

CHRONIC ANAL FISSURE A COMPARATIVE STUDY OF THREE DIFFERENT FORMS OF SURGERY

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One hundred and twenty patients with fissure in ano were treated by different forms of surgery. Forty patients were subjected to fissurectomy and posterior median sphincterotomy, forty were treated by lateral subcutaneous sphincterotomy and forty were treated by simple anal stretch. Lateral subcutaneous internal sphincterotomy proved to be the treatment of choice for chronic anal fissure. It is a simple procedure, avoids an open wound in the anal canal, followed by rapid healing of the fissure and has no recurrence. Anal stretch similar to sphincterotomy breaks the pathologically raised sphincter tone. Most of the anal stretched patients were free of symptoms only few of them had to be treated again for the same disease by lateral sphincterotomy. It is an efficient out-patient procedure with immediate relief of pain, immediate return to work and rapid healing of the fissure. Fissurectomy with posterior median sphincterotomy results in delayed pain relief, delayed healing of the anal wound, prolonged period off-work and associated with high incidence of post operative complications mainly incontinence.

INTRODUCTION

The anal fissure occurs as longitudinal anal ulcer in the skin lined part of the posterior midline of the anal canal. However it can be found in the anterior midline in up to 10% in women and up to 1% in men. Lateral fissures are rare. It is predominant in young adults, but it is sometimes seen in infants and children.^(1,2)

It is a simple condition that causes considerable discomfort. The acute form should be treated by conservative non-surgical regimens. If the patient finds the symptoms intolerable or if the fissure shows signs of chronicity, then operation is recommended⁽¹⁾.

The fissure in ano is a frequent and painful disease. The pain is explained by the extensive sensible innervation of the anoderm. There is no morphological correlation between pain and fissure. The fissure is also invariably associated with sphincteric spasm which keeps up the irritation and delays the healing^(2,3)

Many lines of treatment of chronic anal fissure had been adopted. Conservative methods include prolonged use of laxatives and local anaesthetics may lead to anal stenosis. The treatment of anal fissure by lateral

subcutaneous internal sphincterotomy is a simple and safe operation performed under general anaesthesia after precise differentiation of the internal sphincter. The results of this surgical treatment is very satisfactory, the marked pain recedes immediately after the operation. The fissure heals rapidly after relaxation of the spasm of the internal sphincter^(3,4,5).

Anal dilatation, similar to sphincterotomy breaks the pathologically raised sphincteric tone. Therefore it is proposed that anal stretch gently performed over a period of 3-5 minutes under general anaesthesia is the method of choice for initial treatment of anal fissure. It should be noted that it is the internal sphincter rather than the external sphincter which requires to be stretched since it is the muscle which underlies the fissure⁽²⁾. Anal dilatation results in sphincter damage in more than half of patients, but few of them develop anal incontinence⁽⁶⁾.

Posterior median sphincterotomy plus or minus fissurectomy should be reserved for patients with associated fistula or persistent fissure after lateral internal sphincterotomy, as this procedure will result in key hole deformity and occasional incontinence of flatus and liquid stool.⁽⁷⁾

PATIENTS AND METHODS

During the period from 1995 to 1999, one hundred and twenty patients with chronic anal fissure were studied. Sixty six females (55%) and fifty four males (45%). Their age ranged from 20 to 61 years with the mean of 35 years. They were divided into 3 groups.

Group A: (40 patients) treated by manual dilatation of the anus (MDA) or anal sphincter stretch. Under general anaesthesia the index and middle fingers of each hand are inserted simultaneously into the anus and pulled apart to give maximal dilatation. The patient can go home in the same day, but he should be warned that there may be some faecal incontinence lasting possibly for a week or ten days.

Group B: (40 patients), treated by fissurectomy and posterior median sphincterotomy.

The essential part of the operation is to divide the transverse fibres of the internal sphincter in the floor of the fissure. If a sentinel pile is present, it is excised, the ends of the divided muscle retract and a smooth wound is left.

Group C: (40 patients) treated by lateral internal sphincterotomy.

In this operation the internal sphincter is divided away from the fissure itself, usually either in the left or right lateral position. The procedure can be done by an open or closed method.

All the patients were subjected to full clinical and proctologic examination before surgery and were followed up for three to nine months after the operation.

RESULTS

Site of the fissure:

Anal fissure was found posterior in 88 patients (73.3%)

Table (3) showing postoperative pain relief after different lines of treatment of chronic anal fissure.

Time of pain relief	Group (A)		Group (B)		Group (C)	
	No. of cases	%	No. of cases	%	No. of cases	%
First day	32	80%	-	-	10	25%
Second day	8	20%	-	-	6	15%
Third day	-	-	-	-	14	35%
Fourth day	-	-	14	35%	2	5%
Fifth day	-	-	10	25%	3	7.5%
Sixth day	-	-	6	15%	5	12.5%
Seventh day	-	-	5	12.5%	-	-
Second week	-	-	5	12.5%	-	-

anterior in 27 patients (22.5%) and lateral in 5 patients (4.2%) (Table 1) Ten out of the 88 patients with posterior anal fissure had an associated anterior one.

Table (1): showing the site of the fissure in our study.

Site of the fissure	Number of patients	%
Posterior	88	73.3%
Anterior	27	22.5%
Lateral	5	4.2%

Associated lesions:

Anal fissure was associated with sentinel piles in 40 patients (33.3%) anal papillae in 10 patients (8.3%), internal haemorrhoids in 10 patients (8.3%), subcutaneous fistulae in 5 patients (4.2%) and anal stenosis in 5 patients (4.2%) (Table 2).

Table (2): Associated anal lesions in the 120 patients with chronic anal fissure.

Associated lesions	Number of patients	%
Sentinel piles	40	33.3%
Anal papillae	10	8.3%
Internal haemorrhoids	10	8.3%
Subcutaneous fistulae	5	4.2%
Anal stenosis	5	4.2%

Postoperative pain relief:

Started as early as the first day in 32 patients belonging to group A (80%), in 10 patients belonging to group C (25%). It persisted for 3 days or more in patients belonging to groups B and persisted up to two weeks in 5 patients belonging to this group (12.5%) (Table 3).

Healing:

The shortest time of healing developed in patients

belonging to group (A) "from one to three weeks". It was delayed in patients belonging to group (B) "from three to eight weeks". (Table 4)

Table (4) showing time of healing of chronic anal fissure following different lines of treatment.

Duration of healing	Group (A)		Group (B)		Group (C)	
	No. of cases	%	No. of cases	%	No. of cases	%
First week	6	15%	-	-	8	20%
Second week	18	45%	-	-	8	20%
Third week	16	40%	6	15%	16	40%
Fourth week	-	-	2	5%	8	20%
Fifth week	-	-	10	25%	-	-
Sixth week	-	-	-	-	-	-
Seventh week	-	-	-	-	-	-
Eighth week	-	-	22	55%	-	-

Postoperative complications:

Discharge was noticed in 6 patients of group (A) (15%), 15 patients in group (B) (37.5%) and 8 patients in group (C) (20%).

Bleeding was noticed in 19 patients in group (B) (47.5%) and 4 patients in group (C) (10%).

Ecchymosis was found in 4 patients in group (A)

(10%).

Incontinence to flatus was noticed in 16 patients in group (A) (40%) 10 patients in group (B) (25%) and 3 patients in group (C) (7.5%). While incontinence to faeces was noticed in 3 patients in group (A) (7.5%).

Recurrence was noticed in 6 patients in group (A) (15%) (Table 5)

Table (5): showing postoperative complications in our study.

Postoperative complications	Group (A)		Group (B)		Group (C)	
	No. of cases	%	No. of cases	%	No. of cases	%
Discharge	6	15%	15	37.5%	8	20%
Bleeding						
1 st day	-	-	10	25%	4	10%
2 nd day	-	-	6	15%	-	-
3 rd day	-	-	3	7.5%	-	-
Ecchymosis	4	10%	-	-	-	-
Incontinence						
Flatus	16	40%	10	25%	3	7.5%
Faeces	3	7.5%	-	-	-	-
Recurrence	6	15%	-	-	-	-

DISCUSSION

Chronic anal fissure is a frequent painful condition. It starts as a crack in the mucous membrane of anal canal over the lower third of the internal anal sphincter. Secondary infection, skin tag, hypertrophy of the anal papilla, fibrous induration of the edges of the fissure, spasm and fibrosis of the internal anal sphincter occur later (8).

The aetiology of anal fissure is unknown. Trauma to the anal canal as a result of constipation or labour may be one of the causes of chronic anal fissure (2). Other causes are anal stenosis infection, Chron's disease and malignancy. The raised sympatheticotonus is probably one of the central factors within the pathophysiological chain of the disease. In contrast to the motility of the other bowel tract, where motility is regulated by the stimulus of sympathetic nervous systems and inhibition through parasympathetic activity, the activity of the sphincter muscle is controlled merely by the influence of the sympathetic nerves. This was proved especially for the internal sphincter which has no intramurally localized ganglion cells and is therefore regulated by extramural impulses. Others have found that unstable patients are suffering more often, from fissure in ano because stress situations lead to an increased sympatheticotonus. (2,3)

The high percentage of posterior location of anal fissure found in our study (73.3%) (Table 1) is due to the elliptical shape of the external anal sphincter and the angulation of the anal canal which leaves the posterior midline segment relatively unsupported. All cases with anterior anal fissure (22.5%) (Table 1) were confined to females with history of multiple or difficult labours and could be considered as obstetric complication resulting from improper support of the perineum over the head of the foetus during labour (9). Queidat in 1999 (10) reported that anal fissure was present posteriorly in (76%) of his patients.

Many lines of treatment of chronic anal fissure had been adopted. Anal stretch procedure was practiced by Racamier in 1928 (11) but proved to have high recurrence rate. Surgical excision of the anal fissure was first introduced by Gabriel in 1930 (12). He covered the raw area by split skin graft. Fissurectomy with posterior internal sphincterotomy was done originally by Eisenhammer in 1951 (13) then practiced by Morgan and Thompson in 1965 (14) and Lockhart Mummy in 1957 (15) but it may lead to key hole deformity. Lateral subcutaneous internal sphincterotomy was done by Hoffman and Goligher in 1975 (16) and Notaras in 1971 (17). It avoids the functional defects and complications of the anal wound.

In our study anal stretch was followed by rapid relief

of pain that was complete at the end of the second day (Table 3). Similar results were given by Kumar in 1999 (8) who reported immediated pain relief in 75% of his cases following anal dilatation. Strugnell et al. in 1999 (6) reported recurrence rate of 16% after anal dilatation and they suggested higher figures on the more prolonged follow up. In our study we have got recurrence in 6 patients (15%) and temporary incontinence to flatus in 16 patients (40%) treated by anal dilatation that disappeared completely by the end of the second week (Table 5) Similar results were reported by Saldago et al., in 1999 (4).

Fissurectomy with median posterior sphincterotomy gives disappointing results in our series. There was delayed pain relief (Table 3), delayed healing of the wound (Table 4) and followed by high incidence of incontinence (25%) (Table 5). These complications make it inferior to the other two methods in dealing with chronic anal fissure. The same conclusion was reached by Nelson in 1999 (18).

The most successful procedure for treatment of chronic anal fissure is sphincterotomy because the vicious circle is interrupted by this technique (19). Although in our study patients were not often relieved from their symptoms, however sphincterotomy bears the risk of irreversible damage to sphincter organ especially under the aspect that continence is build up through a rather complex system (3). In our study lateral subcutaneous internal sphincterotomy was followed by longer time off-work than anal stretch and healing of the fissure was more delayed, but it is considered the treatment of choice for chronic anal fissure as it has no recurrence and followed by a lower degree of incontinence (Table 5). Pescatori in 1999 (20) found an occasional smear on the under clothing in 20% of patients, the leakage of flatus in 15% and a faecal incontinence in 6% of patients after sphincterotomy. These figures were high compared to the findings obtained from our series following lateral sphincterotomy. Nyman et al in 1999 (21) and Blumberg in 1998 (22) reported no recurrence in their series after lateral subcutaneous internal sphincterotomy.

CONCLUSION

Anal stretch although has some recurrence is considered to be an efficient out-patient procedure with immediate relief of pain, immediate return to work and rapid healing of the fissure, but lateral subcutaneous internal sphincterotomy proved to be the treatment of choice for chronic anal fissure. It is a simple surgical procedure that avoids an open wound in the anal canal, followed by rapid healing of the fissure and it has no recurrence. It may be performed under local anaesthesia and does not require hospitalization.

REFERENCES

1. Jost W H (1999): Incidence of anal fissure in nonselected neurological patients . Dis. Colon Rectum Jun.42 (6) 828.
2. Schouten WR, Briel JW, Auwerda JJ, De Graf EJ (1996): Ischaemic nature of chronic anal fissure. Br. J. Sug. Jan 83(1) 63-5.
3. Staumont G, Suduca J M (1998): Anal fissure: New physiopathologic and therapeutic concepts. Gastroenterol.Clin.Biol. Jun.22 (5)148-54.
4. Salgado O, Torrbredella L., Berman IR. (1999): Headaches in the treatment of anal fissure. Dis. Colon Rectum Aug.42 (8)1106.
5. Sumokovic D, Smejkal K, Flavarsky J, Repasky L (1999): Treatment of chronic anal fissure with lateral sphincterotomy. Bratisl Lek listy Feb., 100 (2) 89-91.
6. Strugnell N A, Cooke SG, Lucarotti ME, Thomson WH. (1999): Controlled digital anal dilatation for chronic anal fissure .Br.J. Surg . May.86 (5) 651-5.
7. DiBella F, Blanco G F, Giordano M, Torelli I(1999): Our experience in internal medioposterior sphincterotomy with anoplasty. Minerva Chir Jul.54 (7-8): 545 - 9.
8. Kumar N (1999): Changing patternes of treatment for chronic anal fissure Ann R Coll. Sug. England Mar. 81(2)41.
9. Brugman T, Bruyninx L, Jacquet N.J. (1 999): Fissure -in-ano,to divide or not to divide Acta Chir Belg. Oct. (5)215-20.
10. Queidat D (1999): A comparative study in anal fissure treatment. J. Med Liban May .47 (3)164-8.
11. Racamier (1928): Quoted from Goidmans. C, Zilberman. M and Werbin.N(1986): Bacteraemia in anal dilatation. Dis-Colon Rectum.29:304-305.
12. Gabriel, W.B. (1930): The treatment of pruritis ani and anal fissure. Br.Med. J. 2: 311.
13. Eisenhammer, S (1951): The surgical correction of chronic internal anal (sphincteric) contractions. S. Afr. Med. J., 25: 486-489.
14. Morgan, CN. and Thompson, H.R. (1956): Surgical anatomy of the anal canal with special reference to the internal sphincter and conjoint longitudinal muscle. Ann. R. Coll Surg. Eng., 19: 88.
15. Lockhart Mummery, H.E. (1957): Operative surgery. Part 11 London, Butter Worths.
16. Hoffmann D.C., Goligher J.C. (1975): Lateral subcutaneous internal sphincterotomy in treatment of chronic anal fissure. Brit. Med.J.3, 673.
17. Notaras M.J. (1971): The treatment of chronic anal fissure by lateral subcutaneous internal sphincterotomy, Atechnique and results. Br. J. Surg. Vol.58 No.2.
18. Nelson RL (1999): Meta analysis of operative techniques for fissure in - ano.Dis colon Rectum Nov.42 (11)1424-8.
19. Jonas M, Lobo DN, Gudgeon AM (1999): Lateral internal sphincterotomy is not redundant in the era of glyceryl trinitrate therapy J. R. Soc.Med. Apr.92 (4)186-8.
20. Pescatori M (1999): Soiling and recurrence after internal sphincterotomy for anal fissure. Dis Colon Rectum. May 42 (5) 687-8.
21. Nyman DC, Pemberton JH (1999): Long term results of lateral internal sphincterotomy for chronic anal fissure. Dis Colon Rectum.Oct. 42 (10)1306-10.
22. Blumberg N A (1998): Regarding internal sphincterotomy for anal fissure. Dis Colon Rectum Aug. 41(8)1071-2.