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Use of Loose Seton in Management of Complex Fistula-in-ano: study in a tertiary care hospital, Rajshahi, Bangladesh.

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Abstract
Introduction: *Loose seton placement developed in an attempt to avoid anal sphincter division and therefore reduce the risk of incontinence. A complex anal fistula considered which falls in any one of these conditions, that is, the tract crosses >30% to 50% of the external sphincter, anterior tracts in females, multiple tracts, recurrent, or the patient has pre-existing incontinence, local irradiation, or Crohn's Disease.*
Aim of the study:*Theaim of the research was to assess the use of loose seton in the management of complex fistula- in -ano.*
Methods:*This prospective observational study was conducted in the Department of Surgery of Rajshahi Medical College Hospital, Rajshahi, Bangladesh during the period from January2016 to December 2016. Primary data were collected from respective department and analysis done by SPSS-20 and MS_Excel-2016.*
Result:*At the end of 1 month 11(20.00%) of the patients had their wounds healed. Again 35(63.64%) wounds of the patients healed in 3 months. The recurrence rate of the patients 8(14.55%) and lastly about 1(1.82%) found incontinence, whom all underwent by loose seton, finally the success rate of loose seton found 46(83.64%).*
Conclusion:*Complex fistulae may be successfully treated by various techniques, but the two-stage setonfistulotomy technique was an effective method for this type of fistula.*
Key words:*Management, loose Seton, Complex fistula-in-ano.*

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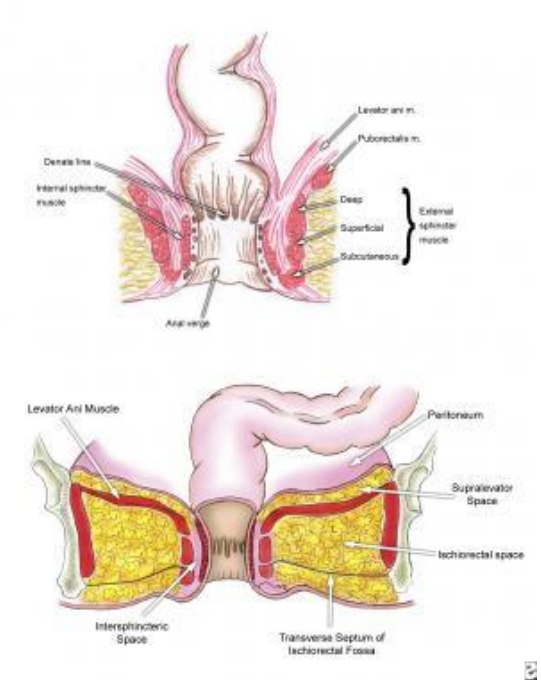
I. Introduction

Fistula-in-ano is one of the commonly encountered surgical problems with prevalence of 1.2 to 2.8/10000[1]. It is characterized by severe pain and discharge. They arise following infection near the anal canal, or secondary to specific conditions of the intestines like Crohn's disease, anorectal tumors, anal fissures, prior radiation therapy, trauma, and infections such as tuberculosis[2]. By meaning 'cryptoglandular abscess' means abscess arising from the anal glands. Because of the close association of abscess and fistula in aetiology, anatomy, pathophysiology, therapy and morbidity, it is appropriate to consider both entities as one, i.e., abscess–fistula or a fistulous abscess[12]. It is also appropriate to consider an abscess as the acute and a fistula as the chronic state of anorectal suppuration[12]. The classification of fistula-in-ano, as described by Parks et al. is based on the location of its tract in relation to anal sphincter muscle: intersphincteric(low), transsphincteric (high or low), suprasphincteric (high),extrasphincteric(high)[3]. An anal fistula termed"complex" fistula is modification of the Park's classification, which falls in any one of these conditions, that is, the tract crosses >30% to 50% of the external sphincter, anterior tracts in females (because of attenuated nature of the sphincter complex), multiple tracts, recurrent, or the patient has pre-existing incontinence, local irradiation, or Crohn's Disease (inflammatory bowel diseases)[1,3]. Due to the involvement of the anal sphincter, the treatment of complex fistula poses a high risk for impairment of continence[4,5].Several techniques for the treatment for anal fistula have been reported, the choice of treatment largely dependent on the surgeon's preference. Simple treatment approaches include fistuolotomy, fistulectomy, or placement of a seton (cutting or loose)[6]. Cutting seton work on the principal that the presence of non-absorbable material in the fistula tract results in inflammation and reactive fibrosis[6]. Sequential tightening of the seton results in the sphincter being slowly cut through (staged fistulotomy), allowing for adequate fibrosis to ensure sphincter integrity[10]. However, in recent years, a considerable volume of surgeons has abandoned their use due to significant patient discomfort postoperatively[9] and a higher incidence of incontinence (range 20–67 %)[6,9]. Loose seton placement developed in an attempt to avoid anal sphincter division and therefore reduce the risk of incontinence[6].



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Typically placed after abscess drainage, loose seton placement also incites a fibrotic reaction which may result in primary closure or promote fistula tract migration to a sufficient point, whereby a ‘‘safe’’ controlled fistulotomy or fistulectomy can be performed, as in the majority of our cases[11,13]. These treatments have variable rates of success and tolerance, and debate continues with regard to the preferred treatment for fistula-in-ano[2].

In our study, we used loose seton and evaluated our experience in managing fistulas. Aim of the study was to find out the use of loose seton in the management(healing, recurrence,incontinence) of complex fistula-in-ano.

II. Objectives

General Objective

To assess the use of loose seton in the management of complex fistula- in –ano.

Specific Objective

To find out the efficacy and tolerance as well as recurrences rate by using of loose seton in complex fistula-in-ano.

III. Methodology & Materials

This was a prospective observational study and was conducted in the Department of Surgery of Rajshahi Medical College Hospital, Rajshahi, Bangladesh during the period from January 2016 to December 2016. All patients (males and females) in the age group 20-80 years, who present with primary fistula-in-ano included in the study but following some criteria (Data collected included age, gender, etiology, relevant medical background, Park’s classification (including a history of diabetes, inflammatory bowel disease, and radiotherapy treatments), and operative details such as location and categorization of the fistula tract) the study people were selected. The study carried by the patients who have complex fistula-in-ano. Initially, 270 patients were screened among them 55 patients were finally select as study population. Primary data collected in SPSS-20 and analyze the data as well as figure out of the data done by SPSS-20 and MS_Excel-2016.

IV. Result

In total two hundred and seventy (270) patients were screened among them 55 consecutive patients underwent loose Seton placement for the management of complex anal fistula and were selected as study participants. All patients were followed up 8 months after clearance of fistula. In this study, 45(81.82%) were males and 10(18.18%) were female [Figure-I]. The maximum patients were in 40-60 age range about 31(56.36%). After that 15(27.27%) found in 20-40 years as well as 9(16.36%) patients were in 60-80 years [Figure-II]. Etiology of the fistulae included perianal abscess 18(32.73 %), Crohn’s disease 2(3.63%), ulcerative colitis 3(5.45%), TB10 (18.18%) and idiopathic 22(40.00 %) [Table-I]. At the end of 1 month 11(20.00%) of the

patients had their wounds healed. Again 35(63.64%) wounds of the patients healed in 3 months. The recurrence rate of the patients 8(14.55%) and lastly about 1(1.82%) found incontinence, whom all underwent by loose Seton, finally the success rate of loose Seton found 46(83.64%) [Table-II].

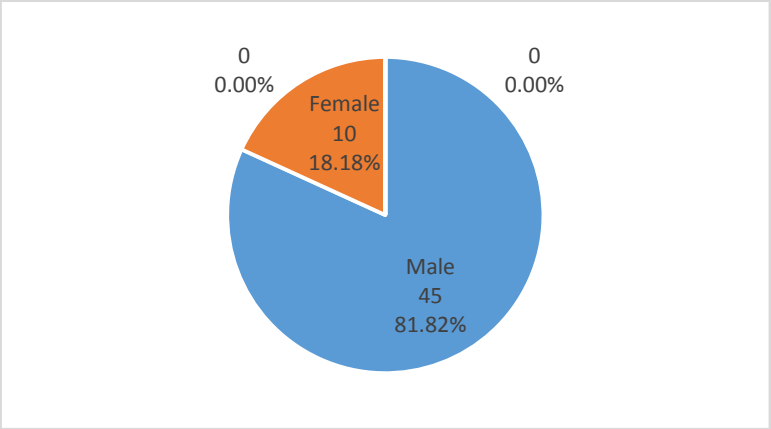

Figure-I: showing the gender prevalence of the study people (N=55)

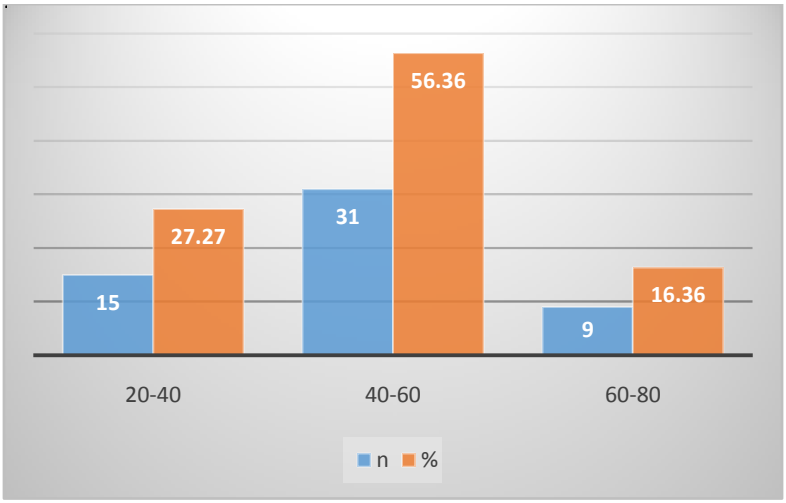

Figure-II: showing the age prevalence of the study people (N=55)

Table-I: Distribute the study patients according to the etiology of fistulas (N=55)

Etiology of fistulas	N	%
Perianal abscess	18	32.73
Crohn's diseases	2	3.63
TB	10	18.18
Ulcerative colitis	3	5.45
Idiopathic	22	40.00

Table-II: Outcomeafter surgery of loose Seton in complex fistula (N=55)

Outcome	N	%
Healing at 1 month	11	20.00
Healing at 3 months	35	63.64
Recurrence	8	14.55
Incontinence	1	1.82
Success rate	46	83.64

V. Discussion

Historically, seton placement was the mainstay of surgical management for most fistulae-in-ano. The hypothesis behind the placement of a seton was that they initially facilitate the drainage of an associated

abscess, while promoting resolution of the fistula tract by inciting a local inflammatory reaction[16]. The tenet of fistula-in-ano treatment is to close the fistula tract without compromising continence[2,14,15]. The surgical management of anal fistulae remains largely influenced by individual surgical experience and preference[6]. The principles of conventional surgical treatment (fistulotomy, fistulectomy) involves careful division of the skin, subcutaneous tissue, and internal anal sphincter muscle (and the external anal sphincter for low-lying fistulae) while aiming to avoid or minimize the risk of incontinence or fistula recurrence[16].

In between March 2014 and February 2016, from 270 patients 55 consecutive patients underwent loose seton placement for the management of complex anal fistula. All patients were followed up 8 months after clearance of fistula. Maximum male patients suffer this fistula. In this study, 45(81.82%) were males and 10(18.18%) were female. Another study carried in Turkey there found 31 males and 19 females[8]. Again in another study 69.5 % found male[6].The maximum patients were in 40-60 age range about 31(56.36%). After that 15(27.27%) found in 20-40 years as well as 9(16.36%) patients were in 60-80 years.Hasanclais et al. 2019, found the mean age was 38.6±14 years[8].Etiology of the fistulae included perianal abscess 18(32.73 %), Crohn's disease 12(21.82%), ulcerative colitis 3(5.45%), and idiopathic 22(40.00%). A study in Italy the etiology of the fistulae included perianal abscess (34 %, n = 68), Crohn's disease (23%, n = 46), ulcerative colitis (5 %, n = 10), and idiopathic (38 %, n = 76).

At the end of 1 month 11(20.00%) of the patients had their wounds healed. Again 35(63.64%) wounds of the patients healed in 3 months. So, the success rate found 46(83.64%). The primary success rates with loose setons have been reported to be as high as 73%[17,18]. In another series, 96 % of patients tolerated seton placement and subsequent changes with minimal discomfort[8]. The recurrence rate of the patients 8(14.55%) such as 6 % having recurrence of the fistula tractfound in another study (3) again about 1(1.82%) found incontinence, whom all underwent by loose seton.Incontinence rates associated with loose setons have been extensively investigated with publications reporting substantially lower rates compared to cutting setons, ranging from 5 to 17 % in previous reports[19.20]. In addition, incontinence with long-term in-dwelling loose setons is rare[21].Many advocate that loose seton placement should be the gold standard in the management of complex fistula[2].Overall loose seton placement is generally well tolerated, and constitutes a pragmatic and low-cost solution to this common and difficult condition[8].

VI. Limitations of the study

Patient selection bias was present in our study along with bias in subjective recording and the lack of long-term follow-up. So, the result may not represent the whole community.

VII. Conclusion and recommendations

Complex fistula may be successfully treated by various techniques, but the loose seton technique was an effective method for this type of fistula. Management of complex anal fistula still proves a significant challenge to treating surgeons. Though most have their own particular management protocol, loose seton placement remains a viable and successful treatment modality. It is a well-tolerated procedure for the management of complex fistula-in-ano.We report to our knowledge the largest consecutive series of loose seton placement in the management of complex fistula-in-ano which observed a high tolerance and primary success rate with low recurrence.

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