Original Research Article

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Complex anal fistulae management by combined technique approach: an experience

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ABSTRACT

Background: The aim of this study is to evaluate our experience in the management of complex anal fistulae by combined technique approach. Ideal surgical treatment for complex anal fistula should aim to eradicate the source of infection and promote healing of the tract, while preserving the sphincters and the mechanism of anal continence. Even with the evolving newer techniques complex anal fistulae have higher rates of recurrence and functional disability as anal incontinence. The requirement of multiple surgeries for recurrence and the newer techniques like anal fistula plug are expensive and will become a burden for patients living in developing countries like ours. Thus, apart from Ligation of Intersphincteric fistula tract, the use of cutting seton is the main surgical method practiced here. This article focuses on the approach to the complex anal fistula management through evidence-based treatment strategies.

Methods: Author conducted a prospective study of 35 complex anal fistulae patients undergoing combined technique approach with cutting Seton, Ligation of Intersphincteric Fistula tract and fistulotomy.

Results: All patients recovered well with no complications in postoperative period. After 2 years of follow up patients are recurrence free and only 2 patients had partial incontinence with improving trend.

Conclusions: The use of cutting Seton in high anal fistula is an effective technique. LIFT technique is good for Transphincteric tracts without previous scarring; it can be easily learned and applied. We can conclude that combined technique was an effective procedure and valid alternative for complex anal fistula management.

Keywords: Complex anal fistula, Combined technique, Cutting seton, Fistulotomy

INTRODUCTION

Anorectal fistulae are a nuisance causing pain, discharge and discomfort to patients who are affected. The management of perianal fistulae has been documented in the literature for thousands of years, dating back to the time of Hippocrates in 400BC. One of the most clinically useful classification systems for perianal fistulae (by the American Gastroenterological Association) divides them into simple and complex - this classification is helpful in decision making for surgical approach.¹

Perianal Fistulae are termed "complex" when:

- Track crosses more than 30% to 50% of the external sphincter (high transsphincteric, suprasphincteric and extrasphincteric fistulas).
- Anterior tract in a female.
- Recurrent fistula.
- Has multiple tracks.
- Patient having pre-existing incontinence.
- Local irradiation for malignancy.
- Crohn's disease.^{2,3}

Management of Complex anal fistulae is a daunting task for surgeons requiring multiple surgeries and the use of sphincter sparing techniques. In patients of complex fistulae, where a significant proportion of the anal sphincter is involved, great concern will be there about damaging the sphincter and resulting anal incontinence. This is quite inevitable following conventional surgical treatment. Hence over the last two decades, many sphincter-preserving procedures have been introduced with the common goal of minimising the injury to the anal sphincters and preserving anal continence.

The degree of anal incontinence depends on the amount of damaged sphincter muscle, pre-existing sphincter damage, and scarring of the anal canal.⁴

It is important to understand the anatomy of the anal sphincters & the etio-pathological process of the disease to provide better patient care. High Fistulae have high internal openings. More than 90 % of all fistulae are caused by crypto-glandular infection.⁵

The opening of the gland duct is located at crypts near Pectinate line; thus, it corresponds to the internal opening of the fistula. The infection may spread above the Anorectal ring, but the internal opening is always found at the Pectinate line. Some patients may have a high secondary internal opening at the site where a high intersphincteric fistula has ruptured intra-anally or a secondary opening has been created Iatrogenically at a previous surgery. Fistulae caused by Crohn's disease or other causes can have a high primary internal opening.

The basic principle of the treatment is correct identification of the fistula tracts and internal opening, complete destruction of the tracts, preservation of anal sphincter function and sealed closure of the internal opening coupled with adequate drainage of the fistula tract. A simple or low fistula-in-ano is best treated with a primary fistulotomy, it involves division of the underlying sphincter tissue. In combined technique it is applied to the extra-sphincteric tract after dealing with trans-sphincteric tract.

LIFT

Ligation of Inter-Sphincteric Fistula Tract also known as LIFT technique was introduced by Rojanasakul. In this procedure the fistula tract is identified between the internal and external sphincters (inter-sphincteric plane) and subsequently divided and ligated. In his study he initially reported a 94% success rate with no impact on continence.⁶ This procedure is easier to apply and also sphincter preserving, thus it's safe and effective.

SETON

It is the oldest surgical approach, first described by Hippocrates. The Seton placement has been recommended to control infection by applying loose drain, or by cutting through the sphincter muscle gradually. In cutting Seton, the Seton is secured tightly within the fistula tract, with intentional pressure placed on the tract itself. The Seton can then be serially tightened in the outpatient visits over time. The principle behind this is that slow division of the muscle allows for fibrosis and scarring and that overall integrity of the sphincter complex is maintained.⁴

Many different types of Seton's can be used for this, including the silastic Seton, the silastic Seton can be replaced with a silk suture which is narrower, and inflammation-inducing. This allows for faster cutting and induction of scarring. This procedure requires frequent visits to the surgeon and sometimes is very painful requiring analgesics.

The mostly favored method of using a Seton is to use it as a "draining" Seton rather than a "cutting" Seton. Although a cutting Seton can have higher success rate as high as 99%, it can cause severe discomfort to the patient also can have an incidence of incontinence as high as 18%-25%.^{7,8}

METHODS

It is a prospective study conducted for 35 consecutive patients admitted for complex anal fistulae in our Teaching hospital in North Karnataka region from January 2015 to January 2017.

The sample size calculation was done using open epi software 2.3.1 version

Formula used DEFF x Np(1-P) [d2/Z21-a/2] x (1-N)+p(1-p)

N-Infinite population, P-8.6% Absolute error(d)-7%. Sample size was 35

Inclusion criteria

- Patients of age group above 18 years.
- Patients with complex anal fistulae.

Exclusion criteria

Patients with fistulas secondary to anal tumor, Ano-rectal malformation, and trauma.

Surgical technique

All patients underwent preoperative regular investigations, MRI evaluation and mechanical bowel preparation before surgery. All surgeries were performed under spinal anesthesia. The treatment method was decided during the surgery based on the relationship of the fistulous tract with the sphincter muscles. Patients were placed in prone position with padding of chest and

abdomen in Jackknife position with buttocks separated by plaster.

- Mostly hybrid techniques used in managing the cases.
- Extra sphincteric tract treated with curettage, excision and laying open.
- Associated inter sphincertic abscess were drained completely and curetted.
- Transphincteric tracts were treated with Seton in 13 cases and LFT in 5 cases.
- Seton's used were- Silk, Infant feeding tube no 5, Simple cotton thread.

After primary opening was located with fistula probe, a flexible metal fistula probe was gently passed through the fistula tract from the secondary opening and pulled out through the primary opening (Figure 1).

After the fistula tract was identified, mucosa of internal opening and skin overlying the fistulous tract were incised, the portion of the tract outside was put lay-open and curetted, to clear any potential lateral secondary tracts and to make sure postoperative drainage.



Figure 1: Fistula probe.

The Seton was tied to the tip of the metal probe and inserted through the main tract by pulling into position using a silk suture. Then, the Seton was tied over itself or with a silk suture on the sphincter tightly.

Lift is performed by accessing the Intersphincteric plane with the goal of performing a secure closure of the internal opening and removing the infected cryptoglandular tissue.

Intersphincteric tract is identified and isolated by performing meticulous dissection through the intersphincteric plane after making a small incision overlying the probe connecting the external and internal openings. Once isolated, the intersphincteric tract is hooked with a small right-angle clamp, and the tract is ligated close to the internal sphincter and divided distal to the point of ligation.

Hydrogen peroxide is injected through the external opening to confirm the division of the correct tract. The external opening and the remnant fistulous tract are curetted to the level of the proximity of the external sphincter complex. Finally, the intersphincteric incision is loosely re-approximated with an absorbable suture. The curetted wound is left opened for dressing.

Postoperative evaluation

Postoperatively, all patients received analgesics and paraffin-based laxatives and were advised along with Sitz bathe. Antibiotic treatment was administered in the presence or purulent or muco-purulent discharges. The patients were informed in detail about the presence of the Seton. The patients were regularly seen every 7 to 14 days until complete healing. The Seton was gradually tightened patients were reviewed at three, six and twelve months to access anal continence and exclude any recurrence. Continence was assessed by the patient's ability to hold solid stool, liquid stool, and flatus and by the assessment of anal sphincter tone during rectal examination.⁹

Follow-up

Patients were reviewed in OPD up to 12 months at regular intervals. The primary end point of this study was success or failure of treatment. Success was defined as closure of both internal and external openings, absence of purulent drainage, and absence of abscess formation. First-line assessment was performed using the entire series of patients. Recurrence was defined as reappearance of the fistula or development of an additional fistula at or close to the original tract while persistence was defined as continuous purulent discharge several weeks after the drop of the seton. ¹⁰

RESULTS

Between April 2015 and September 2017, 35 consecutive patients with complex fistula in ano fulfilling the inclusion and exclusion criteria were treated with the combined technique approach.

Table 1: Age and sex distribution.

Age group	Male	Female
20-30	10	5
30-40	6	2
40-50	3	4
>50	3	2

Table 2: Distribution according to Goodsall's rule.

Position	Male	Female
Anterior	3	1
Posterior	20	11

Among 35 patient's, 16 patients were having recurrent fistulae. Commonest site for metastasis was regional lymph node. 8 patients had secondary deposits in liver, 2 were having deposit in anterior abdominal wall and two female were having secondary deposits in both ovaries.

DISCUSSION

In present study 23 were men and 12 women with a sex ratio of 2:1, it is comparable to other studies done by Chatterji et al, with similar incidence.¹²



Figure 2: Seton.

Mostly combined techniques are used in managing the cases -

- Extra-sphincteric tract was treated with curettage, excision and laying open of Fistula tract
- 29 cases of Tran-sphincteric tracts were treated with Seton (Figure 2) and 11cases underwent LIFT procedure.
- Post operatively patients were analyzed for pain, discomfort and continence.
- Patients recovered well without any complications in post-operative period.
- Patients were discharged with advice of SITZ bathe and regular follow up in the OPD.

Wounds mostly healed by 1 to 2 months of Seton for high anal fistulas

- All the follow up cases are recurrence free.
- Only 2 have a partial incontinence with improving trend (Table 3).
- No cases had anal stenosis.

Table 3: Distribution according to Goodsall's rule.

Study	No. of subjects	Incontenence	Recurrence
Zbar et al	16	2	1
Chatterjee et al	16	1	1
Present study	35	2	0

The treatment of complex anal fistula has always been a challenging task for surgeons. The two main complications include recurrence and anal incontinence, their frequency varies according to different studies (Table 3).

The present study had 0 recurrences and 2 patients had partial incontinence with improving trend.

In our study only 2 had partial incontinence with 0 recurrence, this is comparable to study done by Zbar et al., with 1 recurrence and 2 anal incontinence. ¹¹ In the study by Chatterji et al, no patients developed major fecal incontinence. Fistula recurred in one patient within a year and one patient had occasional incontinence to flatus. ¹²

The recurrence can usually be treated by the newer operation techniques, but many interventions result in incontinence. Complex fistula management should always take in to consideration the need to spare sphincter function.

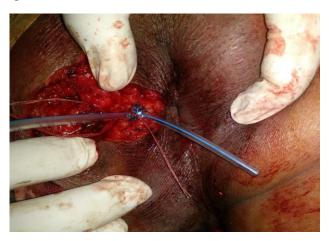


Figure 3: Fistulotomy with Seton application.

Based on other studies, intra-operative preservation of internal anal sphincter at the time of seton insertion for anal fistula seems to reduce the postoperative fecal incontinence without a substantial increase in recurrence rates.¹³

CONCLUSION

The availability of various treatments existing indicate that there is no universally successful solution. Hence in combined technique by combining these available techniques such as LIFT, fistulotomy or Seton according to each patient's requirement can have a better outcome. Thus, by individualizing the treatment helps in attaining a favorable result on higher healing rate, less postoperative pain, and few impact on the function of sphincter.

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Institutional Ethics Committee

REFERENCES

- Bleier JI, Moloo H. Current management of cryptoglandular fistula-in-ano. World J Gastroenterol: WJG. 2011;17(28):3286.
- 2. Garg P, Song J, Bhatia A, Kalia H, Menon GR. The efficacy of anal fistula plug in fistula-in-ano: a systematic review. Colorectal Dis. 2010;12(10):965-70.
- 3. Whiteford MH, Kilkenny J, Hyman N, Buie WD, Cohen J, Orsay C, et al. Practice parameters for the treatment of perianal abscess and fistula-in-ano (revised). Dis Colon Rectum. 2005;48(7):1337-42.
- 4. Ege B, Leventoğlu S, Menteş BB, Yılmaz U, Öner AY. Hybrid seton for the treatment of high anal fistulas: results of 128 consecutive patients. Tech Coloproctol. 2014;18(2):187-93.
- Ommer A, Herold A, Berg E, Fürst A, Sailer M, Schiedeck T. Cryptoglandular anal fistulas. Dtsch Arztebl Int. 2011;108(42):707.
- Rojanasakul A, Pattanaarun J, Sahakitrungruang C, Tantiphlachiva K. Total anal sphincter saving technique for fistula-in-ano; the ligation of intersphincteric fistula tract. J Med Assoc Thai. 2007;13:90(3):581.
- 7. Chuang-Wei C, Chang-Chieh W, Cheng-Wen H, Tsai-Yu L, Chun-Che F, Shu-Wen J. Cutting seton for complex anal fistulas. Surgeon. 2008;6(3):185-8.
- 8. Ritchie RD, Sackier JM, Hodde JP. Incontinence rates after cutting seton treatment for anal fistula. Colorectal Dis. 2009;11(6):564-71.

- Rockwood TH, Church JM, Fleshman JW, Kane RL, Mavrantonis C, Thorson AG, Wexner SD, Bliss D, Lowry AC. Fecal incontinence quality of life scale. Dis Colon Rectum. 2000;43(1):9-16.
- Savom EP, Motto GR, Bang GA, Boukar MY, Guifo ML, Essomba A. Cutting seton fistulotomy for the management of high anal fistula: prospective evaluation of clinical results in Yaoundé. Health Sci Dis. 2016;17(3):14.
- 11. Zbar AP, Ramesh J, Beer-Gabel M, Salazar R, Pescatori M. Conventional cutting vs. internal anal sphincter-preserving seton for high trans-sphincteric fistula: a prospective randomized manometric and clinical trial. Tech Coloproctol. 2003;7(2):89-94.
- 12. Chatterjee G, Ray D, Chakravartty S. Partial fistulotomy and multiple setons in high anal fistulae. Indian J Surg. 2009;71(4):218-20.
- 13. Vial M, Parés D, Pera M, Grande L. Faecal incontinence after seton treatment for anal fistulae with and without surgical division of internal anal sphincter: a systematic review. Colorectal Dis. 2010;12(3):172-8.

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