ORIGINAL ARTICLE

EFFICACY AND SAFETY OF SUBCUTANEOUS LATERAL INTERNAL SPHINCTEROTOMY FOR CHRONIC ANAL FISSURE

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Background: This study was undertaken to determine the efficacy and safety of subcutaneous lateral internal sphincterotomy (SLIS) for chronic anal fissure by assessing the relief of defecatory pain, duration of wound healing and associated complications such as bleeding, infection, and anal incontinence. **Methods**: This descriptive case series was carried out at the Department of Surgery, Pakistan Institute of Medical Sciences (PIMS), Islamabad from September 1, 2008 to February 28, 2009. **Results:** Out of fifty patients 31 were males and 19 were females. The mean age was 30.04±8.49 years. Defecatory pain and bleeding per rectum were the commonest symptoms, found among all patients. Symptomatic relief of pain following surgery was observed among all patients at 4th week while all fissures healed at 8th week. At 4th weeks follow-up visit none of the patients had flatus incontinence while at 8th weeks all patients had good faecal continence. Majority (76%) of the patients were managed as Day case or Extended day case surgeries. There was no in-hospital mortality in this case series. **Conclusion:** SLIS is a valuable surgical procedure for patients with chronic anal fissure. It is effective and safe, offers quick relief of defecatory pain, and promotes early fissure healing without being attended by any major complications. The initial transient incontinence of flatus and faeces improves spontaneously over few weeks period. Majority of the patients are manageable on day case or extended day case surgery basis.

Keywords: Chronic anal fissure. Subcutaneous lateral internal sphincterotomy, Day case surgery

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INTRODUCTION

Chronic anal fissure results from the progression of an acute anal fissure which has failed to heal over six weeks following its development. The usual sufferer is an otherwise fit individual. The fissure typically has inflamed and indurated margins with a base which has either scar tissue or the lower edge of the internal sphincter. A guarding sentinel pile is often found at its lower edge. The usual course of events in the pathogenesis of anal fissure includes local trauma caused by the passage of hard large stools and internal sphincter spasm caused by the persistence of these inciting events, which in turn result in decreased perfusion of the posterior anal wall and a higher anal canal pressure even at rest. Once the resultant fissure fails to heal over a period of time, it progresses into chronicity.[1–3]

A variety of surgical procedures have been employed to treat chronic anal fissure, however the best results have been reported with subcutaneous lateral internal sphincterotomy (SLIS) with a success rate of 90–95%. The various other surgical procedures employed for managing chronic anal fissures include manual anal stretch, controlled intermittent anal dilatation, fissurectomy, fissurotomy, and sphinterotomy. The manual anal stretch has had been in common practice in the past. The major drawbacks of these surgical procedures have been the higher rates of fissure persistence and greater risk of incontinence. Contrary to these, the SLIS offers more predictable success rates and significantly lesser risk of permanent incontinence.[4–6]

The present study was designed to evaluate the efficacy and safety of SLIS for chronic anal fissure in our patients.

MATERIAL AND METHODS

This descriptive case series study was conducted at the Department of Surgery, Pakistan Institute of Medical Sciences (PIMS), Islamabad over a period of six months from September 1, 2008 to February 28, 2009. It included all adult patients of either gender who had chronic anal fissure and were managed during the study period. Convenience sampling technique was employed. Patients who did not consent to participate in the study and those who had undergone some surgical intervention for the same problem in other hospitals were all excluded.

The patients were evaluated by history and physical examination. Where peri-anal examination and digital rectal examination (DRE) was possible, it was performed preoperatively, however where pain did not allow it, the same was undertaken under anaesthesia at the time of surgery. Pre-operatively the patients were counselled regarding their disease, the need for surgery, mode of anaesthesia, likely complications and postoperative follow up plan. Informed consent was taken from all patients. Basic essential investigations were performed among all

patients to evaluate for fitness for anaesthesia. The open method of SLIS was employed in the study subjects. The procedure was undertaken under spinal or general anaesthesia. A follow-up of 2 months was done at 1st week, 2nd week, 3rd week, 4th week and 8th weeks to document relief of defecatory pain, healing of fissure, incontinence of flatus/faeces and any other complication. Assessment for defecatory pain and incontinence of flatus/faeces was done subjectively through history. All the data were recorded on *pro forma*.

SPSS-10 was used for analysis. Descriptive statistics for numerical data such as age were expressed as Mean and Standard deviation while the categorical data were expressed as frequency and percentages.

RESULTS

Out of fifty patients, 31 (62%) were males and 19 (38%) were females. The patients ranged in age between 16-50 years with a mean age of 30.04±8.49 years. 70% (n=35) of the patients were in their 3rd and 4th decades of life. 84% (n=42) of the patients were from the twin cities of Islamabad and Rawalpindi and the rest were from Azad Kashmir and upper Punjab.

The patients belonged to various occupations which included business/shop keeping 17(34%), house wives 14(28%), office workers 5(10%), labourers, college students and drivers 3 (6) each, manual workers and ward boys 2 (4%) e ach and one (2%) farmer.

The patients were stratified into three social groups based on their approximate monthly incomes. The status was good (approximate monthly income of >15,000) among 13 (26%), satisfactory (monthly income of >6,000-15,000) among 21 (42%) and poor (monthly income of <6,000) among 16 (32%) patients.

Defecatory pain and bleeding per rectum were the most frequent symptoms found among all patients. Posterior location was the most common, found in 46 (92%) patients. Symptomatic relief of pain following surgery was found among all patients at 4th week. Table-1 shows symptomatic relief of pain following surgery as found on their follow-up visits. Healing of fissure was observed at 8th week among all patients. Table-2 shows the duration of fissure healing at different follow-up visits of the patients.

Table-3 shows the frequency of flatus and faecal incontinence among the patients in the postoperative phase. At 4th weeks follow-up visit none of the patients had flatus incontinence while at 8th weeks all patients had good faecal continence.

Complications observed among the patients included postoperative bleeding in 2 (4%) patients, and wound infection in 2 (4%) patients and these responded to conservative measures. Majority (76%) of the patients were managed as Day case or Extended day case surgeries while 24% needed hospital stay of over 24 hours. The maximum hospital stay was 3 days, observed among relatively elderly patients. There was no in-hospital mortality in this case series.

Table-1: Symptomatic relief of defecatory pain following SLIC (n=50)

Time of Follow-Up	Patients with pain relief. N (%)
1st Week	35 (70)
2nd Week	42 (84)
3rd Week	44 (88)
4th Week	50 (100)
8th Week	50 (100)

Table-2: Wound healing duration after SLIC (n=50)

Time of follow-up	Patients with healed wound. N (%)
1st Week	33 (66)
2nd Week	39 (78)
3rd Week	41 (82)
4th Week	47 (94)
8th Week	50 (100)

Table-3: Frequency of incontinence of flatus/ faeces following SLIC (n=50)

Time of follow-up	Incontinence	Patients with incontinence No. (%)
1st Week	Flatus Faeces	32 (64%) 4 (8%)
2nd Week	Flatus Faeces	14 (28%) 4 (8%)
3rd Week	Flatus Faeces	8 (16%) 2 (4%)
4th Week	Flatus Faeces	0 (0%) 1 (2%)
8th Week	Flatus Faeces	0 (0%) 0 (0%)

DISCUSSION

In our study, male patients were relatively more than females. Majority of the patients were in their 3rd and 4th decades of life. There was a mix of patients belonging to all socioeconomic strata of the population and belonging to different occupations. We could not establish any significant association between anal fissure disease and socio-demographic features.

We employed SLIS among our patients. In the past the surgical treatment of chronic anal fissure consisted of manual dilatation of the anus and fissurectomy under general anaesthesia but this resulted in high rates of long term incontinence and recurrence.[7–9] SLIS has been proved to offer a more durable treatment for chronic anal fissure compared with various other management options. It also does not compromise long-term faecal continence.[4,10] Mousavi SR *et al*[11] in a series of sixty two patients have proved SLIS to be superior to fissurectomy in treating chronic anal fissure.

In our study we performed SLIS under spinal or general anaesthesia. Most of the published studies have similarly used general anaesthesia; however Rathera SA *et al*[12] in a series of 340 patients of acute and chronic anal fissure performed SLIS under local anaesthesia. This is one additional potential advantage of the procedure which needs validation by some other study in our population.

This study observed quick symptomatic relief of pain following surgery. Healing of fissures was also fast. Our findings conform to those of Mishra R et al[7] who reported early relief of pain and better healing rates in patients treated with lateral internal sphincterotomy. A number of published studies have compared these parameters of pain relief and healing for SLIS versus topical glyceryl trinitrate. Evans J *et al*[13] reported 60.6% healing rate at eight weeks with glyceryl trinitrate as compared with 97% with lateral internal sphincterotomy. Libertiny G *et al*[14] found 98% healing rate of anal fissures with lateral internal sphincterotomy as compared to only 56% healing rate with glyceryl trinitrate.

In our study, initially transient incontinence of flatus and faeces was reported by the patients, however at 4th weeks follow-up visit none of the patients had flatus incontinence, while at 8th weeks all patients had good faecal continence. Our results conform to those of Evans J *et al*[13] who reported no case of long term incontinence. However, in some studies a relatively higher frequency of such complications has been reported. Pernikoff BJ[15] reported a relatively higher complication rate with open than closed internal sphincterotomy and an overall 8% incidence of incontinence. Oh C *et al*[16] in a study of 1313 patients, observed 21 cases of flatus or liquid incontinence. Most of the studies have reported incontinence that persists beyond 8 weeks postoperatively. Mentes BB *et al*[17] investigated the effects of lateral internal sphincterotomy on quality of life in patients with chronic anal fissure using the gastrointestinal quality of life index and the faecal incontinence quality of life scale. They found significantly improved gastrointestinal quality of life following lateral internal sphincterotomy, regardless of the surgical complications or postoperative disturbances of continence.

Majority (76%) of our patients were managed as day case or extended day case surgeries while a relatively smaller percentage needed hospital stay of over 24 hours. No published local study has elaborated on the hospital stay of the patients as an outcome measure and hence we suggest further studies to confirm and improve upon our results.

Our study has some limitations. It is a single cantered study. We followed our patients for eight weeks only, owing to which we could not assess recurrence beyond that time limit. Also our study did not include a control group for more objective comparison of results. The results of our study should be interpreted keeping in view these limitations

CONCLUSION

Subcutaneous lateral internal sphincterotomy is a valuable surgical procedure for patients with chronic anal fissure. It is effective and safe, offers quick relief of defecatory pain, and promotes early fissure healing without being attended by any major complications. The initial transient incontinence of flatus and faeces improves spontaneously over few weeks period. Majority of the patients are manageable on day case or extended day case surgery basis.

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