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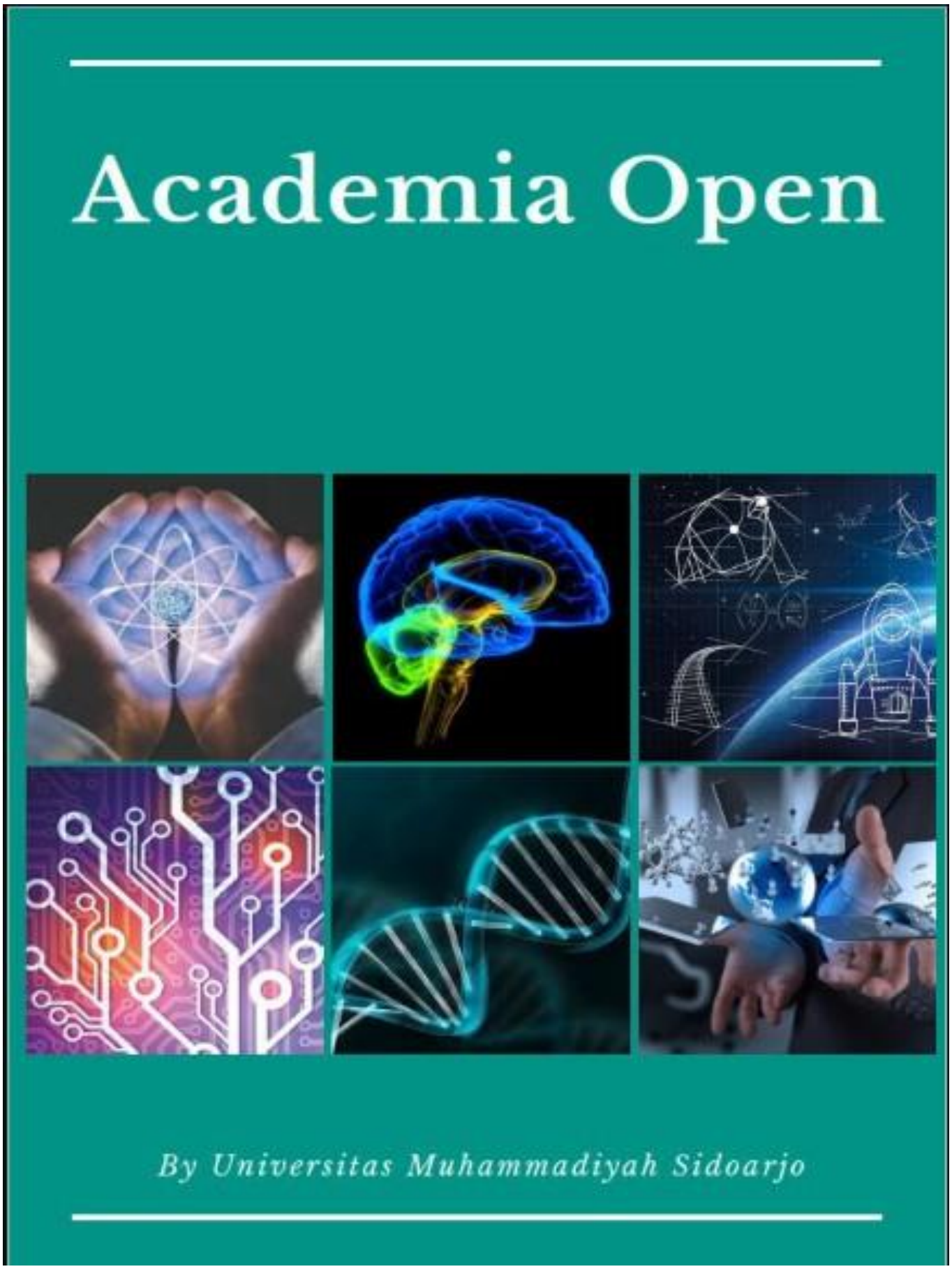

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Surgical Management of Acute Intersphincteric Paraproctitis

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Abstract

General Background: Acute paraproctitis is a common inflammatory disease of the pararectal tissue in coloproctology. **Specific Background:** The intersphincteric variant is a severe form characterized by rapid infection spread within the intersphincteric space and risk of fistula formation.**Knowledge Gap:** Diagnosis remains challenging because patients often present with severe pain but minimal external perianal signs, leading to frequent misdiagnosis. **Aims:** This study examines the clinical features, diagnostic difficulties, and surgical management of acute intersphincteric paraproctitis based on literature review and clinical observations. **Results:** Patients commonly presented with severe anorectal pain and sphincter spasm, while body temperature often remained below 38 °C and external changes were minimal; several cases were initially misdiagnosed as hemorrhoids or anal fissure. Surgical treatment included abscess incision and drainage, excision of the internal opening, sphincter-preserving procedures, and minimally invasive methods such as LIFT and video-assisted techniques, with postoperative recovery and rare fistula formation during follow-up. **Novelty:** The study emphasizes distinctive clinical characteristics associated with diagnostic difficulty. **Implications:** Early recognition and standardized surgical approaches may reduce diagnostic errors and prevent chronic fistula development.

Highlights:

• Severe Anorectal Pain With Pronounced Sphincter Spasm Occurred Despite Minimal External Perianal Signs.
• Diagnostic Errors Frequently Involved Misinterpretation as Hemorrhoids or Anal Fissure Before Specialized Examination.
• Radical Surgical Intervention With Adequate Drainage Demonstrated Rare Fistula Formation During Follow-Up.

Keywords: Acute Intersphincteric Paraproctitis, Surgical Management, Coloproctology, Anal Fistula Formation, Pararectal Inflammation.

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Introduction

Acute paraproctitis is one of the most common proctological diseases, accounting for up to 35% of all consultations in coloproctology. The intersphincteric variant occurs in approximately 4–12% of patients with acute paraproctitis. The pathology is characterized by infection spreading from the anal crypts into the intersphincteric space, leading to the formation of a localized or diffuse purulent focus. Delayed diagnosis and inappropriate surgical strategy increase the risk of chronic disease course and the formation of anal fistulas. Despite decades of experience, the optimal surgical approach for intersphincteric paraproctitis remains a matter of debate.

Intersphincteric paraproctitis is characterized by a severe clinical course, rapid progression of the inflammatory process, and a high risk of complications, including premature death of cells in the anal canal, a rare and severe condition caused by insufficient blood supply, severe blood poisoning and spread of infection to adjacent cellular spaces often forming membrane protrusions that resolve into double membrane vacuoles. This type of spread can be more efficient than when the pathogen travels through the extracellular environment, such as the bloodstream[1].

Delayed or inadequate treatment of intersphincteric purulent inflammation of the cellular tissues of the rectum leads to the formation of chronic rectal fistulas, which require more complex reconstructive surgeries and are associated with a high risk of impaired anal sphincter function.

The disease results in temporary disability, reduced quality of life, and, in some cases, permanent disability[2]. Timely surgical management of acute forms helps to reduce the economic burden on the healthcare system and the social consequences of the disease.

Despite the apparent simplicity of the procedure — abscess incision and drainage — surgical mistakes often result in the development of chronic paraproctitis and recurrent fistulas - abnormal hollow tract communicating an external opening in the perianal skin with an internal opening in the anal canal. The majority of anal fistulas in the adult population are attributed to cryptoglandular infection which starts in the intersphincteric space and then spreads in various directions.[3]

The relevance of this study lies in the need to standardize approaches to the choice of surgical access, the extent of intervention, and postoperative management strategies for patients.

Materials and Methods

The clinical presentation of acute intersphincteric paraproctitis (AIP) is characterized by a pronounced pain syndrome with minimal local signs of the purulent-inflammatory process. Pain is especially severe during defecation, resembling that observed in anal fissures. In eight patients, pain was the only complaint. In half of the patients, body temperature did not exceed 38°C. On examination of the perianal region, either no external changes were detected or only slight edema along the anocutaneous line was noted (in 22 patients). On specialized examination, a marked sphincter spasm was typically identified (resting tone of the internal anal sphincter exceeding 9.4 kPa, and of the external sphincter exceeding 6.8 kPa). Digital rectal examination was extremely painful.

On gentle palpation in the intersphincteric groove, a localized bulge of a rounded or fusiform shape was detected. The anal crypt adjacent to the infiltrated area was also infiltrated, sometimes protruding into the rectal lumen or, conversely, being retracted. The size of the infiltrate ranged from 3–5 × 2–3 cm. In seven patients, the purulent process extended along the anocutaneous line, and the clinical picture of AIP resembled that of subcutaneous-submucosal paraproctitis.

Results and Descussion

Figure 1. Clinical findings in acute intersphincteric paraproctitis [4]

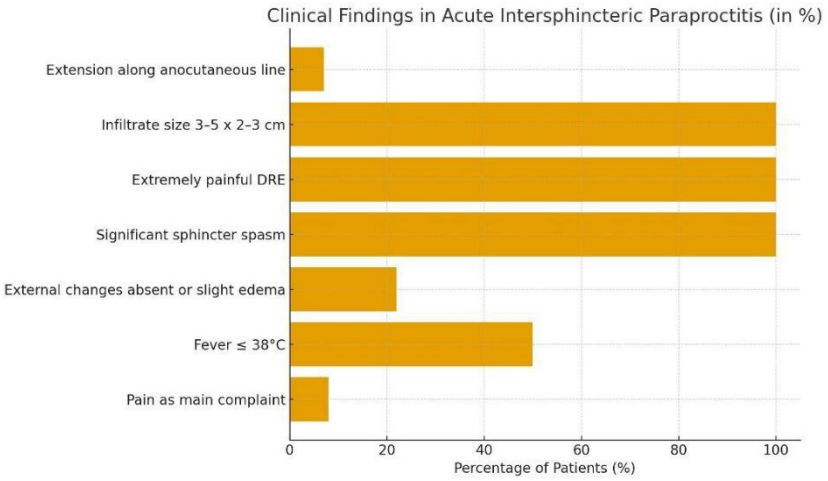

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Figure 1 illustrates the frequency of key clinical manifestations observed in patients with acute intersphincteric paraproctitis. Severe pain and pronounced sphincter spasm were present in nearly all patients, accompanied by extremely painful digital rectal examination. In most cases, the inflammatory infiltrate measured 3–5 × 2–3 cm. External perianal changes were absent or minimal in a significant proportion of patients, while body temperature remained below 38 °C in approximately half of the cases[5,6]. Extension of the purulent process along the anocutaneous line was observed relatively rarely.

The clinical features of acute intersphincteric paraproctitis (AIP) were the cause of diagnostic errors.

For example, 5 patients were treated on an outpatient basis for 2–3 days for “acute hemorrhoids” or anal fissure. In one patient, acute anal fissure was mistakenly diagnosed. This patient had a pronounced sphincter spasm; a specialized examination was performed only after presacral anesthesia, and on the second day, paraproctitis was revealed and surgically treated[7].

Therefore, in diagnostically challenging cases, a digital rectal examination under anesthesia is recommended.

The analysis was based on recent literature data from PubMed, e-Library[3], Coloproctology Journal, as well as the authors' own clinical observations of patients operated on for acute intersphincteric paraproctitis.

Figure 2. Diagnostic errors in acute intersphincteric paraproctitis [8]

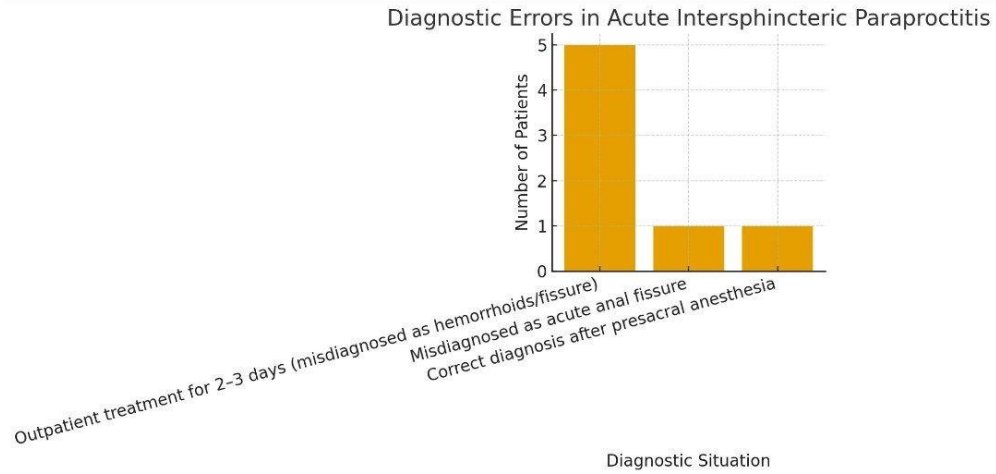

Figure 2 demonstrates the distribution of diagnostic errors in patients with acute intersphincteric paraproctitis. The majority of patients were initially misdiagnosed and treated on an outpatient basis for 2–3 days as having acute hemorrhoids or anal fissure. In a smaller number of cases, the condition was incorrectly diagnosed as acute anal fissure. Correct diagnosis was established only after digital rectal examination under presacral anesthesia, highlighting the diagnostic complexity of intersphincteric paraproctitis and the importance of thorough examination in patients with severe anorectal pain.

Main Surgical Approaches

1. Radical Procedures

a)Incision and drainage of the abscess.

b)Simultaneous excision of the internal fistula opening

c)Sphincter-preserving techniques for localized processes.

2. Palliative Interventions

a) Drainage of the purulent focus without excision of the internal opening.

Used in critically ill patients or in cases with unclear localization of the internal opening.

3. Modern Minimally Invasive Techniques

a) Ligation of the intersphincteric fistula tract (LIFT procedure).

b) Video-assisted techniques (VAAFT).

c) Use of biomaterials for fistula tract closure and reconstruction.

Outcome evaluation criteria included:

- Time to resolution of inflammation,
- Recurrence rate,
- Formation of chronic fistulas,
- Anal sphincter function impairment.

Hospital Admission Record

Name: Gavkhar Otajonova

Date of Birth: 1992

Hospital Number: 1293D

Admission Details

Date of Admission: June 6, 2025

Primary Diagnosis: Chronic intersphincteric fistula of the rectum (paraproctitis)

Date of Surgery: June 7, 2025

General Blood analysis

Table 1. Hematological parameters in a patient with intersphincteric paraproctitis

WBC	10,5 x10 9/L
RBC	3,5 x10 12/L
Neutrophils	78%
ESR	25 mm/ч

Table 1 presents the main hematological findings in a patient with intersphincteric paraproctitis. Laboratory results demonstrate moderate leukocytosis with neutrophilia and elevated erythrocyte sedimentation rate, reflecting the presence of an acute inflammatory process. Reduced red blood cell count may indicate inflammatory anemia commonly associated with prolonged or severe infection[9,10].

Postoperative Course

The surgical pattern was sent for histopathological examination. The result was received within 24 hours:

Findings: Wall thickening, fibrosis around the fistulous tract.

1. *Patient Information*
2. *Patient Information*

Name: Tokhir Ergashev

Date of Birth: 1951

Hospital Number: 126D

Admission Details

Date of Admission: January 15, 2025

Primary Diagnosis: Chronic intersphincteric fistula of the rectum (paraproctitis)

Date of Surgery: January 16, 2025

General Blood analysis

Table 2. Hematological parameters in a patient with chronic intersphincteric paraproctitis

WBC	9.5 x10 9/L
RBC	3 x10 12/L
Neutrophils	86%
ESR	18 mm/ч

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Table 2 summarizes the hematological findings in a patient with chronic intersphincteric paraproctitis. The results show relative leukocytosis with marked neutrophilia, indicating persistent inflammatory activity. A reduced red blood cell count may reflect chronic inflammatory changes, while a moderately elevated erythrocyte sedimentation rate supports the presence of ongoing inflammation.

Postoperative Course

Postoperatively, the material was sent for histological examination. The result was obtained within 12 hours: the epithelium of the fistulous tract is often absent and replaced by granulation tissue.

3. *Patient Information*

Name: Atamatov Olimzhon

Date of Birth: 1981

*Hospital Number:*1860D

Admission Details

Date of Admission: August 20, 2025

Primary Diagnosis: Chronic recurrent intrasphincteric fistula of the rectum (paraproctitis)

Date of Surgery : August 20, 2025

General Blood analysis

Table 3. Hematological parameters in a patient with chronic recurrent intersphincteric paraproctitis [11]

WBC	9,87 x10 9/L
RBC	4,30 x10 12/L
Neutrophils	78
ESR	15 mm/ч

Table 3 presents hematological findings in a patient with chronic recurrent intersphincteric paraproctitis. The laboratory data indicate mild leukocytosis with neutrophilia, consistent with persistent inflammatory activity. Erythrocyte sedimentation rate remains moderately elevated, suggesting a chronic inflammatory process without signs of acute systemic response.

Express test

HBsAG	positive

The postoperative material was sent for histopathological examination. The report was received within 2 days: hyperplasia of the squamous epithelium and chronic inflammation of the fistulous tract wall[12,13].

In cases of acute intersphincteric paraproctitis (AIPP), a one-stage radical surgical intervention is usually performed under general or sacral anesthesia. After preparation of the anal verge and rectal mucosa according to standard methods, the communication between the abscess cavity and the rectal lumen is clarified. For this purpose, the infiltrate is punctured along the intersphincteric groove, pus is aspirated, and a dye solution (methylene blue or brilliant green) is injected into the abscess cavity[14]. The further course of the operation depends on the level of communication between the abscess cavity and the rectal lumen: In intrasphincteric communication, a transverse incision parallel to the fibers of the external anal sphincter is made, the abscess is opened, the muscle fibers are bluntly separated, and the incision is extended toward the rectal lumen. Resection is performed proximodistally in a conical manner along the anal verge. This ensures better wound drainage and prevents the formation of residual cavities, which may later develop into a rectal fistula.

In transsphincteric communication through the superficial fibers of the external anal sphincter, the operation is performed as a graded sphincterotomy via the internal opening of the abscess, communication involving a significant portion of the external sphincter, after opening the abscess, excising the affected anal crypt, and extending the incision distally along the anal ridge through the internal opening of the abscess, a seton is placed and ligated. During a follow-up period of up to 3 years, only one patient developed an incomplete internal fistula[15].

Patients operated for acute paraproctitis under general or spinal anesthesia underwent excision of the fistulous tract, irrigation of the cavity with antiseptic solutions (3% H_2O_2 and decasan), and drainage with a tube wrapped in gauze soaked with Levomekol ointment. On the first postoperative day, the drainage tube was removed, the wound was treated with Betadine, a rubber drain was left in place, and an aseptic dressing was applied.

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Conclusion

Thus, AIPP should be regarded as a distinct form of the disease requiring specific surgical treatment.

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