

## CLOSED LATERAL INTERNAL ANAL SPHINCTEROTOMY UNDER LOCAL ANESTHESIA FOR TREATMENT OF CHRONIC ANAL FISSURE: OUR 10 YEARS EXPERIENCE

Md. Saiful Hoque<sup>1\*</sup> Tahmina Akhter Chowdhury<sup>2</sup> Md. Saiful Islam<sup>3</sup> Khondoker A. K. Azad<sup>4</sup>

### Abstract

**Background:** Chronic anal fissure is one of the most frequent proctological disorders worldwide. Closed Lateral Internal Sphincterotomy (LIS) is one of the therapeutic options accepted as the treatment of choice for Chronic Anal Fissure (CAF) as it reduces the hypertonia of the internal anal sphincter, decreases anal pain, and allows the fissure to heal. LIS can be done under general anesthesia or local anesthesia. Aim of this study was to see the post operative outcome of closed LIS done under local anaesthesia. **Materials and methods :** This retrospective study was conducted in Department of Surgery of Chattogram Medical College hospital and some private hospitals of Chattogram city from January 2008 to December 2017. Total 550 patients of CAF who underwent closed LIS under local anesthesia were included. Atypical fissures associated with other disease were excluded. **Results:** The mean duration of hospital stay was  $3.38 \pm 1.2$  hours. Sentinel skin tag was excised in 296 patients. The fissure was posterior in 73.63% patients and anterior in 7.81% patients. Recurrence was noted in 1.3% patients within four months. 63.27% patients experienced normal continence except occasional lack of fecal control postoperatively and only one patient developed gross incontinence of solid and liquid stool. **Conclusion :** This study concluded that closed LIS under local anaesthesia is the procedure of choice for management of CAF as it is cost effective and time saving.

1. Associate Professor of Surgery  
Chattogram Medical College, Chattogram.
2. Assistant Professor of Pediatric Surgery  
Chattogram Medical College, Chattogram.
3. Resident (General Surgery) Department of Surgery  
Chattogram Medical College Hospital, Chattogram.
4. Professor of Surgery (Retired)  
Chattogram Medical College, Chattogram.

**\*Correspondence:** Dr. Md. Saiful Hoque  
E-mail: saiful\_surgery@yahoo.com  
Cell: 0155 6322867

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### Key words

CAF; LIS; Local anaesthesia.

### Introduction

Anal fissure is an ulcer-like, longitudinal tear in the squamous epithelium of the anal canal, typically running distal to the dentate line up to the anal verge. Anal fissure occurs predominantly in the midline and most commonly posterior (90%) with 10% anterior. After childbirth, women tend to have an anterior fissure, and less than 1% of patients have fissure both in the anterior and posterior positions<sup>1,2</sup>. Anal fissures usually manifest with proctalgia during and after defecation, as well as bright red rectal bleeding on wiping. They are usually associated with spasm of the internal anal sphincter, which may lead to local ischemia and impaired healing<sup>3,4</sup>. Most anal fissures are acute and resolve spontaneously or with conservative medical management in 10-14 days. The fissure is said to be chronic if it is present for longer than 6 weeks. Chronic Anal Fissure (CAF) is accompanied by an external skin tag and hypertrophied anal papilla<sup>5</sup>. Most CAFs require surgical interventions. Surgery, although costly and not without risks, has been consistently shown to be superior to pharmacological management and options include Lateral Internal Sphincterotomy (LIS) either open or closed, fissurectomy and anal advancement flaps (Anoplasty)<sup>6,7</sup>.

LIS remains the surgical treatment of choice for chronic anal fissures. Multiple studies and a recent Cochrane review showed that LIS is superior to uncontrolled manual anal dilatation, yielding superior healing rates with less incontinence<sup>7-11</sup>. LIS can be carried out under local or general anesthesia. LIS leads in most cases to quick healing of chronic fissure, and has a low recurrence rate. However, the main limitation of this technique is the risk of anal incontinence (Flatus and /or faecal) which can be as high as 14%<sup>12-14</sup>.

This study aimed to determine the healing rate of CAFs after subcutaneous LIS under local anesthesia, total hospital stay, the average time to fissure healing, the recurrence rate and also to determine the incontinence rate.

### Materials and methods

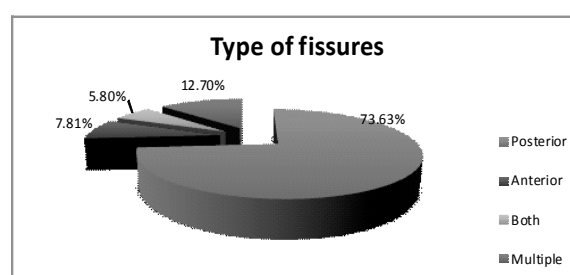
This was a retrospective multicenter (Chattogram Medical College Hospital and some private hospital of Chattogram city) study from January 2008 to December 2017. During this period 550 patients of CAF (Anal fissure with >6 weeks symptom duration) who underwent closed LIS under local anesthesia with 6 months follow up were included. Age range was 20-65 years. Data were collected from operation note and post operative order of patients file and also from OPD register book. Necessary permission was obtained from the proper authority.

Atypical fissures associated with inflammatory bowel disease, malignancy, fistula in ano, perianal abscess, Irritable bowel disease, and previous history of anorectal surgery were excluded. Diagnosis was confirmed by digital rectal examination. Sigmoidoscopy was done in all patients to exclude other pathologies.

Surgical procedures were carried out in the lithotomy position under local anesthesia (2% Lignocaine, 8-10 c.c) using 10 cc disposable syringe with 25G needle. A stab incision was made with a Bard Parker blade no 15, either into the intersphincteric groove or into the submucosa. Skin tag was also excised if present. The skin stab incision was left open and pressure bandage was applied for several hours. Pre operative ciprofloxacin (500mg) and metronidazole (500mg) was given and as pain killer tab diclofenac sodium was given to all patients. Patients were discharged 1-2 hours after procedure with oral Ciprofloxacin and Metronidazole, painkiller, sitz bath for one week. The patients resumed eating a high fiber diet by mouth on the day of the operation. Laxatives or stool softeners were given for 2 weeks. Patients were followed up to assess any complications of these procedures (Pain, infection or abscess formation, incontinence, soiling, and recurrence). Patients were advised to come for follow up once a week for 2 weeks and then every 2 weeks for another 6 weeks to monitor fissure healing. They were subsequently followed up monthly by examination for next 3 months. In each follow up patient was asked about pain, incontinence/soiling, and rectal examination was done to assess wound healing and recurrence. Recurrence of pain and appearance of fissures were considered as relapses. Browning and Park's classification was used for assessment of post-operative incontinence of feces<sup>15</sup>.

### Results

Among 550 patients of this study, 362(65.8%) were male and 188 (34.2%) were female with a age ranging from 20 to 65 years. Male to female ratio was 1.9:1. All patients underwent Closed LIS under local anesthesia as outpatient procedure. The mean duration of hospital stay was  $3.38 \pm 1.2$  hours. Sentinel skin tag was excised in 296 (53.81%) patients. The fissure was posterior in 405(73.63%) patients, anterior in 43 (7.81%) patients while both anterior and posterior fissure was found in 32 (5.8%) patients and multiple in 70 (12.7%) patients.



**Fig 1:** Percentage of different types of fissure

Most of the patients underwent rapid healing and resolution of their symptoms. Although delayed (>2 weeks) wound healing was seen in 31 (5.6%) patients. Recurrence was noted in 7 (1.3%) patients within four months. There was no perianal abscess, haemorrhoidal throm-bosis or urinary retention. None of these patients required reporting in emergency or admission in hospital due to complications after operation.

Among the 550 patients, 497 (90.36%) patients complained no pain after 1 week, 46 (8.36%) patients complained occasional mild pain and/or pruritis during defecation. But 1.3% patients experienced severe pain like preoperative period; in which recurrence was noted. All recurrent cases were managed conservatively.

Postoperative incontinence or soiling was assessed by Browning and Park's classification for incontinence which is shown in table I.

**Table 1:** Category of incontinence according to Browning and Park's classification

Category of incontinence	No of patients (%)
Category A	348 (63.27)
Category B	176 (32)
Category C	25 (4.5)
Category D	1 (0.18)

### Discussion

At first in 1818, Boyer suggested sphincterotomy as a treatment of anal fissures<sup>16</sup>. Later on, many surgical techniques ie. anal dilation, fissurectomy, posterior and lateral sphincterotomy and advanced flap have been practiced for management of CAF<sup>17</sup>. LIS has been regarded as the gold standard for the treatment of CAF<sup>18,19</sup>.

Men outnumbered women, with a ratio of 1.9:1 in this study. Similar sex distributions have been observed in other studies. Nahas et al reported that 70% of their patients with CAFs were men and 30% were women, with a ratio of 2.3:1. Melange et al reported that 55.2% of their patients with CAFs were men and 47.8% were women, with a ratio of 1.15:1. Shafiq and Nadeem reported a much larger male to female ratio of 5.1:1<sup>20-22</sup>.

Most of the patients (73.63%) of this study presented with posterior midline anal fissure. Other positions seen were anterior midline (7.8%), multiple (12.7%) and both anterior and posterior position (5.8%). A number of previous studies have established the posterior midline to be the most common location<sup>1,2,23,24</sup>.

In this study delayed wound healing was reported in 5.6%. But Gupta V et al reported no case of delayed or absent healing<sup>23</sup>.

Duration of hospital stay was only several (3.38 ± 1.2) hours in our study. But in other study it was several days<sup>22,23</sup>. This huge time difference is due to difference in anesthesia. We did all operations under local anesthesia which needed very minimum hospital stay; only 1-2 hours. There was no need of preoperative or postoperative starvation. N Ahmad also recommended subcutaneous closed LIS under local anesthesia as outpatient procedure<sup>25</sup>. Due to shortened hospital stay, patients' treatment was reduced and they returned to their work earlier.

More than half of the patients (53.81%) had sentinel tag which was excised during sphincterotomy. Sentinel piles were present in all patients in another study<sup>23</sup>. But Bhavinder reported sentinel piles in 71% patients<sup>26</sup>.

90.36% of our study population became pain free within one week. In a study of Bhavinder there was tolerable pain postoperatively up to one week but patients were comfortable by taking oral analgesics<sup>26</sup>.

In our study recurrence was noted in 1.3% patients while in other study recurrence rate was 0%-6%<sup>23,27</sup>.

According to Browning and Park's classification of incontinence, 63.27% of our study population had normal continence (Category A) postoperatively. 32% of our study population experienced incontinence of flatus (Category B) and 4.5% patients experienced Intermittent small volume fecal leakage (Category C). Gupta reported no postoperative incontinence or soiling in any patient. But in some other studies incontinence was 9% to 14%<sup>13,14,23,28</sup>.

### Conclusion

From this study it can be concluded that closed LIS under local anaesthesia is the procedure of choice for management of CAF because it is effective and cures the disease in nearly all patients. Moreover this procedure is cost effective and time saving. The complications are minimal and negligible. Randomized clinical controlled trials can be recommended.

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### Contribution of Authors

MSH-Conception, design, acquisition of data, drafting and final approval.

TAC-Acquisition of data, drafting and final approval.

MSI-Design, analysis and final approval.

KAKA-Interpretation of data, critical revision and final approval.

### Disclosure

All the authors declared no competing interest.

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