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A comparative study between open and closed lateral internal sphincterotomy using *Cataract knife* in patients with chronic fissure in ANO

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Abstract

Introduction: Anal fissure is one of the commonest and painful proctologic diseases encountered in routine clinical practice causing considerable morbidity and reduction in quality of life. There are medical and surgical treatment options for anal fissure. The chronic fissures behave more differently in that way they are more persistent and relapsing than the acute fissures which are self-healing.

Aims and Objectives: To compare the outcomes of open lateral internal sphincterotomy and closed lateral internal sphincterotomy using cataract knife in terms of duration of surgery, postoperative pain, faecal and flatus incontinence, duration of hospital stay.

Materials and Methods: In this prospective study, 100 patients admitted with Chronic Fissure in Ano were randomly divided into Group A {Open Lateral Internal Sphincterotomy} And Group B {Closed Lateral Internal Sphincterotomy Using Cataract Knife} with 50 patients in each group. Regular follow up was done at weekly intervals for four consecutive weeks and biweekly for subsequent 2months.

Results: In our study most of the patients fall under the age group of 25 to 50 years. And out of 100 patients, 46patients were female and 54 were male patients. Duration of surgery, postoperative pain, fecal and flatus incontinence, duration of hospital stay were better among patients who underwent closed lateral sphincterotomy when compared with open lateral sphincterotomy patients group.

Conclusion: In our study it was observed that GROUP B has better outcomes in terms of duration of surgery, postoperative pain, fecal and flatus incontinence, recurrence when compared with GROUP A patients. Thus the present study concludes that the closed lateral sphincterotomy using cataract knife should be used as the primary treatment of choice in the management of chronic fissure in ano.

Keywords: Chronic fissure in ano, closed lateral internal sphincterotomy, open lateral internal sphincterotomy, cataract knife.

Introduction

- Anal fissure is a common condition encountered by a surgeon in outpatient department. Most of the cases are acute and majority of them heal spontaneously. But few cases will progress to chronic condition.
- Anal fissure is a longitudinal tear or crack in the skin of the anal canal.
- Acute fissure usually selfheal within few weeks. If an anal fissure does not heal in at least 6 weeks, it may be recognized as chronic fissure

A chronic fissure may have one or all of the following features

1. Due to the chronicity of the ulceration, the internal sphincter fibers may be exposed at the base of the ulcer.
2. A Skin Tag may be seen at the distal margin of the Fissure, called as the Sentinel pile.
3. At the proximal end there is the Hypertrophied Anal Papilla.

Treatment focuses on breaking the cycle of pain, spasm, and ischemia thought responsible for the development of anal fissure. Medical treatment with topical Diltiazem and Bethanechol helps to reduce anal sphincter pressure and achieve fissure healing to a similar degree reported with nitrates, but without side effects. Operative procedures commonly used for chronic anal fissure are anal dilatation, open lateral sphincterotomy, closed lateral sphincterotomy, posterior midline sphincterotomy, and less commonly, dermal flap coverage for the fissure.

Lateral internal sphincterotomy remains the procedure of choice for chronic fissure in ano

Aims and objectives of the study

To compare the outcome of open lateral internal sphincterotomy and closed lateral internal sphincterotomy using cataract knife in terms of postoperative pain, faecal and flatus incontinence, hematoma formation, infection, duration of hospital stay, and recurrence.

Materials and Methods

1. Definition of Study Subject: Patients with symptoms of fissure in ano for more than 6 weeks will be considered as having chronic fissure in ano and will be taken for comparative study on randomized trial.

2. Inclusion and exclusion criteria: All inpatients admitted in KIMS Hospital aged >18years with chronic fissure in Ano were included whereas patients with fissure with hemorrhoids and fistula, fissure abscess, multiple fissures, cardiac problems and immunocompromised state, Fissure secondary to specific diseases like tuberculosis, Crohn’s disease etc. were excluded from the study.

3. Sample Size: All patients satisfying inclusion criteria admitted in K.I.M.S. Bengaluru. This study included 100 patients.

- Type of Study – Prospective Randomized Study
- Study period – 2 YEARS {NOVEMBER 2018 TO OCTOBER 2020}

4. Method of Collection of Data: 100 patients with chronic fissure in ano were randomized into two groups. Group A patients {min 50} will undergo open lateral internal sphincterotomy and Group B patients {min 50} will undergo closed lateral internal sphincterotomy using cataract knife. Follow up for a period of 3 months

5. Statistical Analysis Used: Descriptive statistics namely mean, standard deviation, percentage wherever applicable. To compare the open and closed lateral internal sphincterotomy regarding:

1. Postoperative pain

2. Duration of hospital stay
3. Post-operative fecal and flatus incontinence.
4. Infection and hematoma formation.
5. Recurrence

Results

Demographic Data

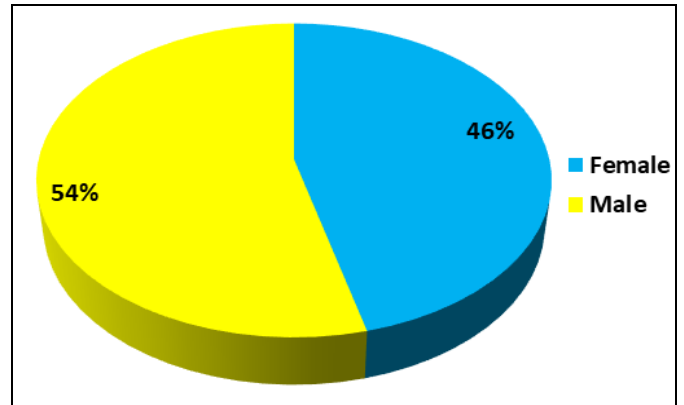


Fig 1: Gender

Our study had a sample size of 100 patients of which 54 patients were males and 46 were females with a ratio of 1.15:1.

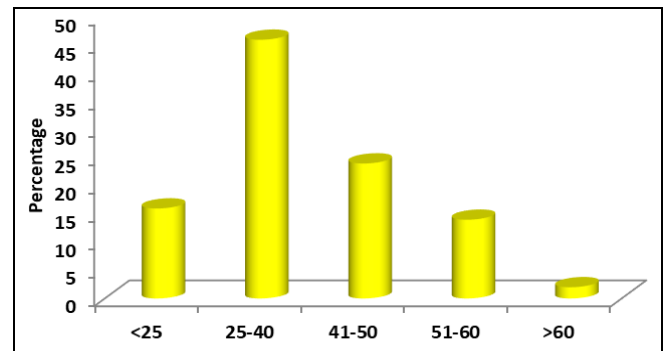


Fig 2: Age in year

Most patients were seen to lie within the age group of 25 to 50 years.

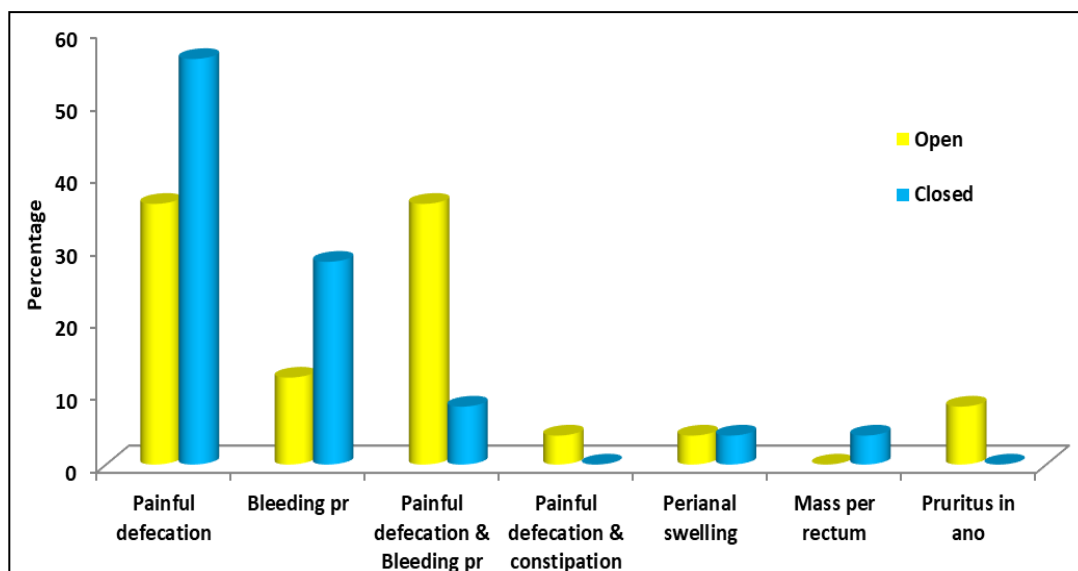


Fig 3: Mode of Presentation

Painful defecation was the most common mode of presentation in our study accounting to 36% of patients in open sphincterotomy group and 56% of those in closed sphincterotomy group.

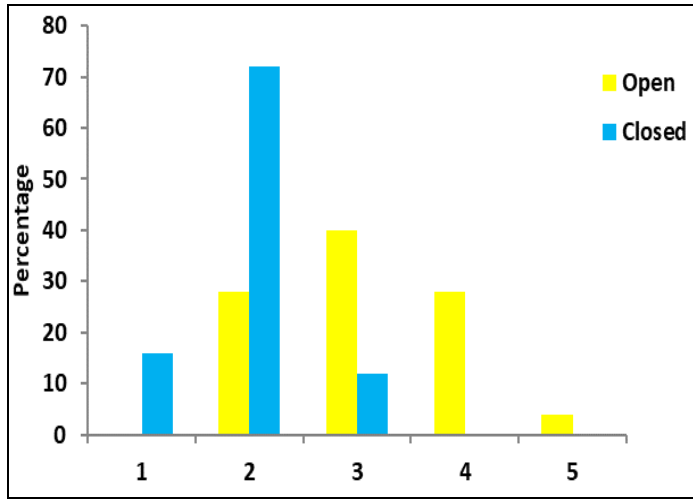


Fig 4: Duration post-operative hospital stay

Duration of post-operative hospital stay	Open	Closed	Total
1	0(0%)	8(16%)	8(8%)
2	14(28%)	36(72%)	50(50%)
3	20(40%)	6(12%)	26(26%)
4	14(28%)	0(0%)	14(14%)
5	2(4%)	0(0%)	2(2%)
Total	50(100%)	50(100%)	100(100%)

It was seen in our study that majority of the patients who underwent closed sphincterotomy were discharged from the hospital on the 2nd post-operative day and all the patients who had open sphincterotomy were discharged by the end of 3rd day. However, majority of the patients who underwent open sphincterotomy were discharged on the 3rd day and 32% of the patients who had open sphincterotomy endured a stay longer than 3 days in the hospital.

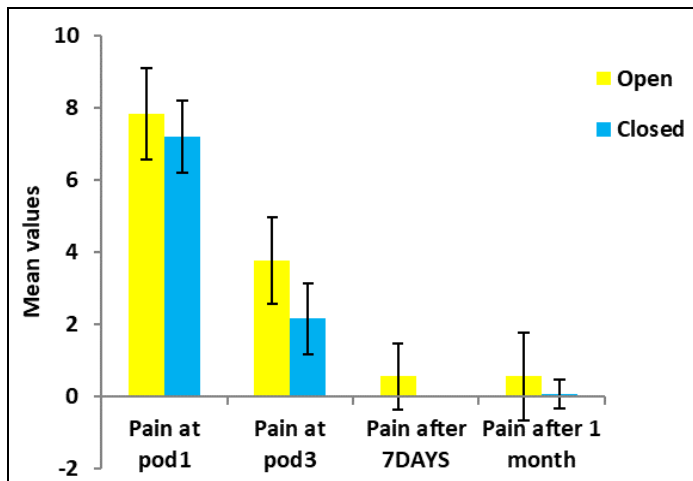


Fig 5: Pain Distribution in Two Groups of Patients Studied

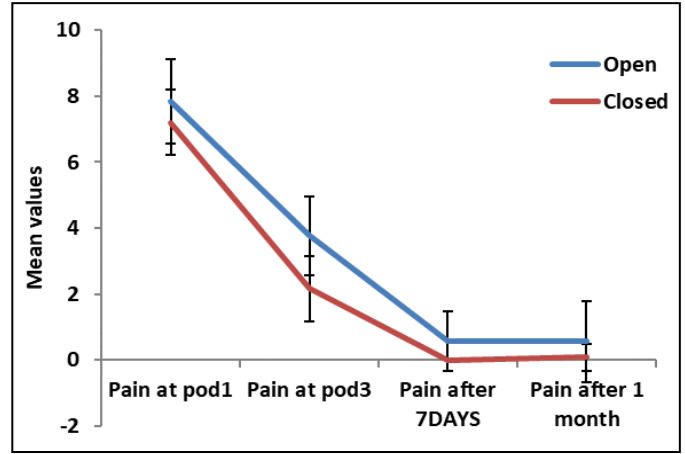


Fig 6:xxxxx

- Lesser number of patients in closed sphincterotomy group [30 patients (60%)] reported a pain severity of 7-10 in comparison to those in the open sphincterotomy group 38 patients [76%] on post-operative day 1.
- It was seen that 76% of patients in closed sphincterotomy group reported a pain severity of 1-3 against the same number of patients in the open sphincterotomy group who reported a higher pain severity of 4-6. Hence, majority of patients in the closed sphincterotomy group reported less intense pain on post-operative day 3 than their counterparts in open sphincterotomy group with significant P value.
- On post-operative day 7, all patients who had closed sphincterotomy reported absence of pain whereas only 36 patients (72%) in the open sphincterotomy group reported having no pain and 14 patients (28%) reported having mild pain of 1-3 in severity.

Complications Distribution in Two Groups of Patients Studied

Variables	Open	Closed	Total	P Value
Fecal Incontinence				
• No	46(92%)	50(100%)	96(96%)	0.490
• Yes	4(8%)	0(0%)	4(4%)	
Flatus incontinence				
• No	44(88%)	50(100%)	94(94%)	0.235
• Yes	6(12%)	0(0%)	6(6%)	
Infection				
• No	46(92%)	50(100%)	96(96%)	0.490
• Yes	4(8%)	0(0%)	4(4%)	
Hematoma formation				
• No	48(96%)	50(100%)	98(98%)	0.312
• Yes	2(4%)	0(0%)	2(2%)	
Total	50(100%)	50(100%)	100(100%)	

None of the patients undergoing closed sphincterotomy developed post-operative complications whereas, 4 patients (8%) developed fecal incontinence, 6 patients (12%) developed flatus incontinence, 4 patients (8%) developed infection and 2 patients (4%) developed hematoma after the operation in open sphincterotomy group.

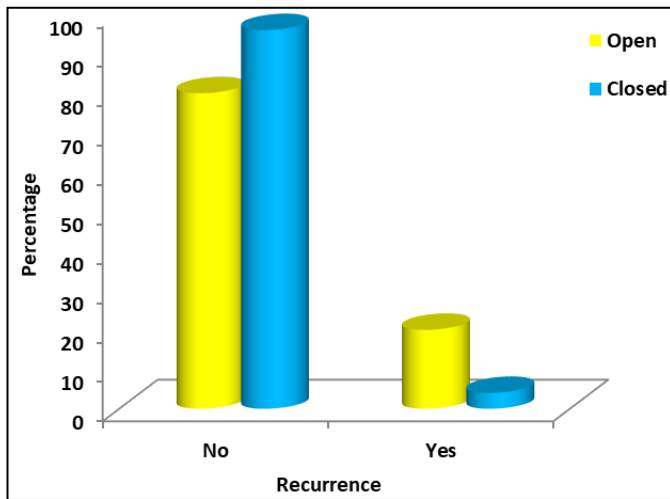


Fig 7: Incidence of recurrence

2 patients (4%) in the closed sphincterotomy group developed recurrence of fissure in ano whereas 10 patients (20%) in the open sphincterotomy group developed recurrence with a total of 12 patients (12%) developing a recurrence in our study.

Discussion

In our study, totally we had 100 patients, in which 46 patients (46%) were aged between 25-40 years (mean age 38 years). it is comparable to other studies Anandaravi *et al.* where most of the patients were aged between 30 -45 years.

In our study, males were 54% and females were 46% with a sex ratio of 1.17: 1, when compared to Anandaravi *et al.*, the sex ratio was 2.12:1 and Melange *et al.*, it was 1.15:1 and our study was comparable to Melange *et al.*

In our study, it was found that, the most common complaints were painful defecation (46%), bleeding per rectum (20%), mass per rectum (6%), and pruritus ani (4%) which was comparable to study done by Hanel *et al.*, where The most common presentations were painful defecation (45.4%) and bleeding PR (35.7%).

In our study, 64 patients (64%) presented with posterior fissure in ano, 18 patients (18%) presented with anterior fissure and 18 patients (18%) had both anterior and posterior fissure in ano and our study was comparable to other studies done by Mazier *et al.*, Cushieri *et al* and Nahas *et al.*

In our study, in patients undergoing closed lateral internal sphincterotomy using cataract knife, 44 (88%) out of 50 patients were free of symptoms on POD2 while in open lateral internal sphincterotomy, 34 out of 50 patients (68%) were free of symptoms on POD 2, which suggests better outcome in our study when compared to study done by Matikainen *et al.* where 50% of patients in closed internal sphincterotomy were free of symptoms on POD2.

In our study, patients who underwent closed lateral internal sphincterotomy had no flatus or fecal incontinence, hematoma formation and infection whereas among those who underwent open lateral internal sphincterotomy 4 patients (8%) had fecal incontinence, 6 patients (12%) had flatus incontinence, 4patients (8%) had infection and 2 patients (4%) had hematoma formation. And most of the patients (88%) who underwent closed lateral internal sphincterotomy were discharged on POD 2, whereas those underwent open lateral internal sphincterotomy were discharged on POD 4 (96%).

In our study, among those who underwent closed lateral sphincterotomy, 2 patients (4%) had recurrence which was

encountered during initial stage of our study and among those underwent open lateral internal sphincterotomy, 10 patients (20%) had recurrence and these results were comparable with other studies done by Pernikoff, Salvati, Eisentat, Kortbwwk, Langevin, and Khoo.

Conclusion

In our study, we compared closed lateral internal sphincterotomy using cataract knife with open lateral internal sphincterotomy in the management of chronic fissure in ano.

In this technique of closed lateral internal sphincterotomy, we didn't encounter any faecal or fecal incontinence, which is the most distressing aspect for any patient. This technique was comparatively pain free and the duration of hospital stay was less attributing to decreased morbidity.

We had 2 cases of recurrence (4%) which was encountered in the initial stage of study.

We would like to conclude that closed lateral internal sphincterotomy using cataract knife is a treatment of choice for treating chronic fissure in ano.

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