of patients, which allows avoiding the development of postoperative complications, is timely and topographically verified healing of wounds. Proper management of the wound healing, starting from the 2nd day after surgery until complete epithelization of wounds, implies: daily sanitation of wounds with antiseptic solutions, dressing with ointment applications (the composition of the ointment is determined by the stage of the wound process); control by a coloproctologist (digital examination is performed every two days); microbiological control (if infectious complications are suspected).*

<u>The main rehabilitation measures after surgery for the anal fissure.</u>

After discharge from the hospital it is necessary to carry out rehabilitation measures in all patients who have undergone surgery for anal fissure. Depending on the severity of functional disorders, a complex of rehabilitation measures is carried out on an outpatient basis or in an inpatient rehabilitation bed.

- *Defecation disorder: — the patient needs mechanical cleaning of the intestine:*
  - *— performing a cleansing enema;*
  - *— prescribing osmotic-type laxatives with an assessment of their effectiveness;*
  - *— mechanical removal of fecal masses under local or regional anesthesia.*
- *Pain syndrome (the intensity of the pain syndrome on the numerological assessment scale (NAS) exceeds 6 points, Appendix D):*
  - *— the use of analgesics, NSAID group administered parenterally;*
  - *— application on wound surfaces of ointment compositions, which include local anesthetic and anti-inflammatory components;*
  - *— physiotherapy (ultraviolet, enzymatic, laser, ultrasound, etc.).*
- *Control of the wound healing (if necessary, the use of local and/or systemic nonsteroidal anti-inflammatory drugs with local control of the inflammatory reaction, the need to perform microbiological control):*
  - *— treatment of wound surfaces with antiseptic solutions;*
  - *— application of ointment compositions on a water-soluble basis containing antimicrobial components;*
  - *— ointments containing antibacterial components;*
  - *— broad-spectrum antibacterial drugs in tablet form or administered parenterally;*

— *sowing of wound discharge with pronounced inflammatory changes in wounds, suspected contamination of wounds with pyogenic flora with dynamic control 5 to 7 days after the course of antibacterial therapy;*
— *physiotherapy (ultraviolet, enzymatic, laser, ultrasound, etc.).*

The objective of the 2nd stage of rehabilitation of patients who have undergone surgery for anal fissure is the final epithelization of wounds and prevention of postoperative complications.
Also, during the 2nd stage of rehabilitation, control over the consistency and frequency of stool, pain syndrome, and control of the course of the wound process remains relevant.

5. PREVENTION AND DISPENSARY SUPERVISION, MEDICAL INDICATIONS AND CONTRAINDICATIONS TO THE USE OF PREVENTION METHODS

5.1 Prevention

- All patients with the appearance of the first symptoms of anal fissure are **recommended** to consult a coloproctologist to determine the preventive measures aimed at preventing the development and progression of the disease [1,21].

Grade of recommendation — C (Level of evidence — 5)
Comment: *fundamental in the prevention of anal fissure is the normalization of the activity of the gastrointestinal tract, the elimination of constipation, compliance with the hygienic regime.*
Timely diagnosis and treatment of the disease can significantly improve the prognosis and reduce the likelihood of complications.

5.2 Dispensary management

- For all patients who have undergone surgery for anal fissure, after the end of treatment and wound healing, follow-up by a coloproctologist is **recommended** once every 6 months during the first year to improve disease control and prevent recurrence [1,21].

Grade of recommendation — C (Level of evidence — 5)

6. ORGANIZATION OF MEDICAL CARE

6.1 Indications for Hospitalization in a Medical Organization

Hospitalization in a elective hospital is indicated for patients with chronic anal fissure with the sphincter spasming for surgery.
Hospitalization of patients for surgery is carried out in case of the ineffectiveness of conservative methods of treatment and the presence of fibrosis in the anal canal.
Carrying out diagnostic measures in an elective situation at the stage of diagnosis can be performed on an outpatient basis. It is advisable to carry out surgery in coloproctology unit. Surgery can also be carried out in a one-day hospital.

6.2 Indications for the Patient Discharge from the Medical Organization

In case of elective hospitalization for chronic anal fissure, the patient can be discharged, depending on type of surgery, on the 3–5 days after surgery.
The indication for discharge is:

1. uncomplicated early postoperative period (absence of dysuria, bleeding, etc.);
2. absence of infectious complications;
3. controlled pain syndrome with the possibility of its relief with oral medications on an outpatient basis;
4. the possibility of independent defecation after radical surgery (discharge is recommended after the first stool);
5. the patient's ability (for patients with disabilities) to independently continue the conservative treatment under the supervision of a regional coloproctologist.

7. ADDITIONAL INFORMATION (INCLUDING FACTORS AFFECTING THE OUTCOME OF THE DISEASE OR CONDITION)

Negatively affect the outcome:
1 infectious complications;
2. stool disorder (diarrhea or constipation);
3. non-compliance by the patient with the restrictive regime and dietary recommendations.

Criteria for assessing the quality of medical care

№	Quality Criteria	Level of evidence	Grade of recommendation
1	The patient's complaints and history were collected	2	A
2	A clinical examination was performed	2	A
	Patients with anal fissure, in the absence of clear clinical signs of the internal sphincter spasming according to clinical examination, underwent asphincterometry and/or profilometry.	4	C
3	For patients with anal fissure, in the absence of signs of the internal sphincter spasming, according to clinical and instrumental examination, and suspicion of erosive and ulcerative lesions of the anal canal of specific etiology, as well as the development of complications, it is recommended to perform by endoanal ultrasound and/or colonoscopy.	5	C
4	Conservative treatment of acute anal fissure was performed (taking into account the specific clinical situation).	2	B
5	Surgery for the chronic anal fissure was performed (taking into account the specific clinical situation, the ineffectiveness of conservative therapy, the presence of the internal sphincter spasming, fibrosis in the anal canal).	2	A
9	Absence of anal incontinence because of surgery.	1	A
10	Relief of pain after surgery for medical reasons.	2	A

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