FREQUENCY OF POST-OPERATIVE FECAL INCONTINENCE AND HEALING RATE IN PATIENTS WITH OPEN AND CLOSED LATERAL INTERNAL ANAL SPHINCTEROTOMY

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ABSTRACT

OBJECTIVES

This study aims to compare the frequency of fecal incontinence and healing rate in patients treated with Open Internal Anal Sphincterotomy (OIAS) and Closed Lateral Internal Anal Sphincterotomy (CLIAS).

METHODOLOGY

This randomized control trial was carried out in the Department of Surgery Hayatabad Medical Complex, Peshawar Pakistan from Feb 2019 to Feb 2020. Eighty-four patients were assigned to the open method in Group B while eighty-four patients were allocated to the closed method in Group A (using blade 11) through the randomized control trial method. Fecal incontinence and healing rate were observed on the 7th postoperative day. SPSS 23.0 software was used to analyse the data.

RESULTS

In group A out of a total of 84 patients, 96% of patients were in category A, 4% of patients were in category B, and no patients were in categories C and D. In group B out of 84 patients, 96% of patients were in category A while 4% patients were in category B and no patients were in category C and D. The total faecal incontinence in Group B (open method) was 21% while total fecal incontinence in Group A (closed method) was only 4% that is a clear difference between the two groups. In group A (closed method) out of 84 patients, 2 patients (2.38 %) showed delayed healing while 82 patients (97.61 %) showed normal healing. In group B (open method) 7.4% of patients showed delayed healing with a significance p level of 0.04 while 92.85 showed normal healing.

CONCLUSION

Fecal incontinence was less in closed Lateral Anal Sphincterotomy due to the use of blade 11 while it was higher in open internal anal sphincterotomy. Similarly, the healing rate was significantly higher in the closed method while delayed healing was seen in the open method.

KEYWORDS: *Sphincterotomy, Closed Method, Open Method, Fissure, Healing, Fecal Incontinence*

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INTRODUCTION

Fissure is a highly common anal disease that is responsible for significant pain and discomfort in the life of the patient. In this disease, the patient feels a high degree of pain and uneasiness, and thickness in the anal canal.[1,2] The posterior midline often suffers from this thickness. Locations other than the midline are most probably caused by malignancy. The internal anal sphincter is the cause of fissure that becomes complicated and decreases healing by dividing into two parts thus

blocking the blood supply to the site of infection.[3,4] This delay in healing causes faecal incontinence that becomes chronic if it lasts for more than six weeks. When carefully examined the chronic case of anal fissure shows two main characteristics of the hypertrophied anal papilla and sentinel skin tag.[5,6] This disease of anal fissure can be treated surgically and medically depending upon the condition of the fissure.[7] Medical treatment includes using a laxative to soften the stool and the use of local anaesthetic medicines. However, when the case becomes complicated and medical treatment becomes insufficient, then surgical treatment becomes necessary.[8] This article mainly focuses on the surgical treatment of this disease. One of the surgical methods used to treat an acute anal fissure is open internal anal sphincterotomy, introduced by Eisenhammer. However, post-operation fecal incontinence is the main issue in this type of surgery.[9] To reduce the risk of post-operative fecal incontinence, the surgical attitude was changed from midline to lateral technique and from open to the close method. This new technique was named closed lateral Internal Anal Sphincterotomy.

METHODOLOGY

This clinical randomized comparative study was carried out at the Department of General Surgery Hayatabad Medical Complex Peshawar from Feb 2019 to Feb 2020 that compares the fecal incontinence, and healing rate in patients treated with the open and closed method of anal sphincterotomy. Many complications arise after anorectal surgery, but this study will mainly focus on postoperative fecal incontinence and healing rate. This study will try to analyse and compare the above-mentioned post-operative anal complications in patients treated with open internal anal sphincterotomy and closed lateral internal sphincterotomy. Fecal incontinence is further divided into four categories according to Browning and Park's classification of incontinence. Category A includes patients fully continent for flatus and stool. Category B includes all patients in groups A and B continent for a stool but not for flatus. Category C patient's continent for a solid stool but incontinent for liquid stool. Category D includes divided into two categories i.e. (category A) normal healing, category B (delayed healing). Statistical analysis was done using SPSS-23.0. A Chi-square test was used to compare the relative proportions of fecal incontinence in both groups. p-value ≤0.05 was considered statistically significant.

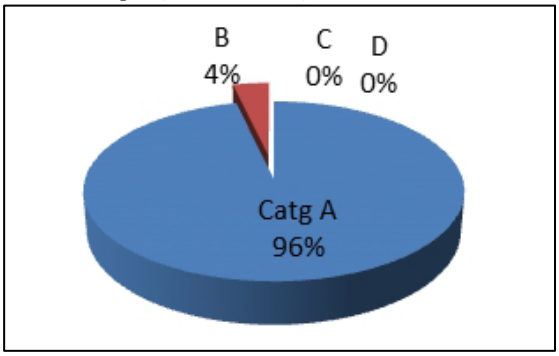
RESULTS

The total sample of the study was 168. Out of this sample, 42(25%) were female while 126(75%) were male. Overall male to female ratio was 3:1. In group A (closed method), out of 84, 17 (21%) were female while the remaining 67(80%) were male. While in Group B (open method) 19(23%) were female while 65(77%) were male. In group B the male-to-female ratio was 3:1. Ages ranged between 14-71 years. The mean age in group A was 33 years while in group B 36 years. The total fecal incontinence in group B (open method) is 21% while total fecal incontinence in group A (closed method) is only 4% which is a clear difference between the two groups.

Table 1: Classification of Fecal Incontinence

Category A	**Fully continent for flatus and stool**
Category B	**A continent for a stool but not for flatus**
Category C	**A continent for a solid stool but incontinent for liquid stool**
Category D	**Complete incontinence**

Group A (Closed Method) Fecal Incontinence



Group B (Open Method) Fecal Incontinence

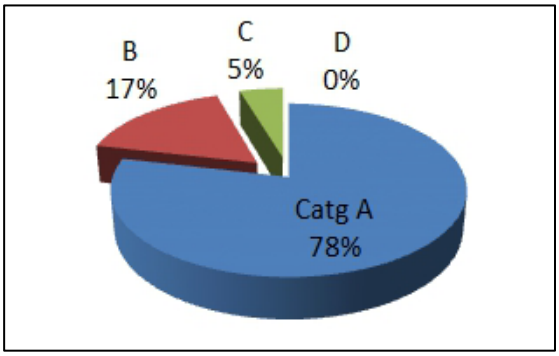


Figure 1: Category-Wise Distribution of Patients in Both Groups

The above results clearly show that group B includes all those patients that were operated through the open method. While group a includes all those patients that were operated through the closed method. The patients who were operated through Open Internal Anal Sphincterotomy (OIAS) show that 17 % of patients were incontinent for flatus but continent for stool. Five (5%) patients show incontinence for a liquid stool but continent for a solid stool. The remaining 78% showed complete fecal continence. On the other hand, Group A includes patients that were operated through Closed Lateral Internal Anal Sphincterotomy (CLIAS) using Blade 11. Only 4% of patients showed incontinence for flatus but not for stool. The remaining 98 % of patients were fully continent for stool and flatus and showed no incontinence. In the same patients apart from the fecal incontinence, data regarding the healing rate was also collected after one week of the surgeries. Healing was divided into two categories i.e. (category A) Normal healing (category A) and delayed healing (category B). In group A (closed method) out of 84 patients, 2 patients (2.38 %) showed delayed healing while 82 patients (97.61 %) showed normal healing. In group B (open method) 7.4% of patients showed delayed healing with a significant p-value of 0.04 while 92.85 showed normal healing.

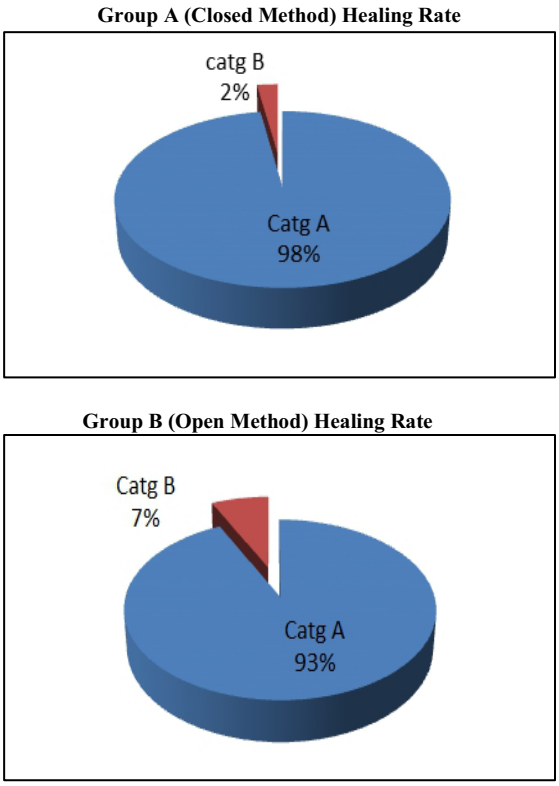


Figure 2: Healing Rate between Two Groups

Table 2: Healing Rates between Groups

Outcome	Group A		Group B		P-Value
	f	%age	f	%age	
Category A (Normal Healing)	82	97.61%	78	93.%	0.034
Category A (Delayed Healing)	02	2.38%	06	7.4%	0.49

DISCUSSION

Various studies have shown lateral internal sphincterotomy to be superior to anal dilatation. The proposed advantage of lateral sphincterotomy over manual dilation of the anus is that it represents a surgically controlled partial internal sphincter division.[10] Despite this it carries a significant risk of minor, persistent disturbances in anal incontinence. The incidence has been poorly documented but varies between 0 and 36% for incontinence to flatus, 0 and 21% for incontinence to liquid stool, and 0 and 5% for solid stool.[11,12] In our study pain was significantly relieved in 97.1% of patients which exactly coincides with the study done on 246 patients by Garcea G et al, in which pain was significantly reduced in all patients on day first post-operative. In this study, the pain was completely relieved on 2nd postoperative day.[13] Our study closely coincides with relief of pain, with Lund JN et al, who concluded that 56% of patients were free of pain within 24 hours and 42 patients (42%) had no pain after 48 hours.[14] This study shows 94.3% of fissures were healed at the end of the 6th week post-operatively. Healing of fissures in other studies reported, showed 97-100% with different follow-up periods.[15,16] The smaller difference reported regarding the healing of fissures is due to the difference in follow-up period that is the shorter period for the follow-up in our study. This study also shows that the bleeding per rectum ceased in 97.1% at the 6th week postoperatively with the overall satisfaction of the patients being 95% which coincides with other studies.[17] Anal fissure is the most common painful anal condition.[18] Among surgical treatments for anal fissure, lateral internal sphincterotomy (closed or open) is the procedure of choice. It is a quick

and effective procedure for the improvement of symptoms and healing fissures.[19,20] After lateral internal sphincterotomy, future constipation & recurrence of ulcers can be avoided by prescribing the patient stool softeners, and fibre supplementation and being advised about maximum intake of vegetables rather than meat, and drinking plenty of water.

LIMITATIONS

One of the limitations of our study is limited study population carried out in a single centre tertiary care hospital. The patients were not followed for a long period of time. The sample size may have limited the ability to detect further predictors of fecal incontinence. Thus to confirm our results, a randomized control trial should be carried out on patients from different hospitals in future with a large study cohort.

CONCLUSION

The open and closed method of sphincterotomy showed a significant difference in terms of postoperative complications such as faecal incontinence and healing rate measured after one week of surgeries. Fecal incontinence was less in closed Lateral Anal Sphincterotomy due to the use of blad 11 while it was higher in open internal anal sphincterotomy. Similarly, the healing rate was significantly higher in the closed method while delayed healing was seen in the open method. Therefore, we recommend closed lateral internal Anal sphincterotomy (CLIAS) using blade 11 instead of open internal anal sphincterotomy(OIAS).

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