

FUNCTIONAL OUTCOME OF FISTULECTOMY WITH PRIMARY REPAIR OF SPHINCTER IN TREATMENT OF COMPLEX FISTULA IN ANO

MOHIT KUMAR BADGURJAR*, KHUSHBOO DHARAIYA, SUMAN PARIHAR, SANJEEV KUMAR TUDU, NEHA BAPORIKAR

Department of Surgery, Geetanjali Medical College and Hospital, Udaipur, Rajasthan, India.

*Corresponding author: Mohit Kumar Badgurjar; Email: mohitkumar294@gmail.com

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ABSTRACT

Objective: A fistula in ano is a common surgical issue encountered all over the world. There are multiple treatment options, especially in transphincteric fistulas, creating dilemma in choosing the best. However, fistulectomy is a time-tested treatment with a low recurrence rate, but stool incontinence due to anal sphincter injury is the two most severe side effects of treating anal fistulas. The objective of the study was to evaluate the surgical outcome of "fistulectomy with primary repair" for the treatment of complex fistula in ano involving anal sphincter.

Methods: The prospective observational study was conducted including 43 patients undergoing fistulectomy with primary repair of sphincter for fistula in ano. The following outcomes were evaluated on follow-up: Incontinence, recurrence, pain, bleeding, wound dimension, healing time, and length of hospital stay.

Results: In the present study, it was observed that fecal incontinence was present in none of the patients in the post-operative period while 4 patients (9%) had mild flatus incontinence. Only one patient had a recurrence of fistula at post-operative day 180.

Conclusion: For the treatment of complex anal fistulas, Fistulectomy with Primary Repair of Sphincter is a safe and efficient procedure that has a promising success rate and also has minimal impact on continence.

Keywords: Fistulectomy, Primary sphincter repair, Fistula in ano, Surgery, Complex fistula in ano.

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INTRODUCTION

Fistula in ano is a hollow tract lined with granulation tissue connecting a primary opening inside the anal canal to a secondary opening in the perianal skin.

The fistula in ano is classified as Simple fistula and complex fistula. Simple fistula is a single tract, subcutaneous tract and includes superficial, intersphincteric, and low transsphincteric fistula (<30% of external sphincter involved) complex fistulas include high transsphincteric fistula (more than 30% external sphincter involved), supra-sphincteric, extra sphincteric fistula is often horseshoe and has multiple tracts, and is recurrent [1]. It has been impossible to devise a perfect surgery for a complex fistula in ano. One always has to maintain an optimum balance between recurrence and incontinence, especially in transsphincteric fistula. Fistulectomy with primary suturing of sphincters seems to have the combined advantage of a low recurrence rate and a satisfying continence score. Although fistulectomy with primary suturing of the sphincters is not the perfect surgery, it may be the best that we have so far for a complex fistula in ano.

In the present study, we thus aimed to evaluate the results of fistulectomy with primary suturing of the sphincters in the treatment of complex fistula in ano in terms of: Post-operative anal incontinence, pain, recurrence, infection, bleeding, hospital stay, and healing time.

METHODS

After obtaining approval from the Institutional Research Ethics Committee, we conducted a prospective observational study in which patients diagnosed with sphincter involving complex fistula in ano (primary as well as recurrent) were included (n=43). Diagnosis was

made by clinical history, digital-rectal, proctoscopic examination, and magnetic resonance imaging (MRI) fistulograms of the perineal region. All these patients underwent fistulectomy with primary sphincter repair and observed in terms of post-operative anal incontinence, pain, recurrence, infection, bleeding, hospital stay, and healing time.

Operative technique

The patients were placed in lithotomy position under spinal/general anesthesia. The fistulous tract and internal opening were delineated with 5 Fr feeding tube and methylene blue dye. The tract was excised from the external opening to internal opening with the help of monopolar cautery, after giving traction to fistula tract. Sphincter fibers were sharply cut to dissect the fistulous tract. The tract was excised completely. After the complete excision of fistula, the sphincter's muscle fibers were identified and repaired in layers by interrupted horizontal mattress technique using polydioxanone 2-0 suture. The mucosal layer was repaired by polyglactin-interrupted suture from cranial to caudal end. A corrugated drain with or without an infant feeding tube was placed in the cavity. Skin and subcutaneous wound were left open for wound wash (Fig. 1a and b).

RESULTS

In the present study, 43 patients were included. Mean age of the patients was 36.7 ± 13.4 years, ranging from 18 to 68 years, and 88.4% (n=38) were males. Almost all patients had pain and pus discharge as their complaints with variable incidence of hard stools, bleeding, fever, and pruritus. It was observed that three patients had multiple external opening, rest of the patients had a single external opening with mean distance of external opening from anal verge was 2.92 ± 1.5 cm (range 1–9 cm). Associated problems included predominantly pile (51.2%, n=22) and fissure in ano (69.8%, n=30).

On MRI, it was observed that High Transsphincteric Fistula was present in 48.9% (n=21), low-lying transsphincteric fistula was present in 37.2% (n=16) had rest 14% (n=6) had Transsphincteric Fistula with supralelevator extension. All patients underwent Fistulectomy with Primary sphincter repair except 20.9% (n=9) patients who had concomitant abscess which required drainage along with fistulectomy. It was observed that no patient suffered fecal incontinence in the post-operative period while 9% of patients (n=4) had mild flatus incontinence in 1st week of follow-up which got improved on subsequent days. Only 2% (n=1) of patient had a recurrence of fistula. Immediate postoperatively, mean VAS score for pain was 7.2, which decreased subsequently to 4.4 at the end of 1st week and 2 at the end of 2nd week (Fig. 2). Mean wound size was 23.3 ± 14.6 cm² immediately postoperatively. It reduced to 18.7 ± 13.2 cm² at day 7 postoperatively, then to 14.2 ± 9.1 cm² at day 15 postoperatively, then to 7.13 ± 3.5 cm² at day 30 postoperatively, 3.6 ± 2.1 cm² at day 45 postoperatively and then to 1.69 ± 0.6 cm² at day 60 postoperatively (Fig. 3). Furthermore, mean time to healing normal scarred tissue was 37.6 days (ranging from 15 to 70 days). Mean length of hospital stay was 4.53 ± 1.4 days, ranging from 3 to 7 days. Hospital stay was up to 5 days in 51.2% of the patients.

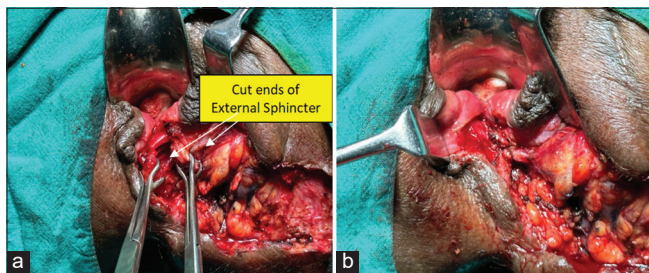


Fig. 1: (a) Post-fistulectomy, cut ends of external sphincter; (b) primary sphincter repair with pds 2-0 suture

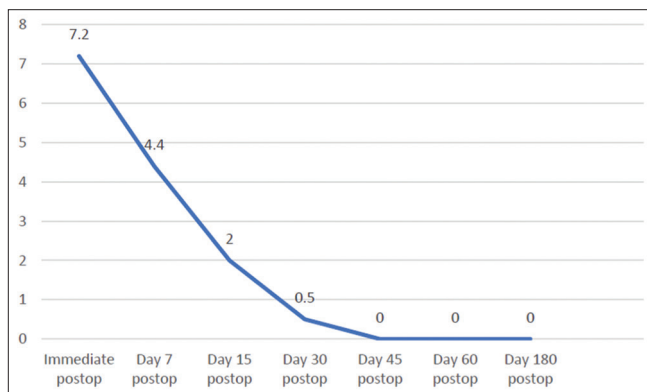


Fig. 2: Post-operative mean VAS score for pain on sequential follow-ups

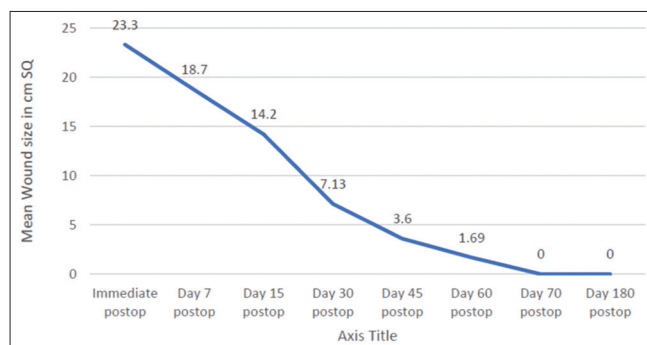


Fig. 3: Mean wound size in cm² for pain on sequential follow-ups

DISCUSSION

"All is well that ends well" is a sartorial humor so aptly metaphorized by Shakespeare in one of his plays, referring to fistula in ano. It is a surgical condition fraught with anxiety and frustration with lack of adequate treatment at that time and continues to do so till date. As far as fistulectomy is concerned, the proximity of sphincter complex with fistula in ano makes it much more complicated with a high risk of incontinence, especially when sphincter is involved. To plan the management we need to balance out between recurrence and post-operative discomfort in terms of pain, incontinence, etc. There is a wide spectrum of sphincter preserving procedures ranging from fistula plug and ligation of intersphincteric fistula tract to laser. All these procedures are associated with low incontinence rates but recurrence rates are quite high [2]. On the other hand, Seton surgeries (cutting and draining) are associated with considerable pain, inconvenience, or frequent recurrence. Fistulectomy with primary sphincter repair is considered ideal in terms of low recurrence rates, minimal incontinence, and good quality of life, with some amount of skepticism [3,4].

The recurrence rate in transsphincteric anal fistulas is still quite high, but this problem is not yet solved by new sphincter-preserving techniques. Fistulectomies with primary sphincter reconstruction have a lower recurrence rate compared to the sphincter preserving techniques [4-8]. In our study, the recurrence rate with fistulectomy and primary reconstruction was in the range of the results published by Perez *et al.* [9] and Lux and Athanasiadis [8] which was 7.1%, and 0.0%, respectively. However, the low recurrence rates may be attributed to the number of patients we have included and the follow-up duration.

The rate of incontinence for fistulectomy and sphincter reconstruction differs between 3.6 and 21.7%, with minor incontinence in most cases [10-15]. Among all the 43 participants in this study, it was observed that none of them experienced fecal incontinence even in the immediate post-operative period. Although 9% of patients (n=4) had new incontinence of flatus which was only till 1st week of follow-up. Verma *et al.* in their similar study observed mild fecal incontinence in 10% of their patients who had multiple external openings. However, all these patients regained continence within 6 weeks without any intervention [16]. Immediate postoperatively, the mean VAS score was 7.2, which decreased subsequently to 4.4 at the end of 1st week and 2 at the end of 2nd week which was relatively high initially as compared to other studies but by the end of 2nd week it was comparably low [17].

CONCLUSION

Based on the results of our study, we conclude that, firstly, fistulectomy with primary repair of sphincter is a feasible and safe surgical procedure for the treatment of sphincter involving complex fistula in ano with minimal complications. The most fearful complication is incontinence and, in our study, this was also found to be experienced by none of our patients. Second, our study also recommends that this procedure is associated with a low recurrence rate. Although this study is not a comparative study for various procedures, the recurrence is as low as 2% in our study which is lower than various other articles published for sphincter preserving surgeries. Although, in future, large sample multi-centric comparative studies with longer follow-up duration are required to support our findings.

AUTHORS' CONTRIBUTION

1. Dr. Mohit Kumar Badgurjar- Conceptualization, Methodology, Validation, Investigation, Writing - Review & Editing, Writing - Original Draft, Supervision
2. Dr. Khushboo Dharaiya Formal analysis, Investigation, Writing - Original Draft, Data Curation, Resources
3. Dr. Suman Parihar- Validation, Supervision
4. Dr. Sanjeev Kumar Tudu- Validation, Supervision
5. Dr. Neha Boparikar- Resources, Writing - Review & Editing

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