Original Research Article

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Efficacy of closed internal sphincterotomy using von grafae knife in the management of chronic anal fissures

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ABSTRACT

Background: Fissure in ano is one of the commonest benign and painful proctologic diseases causing considerable morbidity and reduction in quality of life. There are medical as well as surgical treatment options for anal fissure. The present study was conducted to find out the efficacy of closed internal sphincterotomy using von grafae knife for the management of chronic anal fissures.

Methods: This was a study conducted at Department of surgery, KR hospital, Mysore, Karnataka, India from June 2016 to November 2016 for a period of six months. 70 patients with chronic anal fissure were randomly assigned into group A (35 patients) and group B (35 patients). Group A patients underwent open sphincterotomy, group B closed sphincterotomy using VON grafae knife. After matching the baseline characteristics; post op pain, wound infection, hematoma, fecal and flatus incontinence were compared. Data was analysed using SPSS-16.

Results: 3 out of 35 patients had wound infection in group A, none had infection in group B. 10 out of 35 (28%) developed flatus incontinence temporarily in group A, 6 out of 35 (17%) in group B. 2 out of 35 (5.7%) had fecal continence in group A, none had it in group B but incontinence was temporary. Pain (VAS>6) was more in group A (24) than group B (15). One patient had hematoma as a complication in group B.

Conclusions: Closed internal sphincterotomy using von grafae knife is a better technique compared to open technique in terms of pain, wound infection, incontinence.

Keywords: Fissure, Grafae knife

INTRODUCTION

Fissure in ano is one of the commonest benign and painful proctological diseases causing considerable morbidity and reduction in quality of Life.¹ There are medical as well as surgical treatment options for anal fissure. Medical treatment relies on application of local anesthetic, stool softeners, high fiber diet and application of nitroglycerine paste and botulinum toxin.² In cases where medical treatment fails then surgical treatment is recommended. In past, anal dilatation was performed to decrease resting anal tone.³ Eisenhammer introduced open internal anal sphincterotomy (OIAS).⁴ It is the

treatment of choice for chronic anal fissure. It results in healing of 94% to 96% of cases.⁵ Fecal incontinence is a major problem associated with this procedure ranging from 20% to 64%.^{6,7} To avoid this complication OIAS was modified from midline to lateral approach and from open to close technique. Furthermore, use of different devices in closed lateral internal anal sphincterotomy (CLIAS) reduce trauma to anal sphincter like radio-frequency bistoury and Von-Grafae (cataract) knife Radio-frequency bistoury is the costly procedure and not easily available but Von-Grafae knife is easily available.^{5,8,9} It is a flat blade of just 2 mm in size and it causes minimal trauma to anal sphincter. Recently, in

local study, Saif et al successfully did CLIAS with Von-Grafae knife and shows only 2% fecal incontinence which resolved spontaneously in a few weeks. Therefore, Von-Grafae knife is easily available, cost effective and can successfully be used in CLIAS but very limited data is available regarding its use, especially in local studies. No randomized controlled trial is available to compare it with OIAS. Hence, the aim of this study was to compare the frequency of fecal incontinence in patients treated with OIAS (standard) versus CLIAS with Von-Grafae knife and to add to the data available that support the routine use of this technique which will potentially minimize this distressing complication of the simple procedure.

METHODS

The study was conducted at the Department of Surgery, KR Hospital, Mysore, Karnataka, India during a period of six months from June to November 2016. Ethical approval was obtained from the Ethical Review committee of the hospital. Sample size was 70 patients with chronic anal fissure. Chronic anal fissure was defined as a history of painful defecation with bleeding per rectum for more than 6 weeks and clinical finding of tear in the anal mucosa with skin tag (sentinel pile). Patients were randomly divided into two groups A and B with 35 patients in each group by using random allocation software version 13. OIAS was carried out in patients of group A whereas patients of group B were subjected to CLIAS using Von grafae knife. Patients of either gender, more than 12 years of age with chronic anal fissure (diagnosed as stated in operational definition), who gave informed consent were included in this study.

Patients with concomitant anal disease like Perianal abscess, fistula in ano, Crohn's disease or ulcerative colitis were excluded. The patients with previous history of anorectal surgery, those with neurological disease which leads to fecal incontinence, patients below 12 years of age and patients who did not give consent also excluded from the study. After admission, baseline investigations of all patients including complete blood count, blood sugar, serum urea, serum creatinine, serum electrolytes and urinalysis were performed. Chest X-ray and ECG were carried in patients where appropriate. Anesthesia fitness was taken before surgical intervention. Written and informed consent regarding surgical procedure was taken by doctor on duty.

A night before surgery patients were kept nil by mouth and given 5% dextrose water intravenously after maintaining wide bore IV cannula. All patients underwent colon cleansing by being administered enema a night before surgery and early morning on the day of surgery. Patients were shifted to operation room early morning, after routine check of anesthesia equipments and resuscitation trolley; noninvasive blood pressure monitor pulse oximeter and ECG monitor were applied

for measuring blood pressure, pulse rate, oxygen saturation and electrical activity of the heart respectively. Base line vitals were obtained. All patients were given spinal anesthesia followed by prophylactic intravenous antibiotic cefotaxim 1 gm stat dose after checking hypersensitivity response. Procedures were carried out by consultant surgeon. Patients were placed in lithotomy position and operative site was prepared with povidone-iodine solution followed by application of sterile drapes. The procedures were carried out according to group (A and B). Group A underwent OLIAS whereas patients in group B had CLIAS using von grafae knife.

Postoperative care included hot-sitz bath, fiber supplement and Syp. Cremaffin four -table spoons in the night. Inj taxim 1g BD and Inj Metrogyl 100ml TID was given for 2 days and analgesic in the form of inj. Diclofenac for one day and switched to oral antibiotics and analgesics for next 5 days.

Patients were discharged after 72 hrs and asked to come for follow up next week and weekly for 12 few weeks. Parameters compared were pain, wound infection, fecal and flatus incontinence and post-op hematoma formation. Pain was compared using mean visual analog scale (VAS), VAS >6 was considered significant. wound in the perianal region is looked for any hematoma during 12 to 24 hrs, infection during follow up and asked for history of incontinence. Confounding variables were controlled by excluding those patients who had concomitant anal disease like perianal abscess, fistula in ano, inflammatory bowel disease, patients who had previous history of anorectal surgery and patients with neurologic disease. Furthermore, stratification was also performed to control confounders.

The software program SPSS for Windows (version 16; SPSS Incorporated, Chicago, Illinois, USA) was utilized for all statistical analyses. Frequencies and percentages were used to summarize categorical variables like gender distribution, duration of disease, Browning and Park's incontinence categories, and fecal incontinence.

Moreover, male to female ratio was also determined. Mean + standard deviation (SD) were computed for numerical variables like age distribution.

The chi-square test was used to compare relative proportion of fecal incontinence in both groups. P-value of less than 0.05 was considered statistically significant. Stratification was done with regards to age, gender and duration of chronic anal fissure to see the effect of treatment on final outcome.

RESULTS

In present study mean age in group A was 35.4 and in group B was 36, with number of females in group A as 10 and in group B as 12. Number of patients with mean VAS >6 were taken as having significant pain.

On post-op day 2 number of patients with with mean VAS >6 were 24 in group A and 15 in group B with a statistically significant p value of 0.03. One had hematoma during first 12 hrs after surgery in group B and none had it in group B. 3 of 35 patients had wound infection in group A and none in group B which had a p value-0.3

8 of 35 patients had flatus incontinence in group A and 2 in group B which was temporary (p value-0.04), 2 of 35 patients had fecal incontinence in group A and none in group B (p value-0.3).

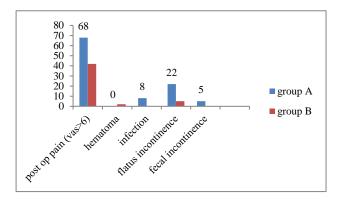


Figure 1: Comparison of different complications between group A and B.

DISCUSSION

Results of the current study revealed that patients who underwent CLIAS via von-greaves knife showed statistically significant difference with regards to pain, wound infection, incontinence than those who were treated with OIAS. In this study, the mean age group was 35 among which 22 were females and 48 males. Study conducted by Gupta V et al had mean age group 38 was and male to female ratio was 1.47:1.¹¹

Traditional surgery that permanently weakens the internal anal sphincter is associated with a risk of incontinence. Medical therapies temporarily relax the internal sphincter and pose no such danger, but their limited efficacy has led to displacement rather than replacement of traditional surgery. Emerging surgical procedures promise continued improvement and new sphincter sparing surgery may render traditional surgery redundant. Chemical sphincterotomy can be done using a variety of agents of which glyceryl trinitrate (GTN) remains common chemical sphincterotomy agent. Controlled trials have shown varied results of healing with topical GTN, however, headache is common with nitrates, which may limit their application and reduce patient compliance. ²

The OIAS is the most widely practiced surgical approach for the management of chronic anal fissure and is considered the "gold standard".⁹ Although it is considered safe but usually associated with complications like pain, bleeding, hematoma, and fecal incontinence.¹⁰

Postoperative fecal incontinence is a major complication following surgery. The reported incidence of this morbidity is variable in the literature.

In this study mean pain (VAS) on post op day 1 was lesser in closed than open (P=0.03) Also there was decrease in the number of days of hospital stay in closed method. In the study conducted by Gupta V et al also had comparable results.¹¹

Wound infection was 0 in closed and 8% in open. (P-0.01) In the study conducted by Gupta V et al None had wound infection in closed and one case had infection in open. In the study conducted by Patel HS et al wound infection rate was 10.3% in open method and 4.2% in closed method. Wound infection rate in closed method was lower than open method. In

Flatus incontinence was 17% in closed and 22% in open, fecal was 0 in open and 5% in closed which was temporary. In the study conducted by Gupta V et al. ¹¹ There was no incontinence noted in both the groups.

In the study conducted by Patel HS et al, incontinence to flatus was 8.3% in closed method and 3.4% in open method with an overall rate of 5.7%. This was temporary and controlled within a 1 week. Incontinence to stool was 3.4% in open method which was temporary and controlled within 2 weeks while none in closed method with overall a rate of 1.9%.

CONCLUSION

Lateral anal sphincterotomy using von graefae knife (closed method) is a better alternative compared to open method in terms of hospital stay, post op pain, wound infection and incontinence.

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Ethical approval: The study was approved by the

 $institutional\ ethics\ committee$

REFERENCES

- 1. Bhardwaj R, Parker MC. Modern perspectives in the treatment of chronic anal fissures. Ann R Coll Surg Engl. 2007;89:472-8.
- Sajid MS, Hunte S, Hippolyte S, Kiri VA, Maringe C, Baig M. Comparison of surgical vs chemical sphincterotomy using botulinum toxin for the treatment of chronic anal fissure: a meta-analysis. Colorectal Dis. 2008;10:547-52.
- 3. Poh A, Tan KY, Seow-Choen F. Innovations in chronic anal fissure treatment: A systematic review. World J Gastrointest Surg. 2010;2:231-41.
- 4. Ram E, Alper D, Stein GY, Bramnik Z, Dreznik Z. Internal anal sphincter function following lateral internal sphincterotomy for anal fissure: a long-term manometric study. Ann Surg. 2005;242:208-11.

- Liratzopoulos N, Efremidou EI, Papageorgiou MS, Kouklakis G, Moschos J, Manolas KJ. Lateral subcutaneous internal sphincterotomy in the treatment of chronic anal fissure: our experience. J Gastrointestin Liver Dis. 2006;15:143-7.
- 6. Hashmat A, Ishfaq T. Chemical versus surgical sphincterotomy for chronic fissure in ano. J Coll Physicians Surg Pak. 2007;17:44-7.
- 7. Jaleel F, Habib L, Mirza MR. Outcome of conservative lateral internal anal sphincterotomy for chronic anal fissure. J Coll Physicians Surg Pak 2009; 13: 158-61.
- 8. Hoffmann DC, Goligher JC. Lateral subcutaneous internal sphincterotomy in treatment of anal fissure. Br Med J 1970; 3: 673-5.1.
- 9. Sharp FR. Patient selection and treatment modalities for chronic anal fissure. Am J Surg. 1996;171(5):512-5.

- 10. Denoya P, Sands DR. Anorectal physiologic evaluation of constipation. Clin Colon Rectal Surg 2008;21(2):114-21.
- 11. Gupta V, Rodrigues G, Prabhu G, Ravi C. Open versus closed lateral internal sphincterotomy in the management of chronic anal fissures: a prospective randomized study. Asian J Surg. 2014;37(4):178-83.
- 12. Patel HS, Chadva J, Parikh J, Naik N. Study of Operated Patients of Lateral Internal Anal Sphincterotomy for Chronic Anal Fissure: J Clin Diag Res. 2013;7:2863-5.

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