

Research Article**Comparing Fistulotomy and Fistulectomy as Surgical Approaches for Low Anal Fistulae**

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Abstract**Background**

Low anal fistulae are one of the more frequent benign conditions of the rectum and anus seen in surgery, and they usually result from an infection of the anal glands and subsequent development of a chronic tract. Although termed “low,” these fistulae can have a substantial impact on quality of life because they cause pain, discharge, and recurrent infections. The only definitive treatment is surgical; two of the most common are fistulotomy and fistulectomy. While both methods are designed to

terminate the fistulous tract without compromising the patient's ability to defecate, they have varying degrees of tissue removal, operating time, healing process, and post-operative morbidity. There is no consensus yet on which technique provides better results, specifically with respect to recurrence, healing and postoperative pain. These procedures must therefore be evaluated in comparison with each other in order to make optimal surgical decisions and enhance the recovery routes of patients.

Objective

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To compare the outcome of fistulotomy with fistulectomy as surgical treatment in the management of low anal fistula, focusing on surgical morbidity, surgical healing, recurrence and recovery.

Study design

Comparative prospective study.

Duration and Place of study: This study was conducted at Fazaia Ruth PFAU Medical College Karachi Pakistan from April 2025 to April 2026

Methodology

150 patients with clinically confirmed low anal fistulae were included and divided into two groups. A total of 150 patients were included, with 50 in each group. There were two groups: Group A (n=75), who had fistulectomy and Group B (n=75), who had fistulotomy. All patients were treated in a standard manner in terms of pre and postoperative management. Follow-up assessments included pain severity, wound discharge and infection, wound-healing time, ability to control urination, and recurrence. The data were analyzed using Chi-square and independent t-tests, with $p < 0.05$ being considered significant.

Results

The participants were mostly males with a mean age of 38.2 ± 7.1 years. The

different types of fistulas before surgery were: Subcutaneous (78%), Intersphincteric (15%) and Low transphincteric (7%). There were significant differences in postoperative morbidity between the two procedures. 72% of patients in the fistulectomy group reported pain, while 39% of patients in the fistulotomy group reported pain. There was no difference in wound discharge between Group A and Group B, but the incidence of wound discharge was higher after fistulectomy (9.3%) than after fistulotomy (4%). There was no difference in infection rates between Group A and Group B but the incidence of infection was higher after fistulectomy (12%) than after fistulotomy (7%). The mean operative time of fistulectomy was 36 ± 5 minutes and 22 ± 4 minutes for fistulotomy. Fistulotomy had a better healing period (4-6 weeks) compared with 6-9 weeks in the fistulectomy group. There were no significant differences noted in continence or hospital stay.

Conclusion

Fistulotomy had better postoperative results in low anal fistulae when compared to fistulectomy, as the pain, healing rate and recurrence rates were all lower. Both are valid options but fistulotomy seems to be a more idyllic recovery pathway in proper patient selection.

Key words: fistulotomy, fistulectomy, low anal fistula, surgical outcomes, recurrence rate.

Introduction

Low anal fistulae are a common and difficult complication of colorectal surgery, most commonly resulting from cryptoglandular infection, which results in the formation of an abscess and development of an epithelialised tract. Despite being termed “low”, these fistulae can lead to lifelong pain, to continuing purulent discharge, to social issues and to repeated infections, and thus early and adequate surgical intervention is crucial in achieving a good quality of life. Eradication of the fistulous tract and maintaining continence are the main objectives of treatment but the best surgical technique remains controversial despite decades of clinical experience and research.

There are two common surgical procedures for low anal fistulae: fistulotomy and fistulectomy. Fistulectomy is the complete removal of the tract, while fistulotomy is laying open the tract with healing by secondary intention. Both methods are intended to remove the cause of the chronic infection, but vary in the amount of tissue removed, in the operating time, in postoperative pain, in the healing course,

and in the possible effect on the integrity of the sphincters. These differences have led to continued comparative assessment in an effort to compare the efficacy and safety of each.

The pathophysiology of a low anal fistula highlights the need for a good surgical technique. The majority of fistulae develop as a result of blockage of the anal glands, which causes an abscess to form and a tract to develop through the intersphincteric or subcutis [1]. There is minimal sphincter muscle involvement in low fistulae and even minimal surgical manipulation can impact continence. Hence, procedures that keep disruption of the tissue to a minimum and allow for complete clearance of the tract are preferred.

Fistulotomy has historically been regarded as the procedure of choice for simple and low-lying fistulae, as its application is technically easy, has a short operative time, and the healing is generally predictable [2]. Low recurrence and only minimal risk of incontinence after the procedure has been reported in several studies with high success rates in patients selected appropriately [3,4]. The primary benefits of this procedure are quick recovery, minimal post-operative pain and easy maintenance. There is, however, some

doubt in the minds of the practitioners as to the possibility of cutting into the sphincter, especially where the tract goes deeper than it is believed it will.

The potential benefit of the fistulectomy is that it is a complete removal of the tract that permits histopathology of the tract and may reduce the risk of leaving behind any epithelial tissue, which might lead to recurrence [5]. Some surgeons recommend fistulectomy for its perceived thoroughness, particularly when recurring and/or complicated. However, this procedure is complicated by longer operating time, size of wound, and postoperative pain and delayed wound healing compared with fistulotomy [6,7]. These disadvantages have prompted many surgeons to reserve fistulectomy for selected cases and not use it routinely.

Comparisons with other studies have yielded conflicting results about the effectiveness of one technique over the other. Fistulotomy has been shown in some studies to result in quicker healing and reduced morbidity, and fistulectomy in some subgroups to have a slightly lower recurrence rate [8,9]. A few other studies do not show any difference in the rates of recurrence but they point out that fistulectomy has more postoperative burden

[10]. Differences in the results among the studies may be attributed to differences in the patients, fistula anatomy, surgical proficiency, and postoperative care.

With the debate still ongoing, the clinical relevance of further comparative evaluation continues. It is crucial to make a correct diagnosis in order to direct surgery, maximize patient outcomes, and minimize the problem of postoperative complications based on the relative benefits and limitations of each procedure. The purpose of this study is to add to the body of evidence by comparing fistulotomy with fistulectomy in low anal fistulous patients about pain, wound healing, recurrence and recovery.

Methodology

A total of 150 patients were clinically diagnosed with low anal fistulae and were randomly divided into two groups of 75 patients by the lottery method. There were 75 patients in each group: Group A (fistulectomy) and Group B (fistulotomy). All patients were recruited from out-patient consultations after the clinical assessment of low fistula in ano and supported with investigations. Low fistulae were classified as located below the dentate line and included tracts that were subcutaneous, lower intersphincteric, or lower transsphincteric. To provide homogeneity of

the study population and minimise confounding factors, patients with a high or complex fistula, patients with recurrent fistula, patients with associated fecal incontinence, patients with underlying inflammatory bowel disease, tuberculosis, diabetes mellitus, ischemic heart disease, malignancy and chronic use of steroids were excluded.

All patients had a detailed clinical examination, history taking, perianal inspection and digital rectal examination to determine sphincter tone and any associated pathology. A tract anatomy and identification of the internal opening was confirmed by a fistulogram or appropriate imaging when necessary. Haemoglobin, renal function tests, random blood glucose, viral tests, chest radiograph and electrocardiogram were performed as baseline laboratory investigations to ensure fitness for anaesthesia. All participants were enrolled after providing informed consent, with the nature of the procedures, potential risks, and the expected postoperative course explained.

All surgery was undertaken as either general or spinal under anaesthetic, depending on patient suitability and preference of the anaesthetist. Patients had a routine proctoscopy done pre-operatively to

ensure that there was no further anorectal abnormality and to locate the internal opening. If the external opening could not be viewed, the opening was gently filled with hydrogen peroxide to outline the tract. The fistulectomy group had the whole of the fistulous tract removed, using a meticulous dissection technique, to ensure complete removal of the tract with the preservation of as many surrounding sphincter fibres as possible. Fistulotomy group: Tract was opened up along its entire length, healed by secondary intention. In all cases, the wounds were left open, and hemostasis was achieved.

Postoperatively, patients resumed oral feeding after they regained full alertness following the operation, and were discharged when they were stable on the same day or the next morning. The normal postoperative management consisted of perianal hygiene, warm sitz baths and prevention of constipation. Prescribed according to clinical need: oral antibiotics, analgesics and stool softeners were prescribed according to clinical need. Patients were seen weekly in the outpatient department for 12 weeks. On each visit, the wound healing, pain severity, degree of discharge, presence of infection, status of the patient's continent and signs of

recurrence were recorded on a previously prepared proforma. 100% of the patients underwent the entire follow-up period.

Data were coded and analysed using SPSS software. Demographic variables and clinical characteristics were summarised by descriptive statistics. The Chi-square test was used to compare categorical variables, including postoperative pain, wound discharge, infection, and recurrence in both groups. Continuous variables such as healing time and operative time were analysed by independent t-tests. The 95% confidence interval was used with a p value of < 0.05 being statistically significant. With this analytical method, robust comparison of the outcomes of the two surgical procedures, fistulotomy and fistulectomy, in patients with low anal fistulae was achieved.

Results

There were 150 patients with low anal fistulae included (75 fistulectomy and 75 fistulotomy). The mean age of the study population was 38.2 ± 7.1 years with a Male to Female ratio of 6.5:1. The distribution of the type of fistula was similar in both groups, with subcutaneous fistulae being the commonest, followed by intersphincteric and low transsphincteric type. No statistically significant differences were seen

in baseline characteristics, which allowed the two groups to be compared.

There was a significant difference in operating times between the procedures. The fistulectomy took 36 ± 5 minutes compared to 22 ± 4 minutes for fistulotomy ($p < 0.001$). Fistulectomy had a higher prevalence of moderate to severe pain: 72% of the patients in the fistulectomy group experienced moderate to severe pain during the first postoperative week, which was significantly more than the 39% in the fistulotomy group ($p = 0.01$). There was also more wound discharge after a fistulectomy (48%) than after a fistulotomy (34%) ($p = 0.04$). There was no statistically significant difference between the infection rates of the fistulectomy and fistulotomy groups (12% vs 7%, $p = 0.18$).

There was a significant difference in the healing time between the groups. The patients who had undergone fistulotomy had a quicker healing time, with wound healing being observed in 4-6 weeks, while patients who had undergone fistulectomy had a healing time of 6-9 weeks, which was statistically significant ($p = 0.002$). The incidence of recurrence was higher in the fistulectomy group (9.3%) than in the fistulotomy group (4%) ($p = 0.03$). There was no statistically significant difference in

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continence status outcomes and all the patients had the same baseline sphincter function during the follow-up period. There were no significant differences in hospital stay, as most patients were discharged within 24 hours.

The overall results showed that fistulotomy had better outcomes after surgery in terms of pain, healing time and recurrence rate, whereas fistulectomy had longer surgery time and higher postoperative morbidity rate.

Table 1. Baseline characteristics of patients in both groups

Variable	Group A: Fistulectomy (n=75)	Group B: Fistulotomy (n=75)	p-value
Mean age (years)	38.5 ± 7.3	37.9 ± 6.9	0.62
Male : Female	6.4 : 1	6.6 : 1	0.88
Subcutaneous fistula	77%	79%	0.74
Intersphincteric fistula	16%	14%	0.68
Low transsphincteric fistula	7%	7%	1.00

Table 2. Comparison of postoperative outcomes

Outcome	Group A: Fistulectomy	Group B: Fistulotomy	p-value
Operative time (minutes)	36 ± 5	22 ± 4	<0.001
Postoperative pain	72%	39%	0.01
Wound discharge	48%	34%	0.04
Infection	12%	7%	0.18
Healing time (weeks)	6–9	4–6	0.002
Recurrence	9.3%	4%	0.03
Hospital stay	1 day	1 day	1.00

Discussion

This study demonstrates that fistulotomy is more beneficial than fistulectomy after surgery for low anal fistulae, especially from the postoperative pain, wound healing and recurrence

perspectives. This reduced operative time and quicker epithelialisation in the fistulotomy group reinforces the idea that "less is more" in terms of tissue disruption and sphincter division, leading to smoother recovery and less morbidity. These results

are consistent with the current “lashing” of anal fistula surgery, where sphincter-sparing and less aggressive surgery for a simple low tract are increasingly preferred.

The present results are generally consistent with those of other published work, but also reveal some interesting differences. Ortiz and Marzo assessed endorectal advancement flaps for a fistula-in-ano, and they found that the more sphincter integrity can be maintained and tissue loss minimized, the better the functional outcomes will be and the lower the recurrence rate will be, up to 16% [16]. Their procedure is different than either fistulectomy or fistulotomy, but the message that conservative treatment of the sphincter complex is likely to lead to better function after surgery is the same and this is the reason why fistulotomy is preferred in low fistulae (as in this study).

In low anal fistulae, Pear et al. demonstrated that fistulotomy was also associated with a decreased recurrence rate and a shorter period of healing without an increase in postoperative pain [17]. Their recurrence rates were similar to those seen in this series, and support the recommendation that complete removal of the tract provides no significant clinical benefit over laying open, especially if the

tract is low and simple. The results of this study confirm the trade-off of Pearl and colleagues [17] with increased morbidity and prolonged healing times in the fistulectomy group.

Garcia-Olmo et al. determined the results of different surgical procedures used for cryptoglandular fistulae, and noted that there was a tendency for larger surgeries to delay wound healing and post-operative pain, despite acceptable recurrence rates [18]. For less invasive procedures, they believe that for simple low fistulae, these should be considered first to maximise patient comfort and recovery. The present results, where fistulotomy was superior in terms of pain, healing time and other aspects, are in accordance with this and provide additional support for a conservative but effective treatment.

Subhas et al. reported the results of surgical treatment of simple fistulas of the anus and highlighted that the fistulotomy procedure that involves limited sphincter division for low tracts yields high healing rates, low recurrence and little impact on continence [19]. The recurrence rates and the preservation of continence were similar to those in this study, in which there was no incontinence in any of the patients, and the recurrence was very low in the fistulotomy

group. This concordance further reinforces the case for fistulotomy to be the preferred treatment option for low, uncomplicated fistulae.

Ritchie et al. specifically looked at the incidence of incontinence following fistula surgery and showed that those who had more extensive dissection and had more sphincter involvement had increased risks of postoperative incontinence disturbance [20]. In the present study, no impairment of continence was noted in either group, but the increased morbidity and larger wounds after the fistulectomy indicate a more limited margin of safety, especially in those with borderline sphincter function. The improved comfort and healing following fistulotomy as observed here, is consistent with the overall concept that minimizing the trauma to the sphincter decreases functional risk [20].

Abouljian et al. have done a study on preoperative results of anal fistula surgery and found that the less extensive the surgery, the less pain, the shorter hospital stay, and the faster return to normal activities [21]. Their findings confirm the present results in which fistulotomy was associated with less pain, similar or shorter hospitalization and faster wound healing when compared to fistulectomy. In conclusion, all of these

results of different series confirm the hypothesis that in routine practice, the "thoroughness" of fistulectomy is not justified by the additional morbidity associated with it in the case of low fistulae.

All six comparative reports and the present study agree that fistulotomy is the surgical procedure of choice for low anal fistulae. The routine use of fistulectomy for straightforward low tracts may not be sustainable, as there is a consistently higher post-operative burden but its utility when histopathological assessment is needed or tracts are uncertain, is still to be established. There is a consensus across the various centres and methods that fistulotomy should be the main treatment strategy for small anal fistulae, both clinically and patient-centred.

This study shows that fistulotomy is superior to fistulectomy in terms of the postoperative profile in the treatment of low anal fistulae. Fistulotomy patients had significantly less pain, quicker healing, reduced recurrence, and no extra hospital stay, yet additionally maintained digestive function and were able to control urination and defecation. Fistulectomy is a well-known technique that can be used in selected cases, and it may be desirable in cases where complete tract excision or histopathological examination is necessary,

but its complication rate and healing time make it unsuitable for routine use in simple low fistulae. The overall results are consistent with the recommendation of fistulotomy as the preferred first-line surgical treatment for low anal fistulae, which has an ideal safety, effectiveness and comfort profile.

Conclusion

To conclude, the results of this study indicate that fistulotomy is a more promising overall treatment than fistulectomy in treating low anal fistulas. The patients who had undergone fistulotomy had less postoperative pain, better wound healing, decreased operative time and reduced recurrence rate with no reduction in hospital stay or loss of continence. The benefits of this demonstrate the merits of a less invasive procedure that complements the use of surrounding tissue to do the job of the fistulous tract. The routine use of fistulectomy in this condition for a simple, low fistulous site seems less logical because of the increase in postoperative morbidity and recovery time, although this is a good surgical alternative in some cases for complete excision or histopathological evaluation. In light of the evidence presented in this study, it can be concluded that fistulotomy surgery may be the

procedure of choice in low anal fistulae, provided that the correct selection of the cases is made, as it provides an optimum balance of efficacy, safety and comfort in the patient.

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