



ORIGINAL ARTICLE

Combined Partial Fistulotomy and Cutting Seton Procedure for Complex Anal Fistula

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[Received on: 2 October 2019; Accepted on: 1 December 2019; Published on: 1 January 2020]

Abstract

Background: Fistula in ano of complex variety has been a common surgical problem. Varieties of surgical procedures are encountered for management of this disease but recurrence is a notorious complication of this disease. **Objective:** The purpose of the present study was to assess outcomes of complex fistula in ano after fistulotomy with seton procedure. **Methodology:** This prospective study was performed in Dhaka Dental College, Dhaka, Bangladesh from January 2017 to December 2018 for a period of two years. Patients were included in this study. Data collected in data collection sheet regarding demographic data, types of operative procedures, post-operative complications and outcome of patients which were then analyzed. **Result:** Total 31 patients were included in this study. Age ranged from 20 to 60 years. Male was 28(90.32%) cases and female was in 3(9.68%) cases. High trans-sphincteric fistula were 28(90.32%) cases, extra-sphincteric fistula were 3(9.68%) cases. Fistulotomy with cutting seton by rubber bands were 12(38.71%) cases, fistulotomy with cutting seton by silk 19(61.29%) cases. Seton fell on its own 16(51.61%) cases, not fell 15(48.39%). Post-operative complications were incontinence of gas 5(16.13%) cases, incontinence of stool 1(3.23%) cases, recurrence 1(3.23%) cases. **Conclusion:** Outcomes of fistulotomy with cutting seton were satisfactory in most patients. Early recovery, low complication rate were encountered in treatment of complex fistula in ano by partial fistulotomy with cutting seton procedure. [*Journal of Current and Advance Medical Research, January 2020;7(1):40-43*]

Keywords: Fistula in ano; complex; seton; incontinence

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Cite this article as: Rahman MM, Jahan N, Islam MS, Sarker MS, Roy SC, Alam MS, Ahmed TN. Combined Partial Fistulotomy and Cutting Seton Procedure for Complex Anal Fistula. J Curr Adv Med Res 2020;7(1):40-43

Funding: This research did not receive any grant from any funding agency in the public, commercial or not-for-profit sector.

Conflict of Interest: The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

Contributions to authors: Rahman MM, Jahan N, Islam MS, Sarker MS involved in protocol preparation, data collection; statistical analysis Rahman MM. Roy SC, Alam MS, Ahmed TN had involved in manuscript writing & revision of the manuscript.

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Introduction

Anorectal fistulas have been a common surgical problem since ancient times. Seton techniques are still used successfully in the treatment of complex anal fistulas. High trans-sphincteric fistulas involving the upper two-thirds of the external sphincter remain a surgical challenge because incontinence may result from the division of muscle involving more than one-third of the sphincter¹. The principles of anal fistula surgery are to eliminate the fistula, prevent recurrence and preserve sphincter function². A seton can be any type of foreign material inserted through a fistulous track.

Although setons have been used since Egyptian times, Hippocrates first detailed a method of application in the anal fistula³. The word seton is derived from the Latin ‘seta’, meaning a bristle. Currently, many different materials have been used as setons, including silk, wire, elastic bands, Penrose drain, and nylon and plastic tubing⁴. A high incidence of incontinence occurs when a simple lyingopen technique is applied. Staged fistulotomy with a seton is considered to decrease the incidence of continence problems after surgery. Cutting, loose, and chemical setons are used in order to minimize the risk of anal incontinence⁵⁻⁷. Application of a cutting seton after partial distal fistulotomy is used to treat patients with high extrasphincteric fistulae in a successful manner with lower risks of recurrence or incontinence problems⁶⁻⁹. The aim of this study was to evaluate the efficacy and safety of cutting seton as surgical management of high anal fistula.

Methodology

This study was carried out in the surgery Department of Dhaka Dental College in between January 2017 to December 2018 for a period of two years. Total 31 diagnosed cases of fistula in ano those attending in and out patient department of this hospital were enrolled in this study. All patients (males and females) in the age group 20- 60 years, who present with primary complex fistula in ano were included in this study. Fistula secondary to Crohn’s disease, tuberculosis, malignancy; recurrent fistula at presentation were excluded in this study. There were no ethical problems as before study procedure conducted, verbal consent of each patient was taken. Relevant information according to questionnaire were taken from the patients and physical examinations were done in detail. After operation patients were observed for any complication such as incontinence, recurrence. During discharge, they were scheduled post-

operative visits at 1 month, 3 months and 6 months. A one year follow up examination was performed with special regard to recurrence. All data were collected and analyzed manually in view of the objective of the study. Then the results were established in a tabulated form. Quantitative data was expressed as mean and standard deviation and qualitative data was expressed as frequency distribution and percentage. Statistical analysis was performed by using SPSS for windows version 20.0. 95% confidence limit was taken. Probability value <0.05 was considered as level of significance.

Results

A total number of 31 cases were recruited for this study after fulfilling the inclusion and exclusion criteria. In this study fistula in ano was more common in male rather than female. Males were 28(90.32%) but females were only 3(9.68%) cases (Table 1).

Table 1: Demographic Background of Patient (n=31)

Characteristics	Frequency	Percent
Age	20 to 60 years	
Male	28	90.32
Female	3	9.68

The varieties of complex fistula in ano were recorded. Here High trans-sphincteric fistula in ano were 28(90.32%) cases and Extra-sphincteric fistula in ano were 3(9.68%) cases (Table 2).

Table 2: Types of Fistula (n=31)

Characteristics of Fistula	Frequency	Percent
High trans-sphincteric	28	90.32
Extra-sphinteric	3	9.68

The different methods of treatment of complex fistula in ano were recorded. Fistulotomy with cutting seton by rubber band (Gloves) were 12(38.17%) cases and fistulotomy with cutting seton by silk were 19(61.29%) cases (Table 3).

Table 3: Types of Procedure (n=31)

Procedure	Frequency	Percent
Fistulotomy with cutting seton by rubber band (Gloves)	12	38.71
Fistulotomy with cutting seton by silk	19	61.29

The frequency of fall down of seton spontaneously or not was observed. Here seton fell on its own 16(51.61%) cases and not fell spontaneously 15(48.39%) cases (Table 4).

Table 4: Fall of Setons (n=31)

Seton fell on its own	Frequency	Percent
Yes	16	51.61
No	15	48.39

The numbers of post-operative complication were recorded. Post-operatively gas incontinence was in 5(16.13%) cases; liquid stool was in 1(3.23%) case and recurrence was in 1(3.23%) case (Table 5).

Table 5: Post-Operative Complication (n=31)

Outcome	Frequency	Percent
Gas	5	16.13
Liquid (stool)	1	3.23
recurrence	1	3.23

Discussion

The treatment of anal fistula remains challenging. The goals of treatment are draining infection, eradicating the fistulous tract, and avoiding persistent or recurrent disease while preserving anal sphincter function^{10,11}. The management of high anal fistulas needs to balance the outcomes of cure and continence. There is a risk of sphincter muscle damage during fistulotomy, and this might lead to an unacceptable risk of anal incontinence of varying degrees¹²⁻¹⁴.

Total thirty-one patients were included in this study. Fistula in ano occur more commonly in male patients. In this study males were 28(90.32%) and females were 3(9.68%). Durgun et al¹⁵ showed that fistula in ano in males and females 90.0% cases and 10.0% cases respectively in which male were more predominant.

This study showed that the different types of fistula in ano; high trans-sphincteric 28(90.32%), extra-sphincteric 3(9.68%). Sutar et al¹⁶ showed that simple fistula fourty (60.6%) who were treated with either fistulotomy or fistulectomy.

Twenty-six (39.4%) patients had either a complex fistula or multiple tracts. In this study all fistulas were complex in variety that needed fistulotomy with Seton management.

In this study there were fistulotomy with cutting seton by rubber bands (gloves) in 12(38.71%) cases where sphincter involvement less than 50% and fistulotomy with cutting seton by silk in 19(61.29%) cases where sphincter involvement >50% cases. A variety of materials have been used sutures, stain-less steel wires, depezzar catheters, medicated kshar-sootra, self-locking cables, silicone, thread, and rubber bands^{17,18}. Awad et al¹⁷ described the use of a non-toxic tin split-shot sinker to hold a 3-0 polypropylene suture on a red-rubber catheter in place. Cirocco and Rusin¹⁹ described the use a common office implement, the rubber-band ligator to manage the Seton in an outpatient setting.

This study showed that the Seton fell on its own in 16(51.61%) cases and the Seton not fell in 15(48.39%) cases. Then the patient was readmitted to the hospital for Seton removal and observed for wound healing or any incontinence developed or not. Sutar et al¹⁶ showed not fell of seton 10(66.7%) cases. The mean time for the seton to cut through the sphincter and drop was 1 month in 5(33.3%) patients¹⁶.

This study has been reported incontinence of gas in 5(16.13%) cases, incontinence of liquid stool in 1(3.23%) case and recurrence 1(3.23%) case. Here incontinence of gas and liquid stool improved with course of time. Recurrence has been managed by surgical approach. Mogahed et al²⁰ have shown overall incontinence 4(22.2%) cases of 18 cases. Among them, gas and liquid stool incontinence are found in 3(16.6%) cases and 1(5.6%) case respectively which are similar to the present study results.

The results are comparable to Chuang-Wei et al²¹ who have treated 112 patients with complex anal fistulas by applying cutting setons with elastic band from a surgical glove was used as the seton material. In their study recurrence has been found in 1(0.9%) patient. Twenty-seven (24.1%) cases are noted with continence disorders, including gas incontinence in 21(18.6%) patients and liquid stool incontinence in 6(5.4%) patients²¹.

Conclusion

Fistulotomy with cutting Seton is an effective and safe management of high anal fistula with low rate of incontinence. The slow and stable cutting of the sphincter seems to have a positive effect on the maintenance of continence. The successful outcome is associated with significant improvement in quality of life.

References

1. Michalopoulos A. Perianal Fistulas. *Tech Coloproctol* 2010;14(suppl 1):S15–S17
2. Theerapol A, So BY, Ngoi SS. Routine use of setons for the treatment of anal fistulae. *Singapore Med J* 2002;43:305–307
3. Culp CE. Use of Penrose drains to treat certain anal fistulas: a primary operative Seton. *Mayo Clin Proc* 1984;59:613–617
4. Williams JG, MacLeod CA, Rothenberger DA, Goldberg SM. Seton treatment of high anal fistulae. *Br J Surg* 1991;78:1159–61
5. Lunniss PJ, Thompson JPS: The loose Seton; in Phillips RKS, Lunniss PJ (eds): *Anal Fistula*. London, Chapman & Hall, 1996, 87–94.
6. Goldberg SM, Aguilar JG. The cutting seton; in Phillips RKS, Lunniss PJ (eds): *Anal Fistula*. London, Chapman & Hall, 1996, 95–102.
7. McCourtney JS, Finlay IG. Setons in the surgical management of fistula in ano. *Br J Surg* 1995;82:448–452.
8. McCourtney JS, Finlay IG. Cutting seton without preliminary internal sphincterotomy in management of complex high fistula-in-ano. *Dis Colon Rectum* 1996;39:55–58
9. Pearl RK, Andrews JR, Orsay CP, Weisman RI, Prasad ML, Nelson RL, et al. Role of the seton in the management of anorectal fistula. *Dis Colon Rectum* 1993;36: 573–579
10. I-Vasilevsky CA, Gordon PH. Benign Anorectal: Abscess and Fistula. In: Wolff BG, Fleshman JW, Beck DE, Pemberton JH, Wexner SD, eds. *The ASCRS Textbook of Colon and Rectal Surgery*. New York, NY: Springer; 2007: Chapter 13.
11. Williams JG, Farrands PA, Williams AB, et al. The treatment of anal fistula: ACPGBI position statement. *Colorectal Dis* Oct 2007;9 Suppl 4:18-50
12. Lunniss PJ, Kamm MA. Factors affecting continence after surgery for anal fistula. *Br J Surg*. 1994;81:1382–85
13. Garcia-Aguilar J, Belmonte C, Wong DW, Goldberg SM, Madoff RD. Anal fistula surgery. Factors associated with recurrence and incontinence. *Dis Colon Rectum* 1996;39:723–729
14. Bokhari S, Lindsey I. Incontinence following sphincter division for treatment of anal fistula. *Colorectal Dis* 2010;12:35–39
15. Durgun V, Perek A, Kapan M, Kapan S, Perek S. Partial fistulotomy and modified cutting seton procedure in the treatment of high extrasphincteric perianal fistulae. *Dig Surg* 2002;19:56-58
16. Sutar MA, Ramakrishna Y, Arshi NI. Role of seton in the management of Fistula in Ano. *Int J Contemporary Med Res* 2016;3(6):1710-1713
17. Awad ML, Sell HW, Stahlfeld KR. Split-shot sinker facilitates seton treatment of anal fistulae. *Colorectal Dis* 2009;11:524–26.
18. Takesue Y, Ohge H, Yokoyama T, et al. Long-term results of seton drainage on complex anal fistulae in patients with Crohn's disease. *J Gastroenterol* 2002;37:912–915.
19. Cirocco WC, Rusin LC. Simplified seton management for complex anal fistulas: a novel use for the rubber band ligator. *Dis Colon Rectum* 1991;34:1135–1137
20. Mogahed M, Elwakeel B, Boraii S. Cutting Seton as surgical management of high anal fistula. *Al-Azhar Assiut Med J* 2015;13(2): 10-14
21. Chuang-Wei C, Chang-Chieh W, Cheng Wen H, Tsai-Yu L, Chun-Che F, ShuWen J. Cutting seton for complex anal fistulas. *Surgeon*. 2008;6(3):185-8.