

The Outcome of One Step Controlled Lateral Internal Sphincterotomy in the Treatment of Chronic Anal Fissure

Dr. Quazi Habibullah^{1*}, Dr. Zahidul Haque², Dr. Mohibul Aziz³, Dr. Guljar Ahmed⁴, Dr. Md. Morfudul Islam⁵

¹Assistant Professor, Department of Surgery, National Institute of Cancer Hospital & Research Center, Mohakhali, Dhaka, Bangladesh

²Retired Professor of Colorectal Surgery, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh

³Head and Professor of Surgery, Ibn Sina Medical College Hospital, Dhaka, Bangladesh

⁴Professor, Head of Department, General Surgery, North East Medical College, Sylhet, Bangladesh

⁵Assistant Professor, Department of Surgery, Abdul Malek Ukil Medical College, Noakhali, Bangladesh

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*Corresponding author: Dr. Quazi Habibullah

Abstract

Original Research Article

Objective: In this study our main objective is to evaluate the outcome of one step controlled lateral internal sphincterotomy in the treatment of chronic anal fissure. **Method:** This quasi experimental study was carried out at different Private Hospital in Dhaka from February 2015 to January 2016 where 85 patients were included in this study. Grouping was done non randomly. Informed consent was obtained from all patients after explanation of the nature of anal fissure and possible treatment. **Result:** During the study, maximum number was found in the age group of 31-40 in group A and B. Also, perfect continence (Score 0) was found 35 (77.8%) and gas incontinence (Score 1-3) 10 (22.2/o) in Group A. In group-A 4.1% patients complied about recurrence of the diseases where as in group-B it was only 1%. **Conclusion:** From our result we can conclude that, one step controlled lateral internal sphincterotomy is the best choice for management of chronic anal fissure. Further study is needed for better outcome.

Keywords: One step controlled lateral internal sphincterotomy, anal fissure, Chronic.

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INTRODUCTION

Anal fissure is one of the most common anorectal conditions encountered in clinical practice. A split in the mucosa extending from the anal verge towards the dentate line is seen as an abnormality. It was first recognized as a disease in 1934 and currently affects 10% of patients attending proctology clinics [1].

The complaint is seen commonly in young adults with an approximately equal incidence in both sexes. Anal fissure may be classified as acute or chronic according to duration of symptoms and typical morphologic appearances. The majority of acute fissure heal spontaneously but a proportion become chronic and this is usually defined as a persistence of symptoms beyond 6 weeks or by the presence of visible transverse internal anal sphincter fibers at the base of a fissure.

The first proposed treatment of anal fissure was internal sphincterotomy. After that, maneuver was to divide the lower half of the muscle by an incision in the midline of the posterior wall of the anal canal

usually through the fissure itself, the resulting wound being left open to heal by granulation.

To minimize postoperative disturbance of continence Cho first introduced controlled sphincterotomy in 2005 at Korea. He divided the internal sphincter in step procedures according to the degree of anal stenosis measured by anal calibrators scaled in 1 mm diameter increments. In this study our main objective is to evaluate the outcome of one step controlled lateral internal sphincterotomy in the treatment of chronic anal fissure.

OBJECTIVE

General Objective

- To estimate the outcome of one step controlled lateral internal sphincterotomy in the treatment of chronic anal fissure.

Specific objective:

- To identify early and late anal incontinence to flatus and feces by Cleveland clinical

incontinence in groups A and B following sphincterotomy

- To detect recurrence of the diseases in patients.

METHODOLOGY

Study Type: This was aquasi-experimental study.

Place and period of the study: This study was conducted at different Private Hospital in Dhaka from February 2015 to January 2016.

Study population: Patients with chronic anal fissure admitted in different private hospital in Dhaka City according to inclusion and exclusion criteria was included in the study.

Inclusion Criteria

- Age-18 to 80 years.
- Gender- Both male and female.
- Patient having painful defecation and difficulty in passing stools with or without bleeding per rectum for more than 6 weeks with failure of established medical treatment.

Exclusion Criteria

- Patients aged below 18 years and more than 80 years.
- Patients with a history of fecal incontinence or other anorectal disease (such as Abscess, Haemorrhoid, Fistula etc)
- Patient who underwent any other anorectal procedure at the time of internal sphincterotomy.
- Fissure present in other site rather than midline.
- Anal dilatation under 25 mm or above 31 mm were excluded.

Sample size: 85 cases were included in this study.

Sample Size Determination

Single proportion n = Proportion
 n_0 = Null hypothesis value u , v “as bellow

Sample size =

$$(n - it J^l)$$

u = One-sided percentage point of the normal distribution corresponding to 100% the power, e.g. if power 80%, $u = 0.842$

v = Percentage point of the normal distribution corresponding to the (two-sided) significance level

e.g. if significance level = 5%, $v = 1.96$

Here,

$$7T = 0.05 \quad 7l_0 = 0.01$$

$$\text{Sample size} = 89.55 \ll 90.$$

Outcome Variable

- Anal incontinence to flatus and feces by Cleveland clinical incontinence score.
- Recurrence of diseases.

METHOD

All patients with chronic anal fissure admitted into Surgery Department of DSMMU according to inclusion and exclusion criteria were enrolled in this study. A total of 90 cases were selected in this study. Out of which 45 patients underwent conventional sphincterotomy was considered as group A and 40 patients underwent sphincterotomy upto the fissure apex was considered as group B. 5 patients were excluded from the Group B due to anal dilatation was under 25 mm and above 35 mm.

Finally 85 patients were included in this study. Grouping was done non randomly. Informed consent was obtained from all patients after explanation of the nature of anal fissure and possible treatment.

In conventional lateral internal sphincterotomy group patient was placed in lithotomy position after giving Sub Arachnoid Block (SAB). A circumanal incision was made just distal to the intersphincteric groove on the left lateral aspect of the anus after inserting an Eisenhammer speculum. The endoderm was lifted from the underlying internal sphincter and the intersphinctric plane was developed. The full thickness of the internal sphincter was divided from its lower to the level of the dentate line.

In one step controlled lateral internal sphincterotomy group patient was placed in lithotomy position after giving SAB. Then anal stenosis was evaluated in unstressed condition using conical calibrator scaled in 1 mm diameter increments. There were three different sizes of anal calibrator: 5 to 15 mm, 16 to 30 mm and 27 to 43 mm.

Data collected both from primary & secondary survey by both qualitative & quantitative method and recorded methodically in the data collection sheet designed for the study. Data was collected by researcher himself and by a qualified doctor nominated by the researcher who was blind to the hypothesis.

Statistical Analysis

Qualitative data are summarized by ratio and percentage. Qualitative data are summarized by mean and standard deviation (SD). Chi square (X^2) and Unpaired t-test were used to assess the significance of Quantitative data respectively $P < 0.05$.

RESULT

In Figure-1 shows age distribution of the patients where in Group B (one step controlled group) the mean age was 35.2(SD 12 1) years with ranged

from 18 to 72 years. Maximum number was found in the age group of 31-40 in both groups. The following figure is given below in detail:

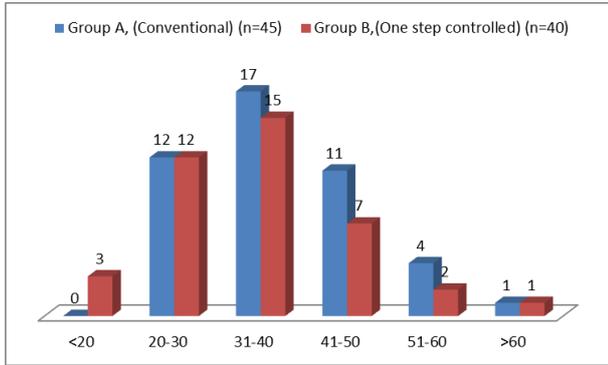


Fig-1: Age Distribution of the patients

In Figure-2 shows gender distribution of the patients where in group A female patients percentage was 2.24% lower than male percentage whereas in group B female patients percentage was 30% higher than male. The following figure is given below in detail:

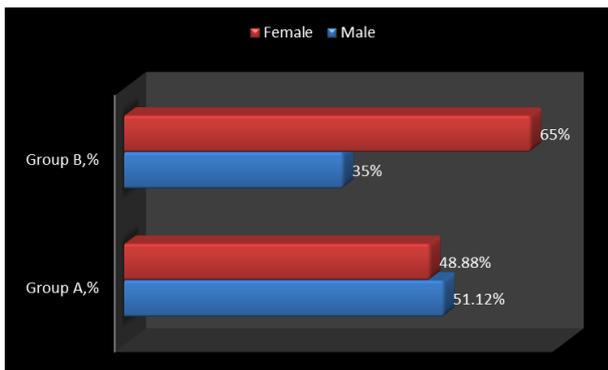


Fig-1: Gender distribution of the patients

In Table-1 shows distributions of patients according to anal incontinence to flatus and feces by Cleveland clinical incontinence in groups A and B following sphincterotomy where in group-A found that, perfect continence (score 0) 5 (11.1%) and gas incontinence (Score 1-3) 40 (88.9%) during early postoperative period (<2 weeks). In Group B (one step controlled group), perfect continence (Score 0) was observed 20 (50.0%) and gas incontinence (Score 1-3) 20 (50.0%). The following table is given below in detail:

Table-1: Distributions of patients according to anal incontinence to flatus and feces by Cleveland clinical incontinence in groups A and B following sphincterotomy.

Early incontinence (<2 weeks)	Group A (Conventional) (n=45)	Group B (One step controlled) (n=40)	P value
0	5	20	0.001 ^s
1-3	40	20	

In Table-2 shows late anal incontinence to flatus and feces by Cleveland clinical incontinence in groups A and B following sphincterotomy where perfect continence (Score 0) was found 35 (77.8%) and gas incontinence (Score 1-3) 10 (22.2%) in Group A. The following table is given below in detail:

Table-2: Late anal incontinence to flatus and feces by Cleveland clinical incontinence in groups A and B following sphincterotomy

Late incontinence (>2 weeks)	Group A (Conventional) (n=45)	Group B (One step controlled) (n=40)	P value
0	35	39	0.022 ^s
1-3	10	1	

In Table-3 shows distribution of the patients according to recurrence of the diseases where in group-A 4.1% patients complied about recurrence of the diseases. The following table is given below in detail:

Table-3: Distributions of the patients according to recurrence of the diseases

Variable	Group A, %	Group B, %
Recurrence	4.1%	1%
no recurrence	95.9%	99.9%

DISCUSSION

In this current study it was observed that the mean age was 39.2(SD 12.4) years in Group A (conventional group) and 35.2(SD 12.1) years in Group B (one step controlled group). Most of the patients was found in the 4th decade in both groups. In one study mean age was 34.6(SD 9.7) years in conventional group and 35.1 (SD 11.3) years in controlled group, which is consistent with the current study [2].

On the other hand, another has observed higher mean age in their study patients, which were 43 (SD 2.5) years (range 22-65) years in conventional group and 48.2(SD 4.7) years (range 25-66) years in controlled group, which may be due to increased life expectancy, geographical area and racial influences have significant impacts on anal fissure [3].

Regarding the gender distribution it was observed that 43.5% were male and 56.5% were female in the whole study patient, which indicates that chronic anal fissure more frequent in female and male female ratio was almost 1:1.3, which is closely resembled with one study, where the investigators found male female ratio 1:1.9 [2] however In Egypt, another report showed male predominant in their study that was 1.2:1, which may be due to female had less access in health service in Egyptian women [3].

Patients developed incontinence of feces and leakage of stool in this study. Regarding the

postoperative early incontinence it was observed this current series that perfect continence was found 11.1% and continence to flatus 88.9% in Group A (conventional group) during early postoperative period (<2 weeks) and in Group B (one step controlled group), perfect continence was observed 50.0% and incontinence to flatus 50.0%, which is similar with one study. They found that in early postoperative period perfect continence in 83.3% and 16.7% had incontinence to flatus in conventional group. In controlled group it was found 95.8% perfect continence and 4.2% incontinence to flatus ($p<0.05$) [3].

During late postoperative period (>2 weeks) perfect continence was found 77.8% and incontinence to flatus 22.2% in Group A (conventional group). Similarly, in Group B (one step controlled group) perfect continence was observed 97.5% and 2.5% incontinence to flatus, which indicates that Group B (one step controlled group) is significantly ($p<0.05$) better than Group A (conventional group) regarding the postoperative late incontinence, which is similar with one study. They observed that in late postoperative period 87.5% had perfect continence and 12.5% incontinence to flatus in conventional group and in

controlled group it was 48 and none respectively ($p<0.05$) [3].

CONCLUSION

From this study we concluded one step controlled lateral internal sphincterotomy is better, than conventional lateral internal sphincterotomy for less incidence of early and late anal incontinence to flatus and feces and insignificant incidence of recurrence.

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