

PROCEEDINGS

## SURGICAL TACTICS AND TREATMENT OF ANORECTAL ABSCESES IN ADULT PATIENTS

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### ABSTRACT

**INTRODUCTION:** Patients with anorectal abscesses (ARAs) represent the most common proctological emergency in the anorectal area. Their wide distribution leads to clinical variety in the type and expression of inflammatory changes in the anorectal area.

**AIM:** The aim of this article is to carry out a study of different surgical methods in order to improve the effectiveness of operative treatment in patients with ARA.

**MATERIALS AND METHODS:** A total of 254 operated adult patients with ARA were studied, of whom 194 (76.4%) were males and 60 (23.6%) were females. The following operative methods were used: incision, revision, and drainage in 137 patients (53.9%), incision, revision, primary fistulotomy with cryptectomy and drainage in 48 patients (18.9%), and incision, revision, with ligation fistulotomy and drainage in 69 patients (27.2%). The average age of the operated patients was 49.57±16.12 years.

**RESULTS:** The ARA types were subcutaneous in 63 patients (24.8%), intersphincteric in 62 patients (24.4%), ischiorectal in 88 patients (34.7%), and supralelevator in 41 patients (16.1%). Superficial ARA was found in 107 patients (42.1%), and deep ARA was diagnosed in 147 patients (57.9%).

**CONCLUSION:** The definitive operative treatment was applied in patients with incision, revision, and one-time liquidation of the internal opening by primary or ligation fistulotomy, leading to timely healing without disease chronicity. The principles of necrosectomy and sphincter-preserving manipulations near the external anal sphincter in the treatment of different ARA types should always be a must.

**Keywords:** anal abscess, surgical treatment

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### INTRODUCTION

Anorectal abscesses (ARAs) as the most common suppurative inflammatory diseases are still a problem in emergency proctology due to their high rate. They occur in up to 0.5% of the total number of surgical patients. With a frequency of 25–30% of all coloproctological diseases, they often cause inflammatory complications, disease recurrence, and devel-



opment of anorectal fistula. Anorectal abscesses affect mainly the age group of 20–40 years, occurring three times more often in males. The disease has an important medicosocial impact,  $\frac{3}{4}$  of the patients being at working age. The high rate of ARA leads to clinical diversity in the type, degree, and expression of inflammatory changes in the anorectal area, which contributes to diagnostic mismatches and difficulties in the surgical treatment (1).

### AIM

The aim of this article is to carry out a study of different surgical methods in order to improve the effectiveness of operative treatment in patients with ARA.

### MATERIALS AND METHODS

Diagnostic, clinical, operative, and statistical methods were used to achieve the objectives of the study. All patients with ARA underwent clinical, laboratory, and instrumental examinations. A total of 254 operated adult patients with ARA were studied, 194 of whom (76.4%) were males and 60 (23.6%) were females.

Overall, in the examined clinical contingent, data show that males dominated over females by 4:1. All operated adult patients were analyzed by age and sex (Fig. 1).

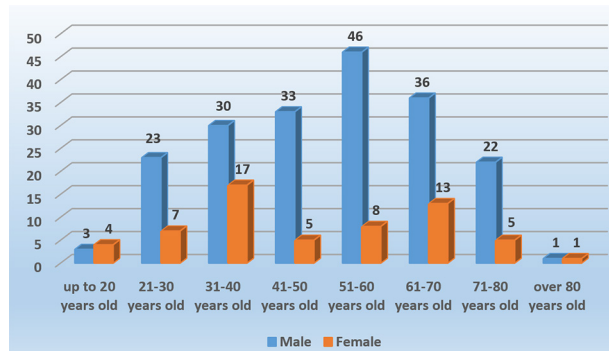


Fig. 1. Distribution according to age groups and gender in patients operated on for ARA.

A statistically significant difference was found in the age distribution between the two sexes ( $\chi^2=14.481^*$ ,  $p=0.04$ ). The age groups of 51–60 years and 61–70 years were the most affected when it came to male patients. Women were most often affected in the 31–40 age group, followed by the 61–

70-year group. The average age of adult patients was  $49.57 \pm 16.12$  years, ranging from 19 to 82 years.

Of crucial importance is for the operation for ARA to be carried out in a timely manner and as early as possible, where the choice of surgical method depends on the type, site, and size of the abscess. The main operative methods in adult patients were as follows:

#### *Incision, revision, lavage, and drainage*

These are the most commonly applied surgical methods, mainly for superficial subcutaneous, submucosal, and low intersphincteric ARA, but in fact they are performed at the initial stage of all types of abscesses. A radial or elliptical incision with partial excision is used to avoid postoperative wound edge contraction and early epithelialization, and to ensure better drainage. Complete opening of the abscess, digital revision of the cavity, ensuring complete evacuation of pus, maximal removal of necrotic tissue, and adequate drainage should always be performed. The methodology was applied to 137 adult patients (53.9%) with different types of ARA.

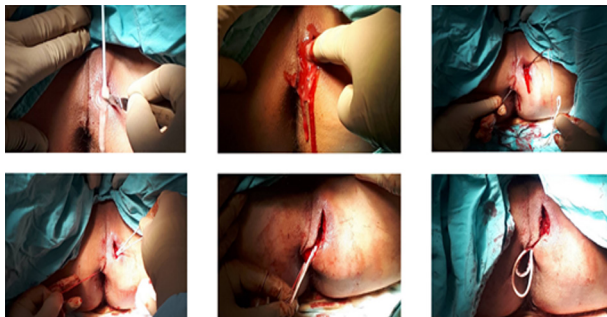
#### *Incision, revision, primary fistulotomy with cryptectomy and drainage*

This operative technique is considered by several coloproctologists to be a radical and definitive approach in the surgical treatment of ARA, because in these clinical cases the purulent cavity is always near the linea anorectalis. A wide semilunar incision is made, and the purulent-necrotic tissues are evacuated, after which a metal probe is passed through the internal opening of the abscess. The probing should be done carefully, penetrating from the abscess cavity along the existing fistula course in the direction of the affected crypt. In these cases, the fistula tract is almost always near the anus, with a short and linear course.

An immediate operative fistulotomy is then performed, and for this purpose, a part of the perineal skin and the rectal mucosa, together with the affected crypt, are cut along the probe in the form of a triangle. Its base is towards the inflammation and the apex towards the dental line in the rectum, describing in fact the operation of Gabriel. This technique was applied in 48 patients (18.9%) with ARA, in whom intrasphincteric or low transsphincteric fistula course was established.

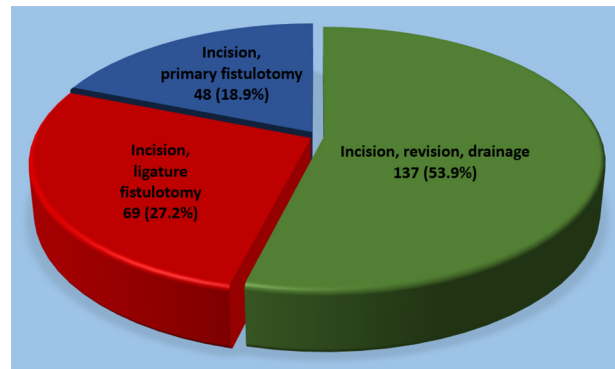
### ***Incision, revision with ligature fistulotomy and drainage***

Initially, a wide radial or semilunar incision is performed with subsequent evacuation of pus, removal of necrotic areas, and digital breakdown of the septa. This is followed by probing with a metal ball probe through the abscess cavity in the direction of the internal fistula opening in the rectum to the affected and inflamed crypt. The method is mainly applied in case of high opening of the fistula course, close to the sphincter, which are the types of deeper intersphincteric, ischiorectal, and supralelevator ARA. The placement of an elastic ligation from the edge of a glove is intended to perform a gradual section of the muscle fibers of the external sphincter. It is essential in the ligation method for the elastic ligation to pass, if possible, through the posterior middle part into the rectum, where in some of the Morgagnian's crypts is the internal opening of the abscess. Precisely in this area at 18 o'clock on the anal clock scheme is the posterior commissure of the anal sphincter, the external anal sphincter having thicker muscle fibers and with the gradual tightening of the ligature there is the slightest danger of traumatizing the sphincter. This operative method was performed in 69 patients (27.2%) with high transsphincteric and extrasphincteric connection to the internal opening of the abscess (Fig. 2).



*Fig. 2. Incision, revision, ligature fistulotomy and drainage.*

In the postoperative period, the elastic ligature is tightened 2–3 times with an interval of 3–4 days until the gradual cutting of the sphincter fibers. Analysis of the distribution of adult patients with ARA according to the type of operative interventions was done (Fig. 3).



*Fig. 3. Types of operative methods in adult patients with ARA.*

The mean age of the adult patients operated on was  $49.57 \pm 16.12$  years, with the youngest being 19 and the oldest being 82. The mean hospital stay of the operated adult patients with perianal abscesses was  $5.21 \pm 3.07$  bed days.

## **RESULTS AND DISCUSSION**

Anorectal abscesses are usually easily diagnosed, based on the anamnesis data, specific clinical symptoms, and physical examination. The patients with ARA in our study were divided as follows:

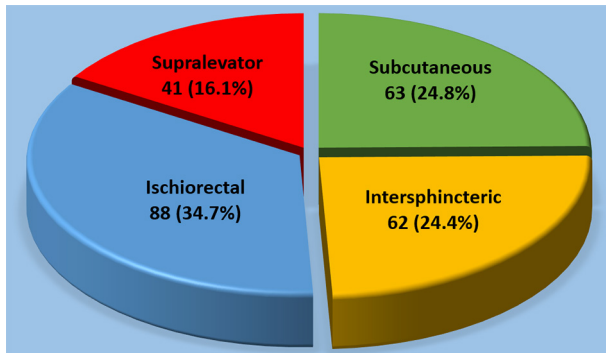
### ***According to the localization of ARA***

The distribution according to localization in depth in the operated patients was: superficial ARA in 107 patients (42.1%) and deep ARA in 147 patients (57.9%). The diagnosis of uncomplicated superficial ARA is usually not difficult and, with a correct anamnesis and careful examination of local signs, it is established in a timely manner. The main features of the clinical course of deep ARA are related to their deep location in the pararectal tissues, which prevents direct visual inspection and palpation. Deep ARAs have a long-lasting pre-hospital period, more severe clinical course, and more frequent early post-operative complications. As the inflammatory process progresses, the signs of intoxication syndrome intensify and, due to the localization of the inflammatory process near the prostate gland and the urethra, dysuric disorders and urine retention can be present. Often these patients are even treated for other diseases like flu, colitis, prostatitis, inflamed hemorrhoids, anal fissure, etc. In the case of deep ARA, the diagnosis is difficult, due to the oligosymptomatic onset and atypical course, not infrequently with septic manifestations. The surgical treatment is

more complicated, and, in a few cases, reoperation is required.

#### *According to the type of ARA*

Depending on the type of abscess, the patients were divided into 4 group types (Fig. 4).



*Fig. 4. Distribution of operated adult patients according to the type of ARA.*

These were: subcutaneous (submucosal) in 63 patients (24.8%), intersphincteric in 62 patients (24.4%), ischiorectal in 88 patients (34.7%), and supralevator in 41 patients (16.1%) respectively. Recurrent ARAs were found in 40 patients (15.7%), while spontaneous perforation of ARA on admission was found in 23 patients (9.1%).

The treatment of ARA should be timely, radical in volume, depending on the localization and spread of the abscess. The European Society of Coloproctology (ESCP) considers that simple drainage of an abscess without signs of concomitant fistula formation can result in complete healing in half of clinical cases (2,3). This surgical method is applied as indicated mainly in simple subcutaneous or submucosal ARA. Leading coloproctologists from ESCP and American Society of Colon and Rectal Surgeons (ASCRS) stressed on the importance that the surgical incision should always be performed as close as possible to the anal verge, because this minimizes the length of the surgical incision in the event of a future fistula (3,4). The presence of an internal opening of the abscess with an existing primary fistula of ARA is the basis of the existing controversy and discussion, whether intraoperatively, in addition to incision and drainage, a fistulotomy should also be performed by means of an incision or by means of an elastic rubber ligature (5,6). This surgical technique is undoubtedly-

ly more aggressive, but radical and with fewer subsequent recurrences. In the case of difficult verification of the internal opening and insufficient surgical practice, this fistulotomy should not be performed due to the risk of iatrogenic operative trauma to the external anal sphincter (7,8,9). It is very important that with the one-time adequate lavage of the abscess cavity, the internal opening of the abscess in the lumen of the rectum is pathogenetically liquidated, together with its main purulent course by means of ligature fistulotomy. This opinion is accepted by most coloproctologists, which should be a standard scheme of conduct in the operative treatment of ARAs. According to S. Chrabot et al. (10) the major causes for recurrence of anorectal abscesses are unidentified associated fistula or an unidentified anatomical component of the abscess. In recent years, however, there have been several publications that do not share this opinion, considering spontaneous healing possible only after incision and drainage, without liquidation of the internal opening (11,12). Some believe that in ARA incision, the internal opening of the abscess with a primary purulent course can be established only in 5 to 83% of cases, which often prevents radical operations (13). We are convinced that the one-stage primary fistulotomy with liquidation of the internal opening in ARA with excision of the affected crypt should be applied only with a safe and accurate verification of the location of this opening in the lumen of the rectum. Similar is the opinion of German S3 coloproctologists guideline (14). We should note that the one-stage fistulotomy in ARA, although an efficient and not complicated procedure, due to its non-physiological nature, can lead to various degrees and manifestations of anal sphincter insufficiency. However, we share the opinion of most authors that unremoved internal opening of the primary fistula course in ARA of cryptoglandular origin often leads to subsequent suppurative inflammatory complications, recurrence of complaints, and development of anorectal fistula.

## **CONCLUSION**

The clinical symptomatology of ARA depends on the virulence of the microorganism and the reactivity of the host, but it is mainly determined by the type, site, and size of the suppurative inflammatory focus. The main principles for timely and radi-

cal treatment are wide opening of the abscess cavity, subsequent lavage, liquidation of the internal opening if possible and drainage of purulent cavities in the pararectal space. Incorrect and non-radical surgical treatment of ARA often leads to unsatisfactory results due to new suppuration, re-hospitalizations, long hospital stay, long-term loss of working capacity and reduced quality of life. On indications, in adult ARA patients, we apply a definitive radical surgical treatment, consisting of incision, revision with one-time liquidation of the internal opening through primary or ligation fistulotomy, resulting in timely cure. However, it should be noted that surgical methods using primary operative or elastic ligation fistulotomy are leading to trauma of the external anal sphincter. The use of these operative methods requires general surgical and coloproctological experience, otherwise, these interventions bare risk of inducing short-term functional or more prolonged insufficiency of the anal sphincter. In the surgical treatment of the different types of ARA, the principles of maximum surgical effort in the removal of purulent-necrotic tissues and optimal conservatism in sphincter-preserving manipulations near the external anal sphincter should always be applied.

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