

# The Healing Effect of Minimally - Invasive Surgical Fissurectomy in Patients with Chronic Anal Verge Fissure Failed to Cure by Optimal Medical Therapy

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## ABSTRACT

**Background:** The search for an alternative to lateral internal sphincterotomy, the standard surgery for chronic anal fissure which may be complicated by anal fecal incontinence, is continuing. Fissurectomy is one of the alternatives, but this also done under general or spinal anesthesia. Few studies had explored the possibility of doing fissurectomy under local anesthesia anal infiltration and this study tries to explore this approach.

**Aims:** To evaluate the role of minimally - invasive surgical fissurectomy in patients with chronic anal verge fissure failed to cure by optimal medical therapy.

**Patients and Methods:** We evaluated a minimally - invasive surgical fissurectomy for inducing healing of these fissures. The procedure was done under local anesthesia (xylocaine + adrenaline 20 ccs) infiltration around the anus and conscious sedation of pethidine 100 mgm and Medazolam 5 mgm both given intravenous 5 minutes before the local xylocaine infiltration. We evaluated the patients for absence of pain during defecation and the complete healing of the wound area, 3 weeks and 3 months after the operation., to know the short-term and long-term cure rates.

**Results:** Among 35 patients with chronic anal fissures failed to heal by medical therapies, fissurectomy under local anesthesia infiltration around the anus facilitated by giving a proper dose of intravenous conscious sedation, had resulted in an excellent outcome with a healing rate of 95% & fewer and less severe anal incontinence rate of 8%.

**Conclusion:** Anal fissure occurs in young persons more in females and commonly in posterior location of anal verge. Minimally invasive fissurectomy under local anesthesia with the help of conscious sedation can be a good alternative to classical lateral internal sphincterotomy which has higher anal incontinent rates, sometimes permanent.

## Keywords

Anal fissure, Local diltiazem, Botulinum toxin, Fistulectomy.

## Introduction

Anal fissure is an ulceration of the anal canal anoderm [1]. It is one of the most frequent painful anal conditions [2]. Many factors contribute to its causation including mechanical trauma, sphincter spasm, and ischemia and the management should address these factors. Sphincter hypertonia causing local ischemia is considered as the main causal mechanism [3]. The American and British

scientific societies have published treatment guidelines [4]. Medical treatment is non-specific, aimed at softening the stool, facilitating regular bowel movements; resulting in healing of almost 50% of acute anal fissures [5].

The risk of recurrent fissure remains high if the causative factors persist. If the former medical treatment fails, medical treatment to reversibly decrease hypertonic sphincter spasm such as local diltiazem and or botulinum toxin local injection are used [6].

When symptoms persist after 4 to 8 weeks of appropriate medical treatment, surgery should be considered. Surgery remains the most effective long-term treatment and should be offered for cases of chronic or complicated anal fissure and for acute anal fissure with severe pain or for recurrent fissure despite optimal medical treatment [7].

Surgical treatment is based on two principles that may be combined: decreasing sphincter tone and excision of the anal fissure [8]. The old forcible uncalibrated anal dilatation is no longer recommended because of high rate of incontinence [9]. Lateral internal sphincterotomy (LIS) is the best-evaluated technique and remains the gold standard, but since LIS is associated with some risk of irreversible anal incontinence, the search for more continent-saving methods continues, where fissurectomy combined with anoplasty is preferred [10]. Other techniques have been described to reduce the risk of incontinence (calibrated sphincterotomy, sphincteroplasty). The lateral internal sphincterotomy reduces the hypertonia by decreasing the pressure in the anal canal, thereby improving local vascularization and allowing the fissure to resolve, by average healing rate of 90% with recurrence rate below 10%, but associated with anal incontinence rates up to 30% in some studies [11].

Alternative techniques proposed, being associated with a lower level of evidence, are the 'tailored' lateral sphincterotomy, pneumatic balloon dilation [12]. Foremost surgical techniques that do not divide the internal anal sphincter, namely, a subcutaneous fissurotomy and fissurectomy plus anoplasty, the so-called V-Y cutaneous flap or mucosal flap, initially those techniques were done to patients with high risk of postoperative incontinence, such as elderly people, multiparous women, patients with normal anal tone, patients with chronic diarrhea of any origin, and patients who had undergone previous anorectal surgery [13].

Because the results exhibited similar rates of healing as compared to those obtained with a lateral internal sphincterotomy, both in anecdotal and published evidence, many proctologists, adopted those sphincter-sparing techniques as a standard care for any chronic anal fissure refractory to medical management [14]. Given the trade-offs between the risks and benefits, FIAP and BT might be good alternatives for the treatment of chronic anal fissures. Fissurectomy combined with high-dose botulinum toxin A is a safe, effective, and durable option for the management of chronic anal fissure and a promising alternative to surgical sphincterotomy [15].

### Aims of the Study

To evaluate the role of minimally - invasive surgical fissurectomy in patients with chronic anal verge fissure failed to cure by optimal medical therapy.

### Patients and Methods

In a total of 35 patients with chronic anal verge fissure failed to cure by optimal medical therapy, we evaluated a minimally - invasive surgical fissurectomy for inducing healing of these

fissures. The procedure was done under local anesthesia (xylocaine + adrenaline 20 ccs) infiltration around the anus and conscious sedation of pethidine 100 mgm and Medazolam 5 mgm both given intravenous 5 minutes before the local xylocaine infiltration. The avoidance of general and spinal anesthesia resulted in reduced costs, an important issue to our patients seeking treatment in private surgical clinics after they had been put on long waiting lists in governmental semi-free hospitals. We evaluated the patients for absence of pain during defecation and the complete healing of the wound area, 3 weeks and 3 months after the operation., to know the short-term and long-term cure rates.

### Results

Patients characteristics		Value (median)
Age (years)		30
Women		21
Men		14
Posterior location		28
Anterior location		7
Smoking		8
Duration of fissure symptoms (months)		3
Preop rectal hypertonia by DRE		30
Indication of the fissurectomy	Failure of medical therapy	35
Minimally invasive fissurectomy	For posterior location	28
	For anterior location	07
Short-term clinical follow up data (3 weeks)	Cure rate	32
	Failure rate	03
Long-term clinical follow up data (3 months)	Recurrence	05
	Long-term cure	30

**Table 1:** Patient characteristics values and the effects of the research intervention.

Continence data	Value (median)
Preop newly developed score	24
Postop newly developed score	23
Patients with unchanged Wexner score	25

**Table 2:** Continence data before and after the research intervention.

### Discussion

The aim of this study was to evaluate the role of minimally - invasive surgical fissurectomy in patients with chronic anal verge fissure failed to cure by optimal medical therapy by avoiding the use of both general and local anesthesia by using combining local anesthesia infiltration and intravenous conscious sedation using a combination of medazolam and pethidine. Other studies had evaluated this approach for managing anal fissure with good results [16,17].

In this study 35 patients with chronic anal fissure, who failed medical therapy consisting of laxatives and local diltiazem therapy for 3 months, had undergone fissurectomy using the minimally invasive procedure mentioned above. Most patient were young and female (21 vs 14). Studies had found that fissure occur more in

young females, probably related to birth trauma and constipation, both common during pregnancy and delivery [18].

Most fissure occurred in the posterior part of the anus more than the anterior part (28 vs 7). Studies had indicated that two third of fissures occur in the posterior location and those in anterior location occur more in young females [19,20].

Few patients with anal fissure in this series were chronic smokers not more than the prevalence of smoking in the general population and smoking as indicated also by other studies does not contribute to this condition [1].

We evaluated the patients for absence of pain during defecation and the complete healing of the wound area, 3 weeks and 3 months after the operation to see the short-term and long term-cure rates. We found that 32 out of 25 had complete short-term cure, while 30 out of 35 had long-term cure after 3 months, meaning that we had 5 case failure and these cases were sent for other options. Few studies had done procures similar to this study. A study done in Saudi Arabia indicated that topical anesthetics and local anesthesia can be used effectively for lateral sphincterotomy and provides an alternative to general anesthesia [21].

The long-term outcomes, in terms of complete cure, for lateral internal sphincterotomy are very good (96%) but on the expense of higher fecal incontinent rate which in some cases may be permanent [22]. The success rate in this series was 95%, a little bit lower than the classical surgery.

The anal continent results of this study were very good as only 3 patients shown in Table number 2 had incontinence only for flatus and the current study used the newly developed score published in the GUT [21] among many other. Fecal incontinence occurs in 10% after lateral internal sphincterotomy [23], while it occurred in only 8% of this series and the incontinence occurred only for flatus.

## Conclusion

Anal fissure occurs in young persons more in females and commonly in posterior location of anal verge. Minimally invasive fissurectomy under local anesthesia with the help of conscious sedation can be a good alternative to classical lateral internal sphincterotomy which has higher anal incontinent rates.

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