

Role of Seton in the Management of Fistula-in-ANO

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ABSTRACT

Introduction: A seton is a foreign body which is passed through the fistula and tied at its exit to the skin. The classical treatment for perianal fistulas is to either fistulotomy or fistulectomy. Aim of the research was to study the role of seton in the management of fistula-in-ano. To find out what necessitates the use of seton in fistula-in-ano

Material and Methods: This study is a prospective study conducted at Kerudi hospital and research centre Bagalkot, Karnataka. The present study has undergone descriptive and inferential statistical analysis. Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale.

Results: At the end of 1 month, 63.6% of the patients who underwent fistulotomy had their wounds healed while in seton group 46.7% of the wounds healed and in fistulectomy group 57.1% of the wounds had healed and the values were not found to be statistically significant ($p=0.592$).

Conclusions: This study has shown that seton is an effective tool for the treatment of complex anal fistulas. The median follow-up period is more than 1 year, and the success rate appears to be high. Overall quality of life is improved in all the patients in whom seton was placed, with not much of post operative complications-pain or pruritus. Patients were satisfied with the treatment offered.

Keywords: fistula-in-ano, seton, fistulotomy, fistulectomy.

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, tuberculosis. 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. It is also appropriate to consider an abscess as the acute and a fistula as the chronic state of anorectal suppuration.

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, transsphincteric, suprasphincteric, or extrasphincteric.² The term 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, multiple tracts, recurrent, or the patient has pre-existing incontinence, local irradiation, or Crohn's Disease. Due to the involvement of the anal sphincter, the treatment of complex fistula poses a high risk for impairment of continence.^{3,4}

The treatment of perianal fistulas is diverse because no single technique is universally effective. Surgery is the mainstay of treatment of anal fistulas. The principles of anal fistula surgery

are to eliminate the fistula, prevent recurrence and preserve sphincter function.⁵

Fistulotomy can treat simple and low anal fistulas safely, but in case of complex fistulas management needs to be balanced between the outcome of cure of fistula and anal continence. During fistulotomy there is a risk of sphincter muscle damage, and this might lead to varying degrees of an unacceptable risk of anal incontinence (AI).⁶⁻⁸ The amount of damaged muscle, pre-existing sphincter damage, and scarring of the anal canal are the main dependent factors which decide the degree of anal incontinence. Several alternative treatment strategies have been practiced in order to preserve the sphincter mechanism, including draining setons, cutting setons,⁸⁻¹¹ rectal mucosal or full-thickness advancement flaps,¹²⁻¹⁴ rerouting,¹⁵ two-stage seton fistulotomy,¹⁶ fistulectomy, anal fistula plug,¹⁷⁻¹⁹ ligation of the intersphincteric fistula tract (LIFT),^{20,21} fistulotomy with reconstruction of the sphincter mechanism,²² or fibrin glue.²³ Recently, Video-assisted Anal Fistula Treatment (VAAFT) have been introduced, which is a minimally invasive and sphincter saving technique for treating complex fistulas.²⁴ The studies related to this, are still preliminary and need longer follow-up for validation.

In our study, we used cutting seton and evaluated our experience in managing fistulas. Aim of the study was to know the role of seton in the management of fistula-in-ano. Objectives included in the study were to find out what necessitates the use of seton in a patient having fistula-in-ano by pre-operative assessment with endoanal ultrasound and intra-operative findings, to calculate the frequency of putting seton in patients of fistula-in-ano by comparing with patients in which seton is not placed, to evaluate the effectiveness of fistula healing when seton is placed by periodic follow up and to calculate the recurrence rate and incontinence rate associated with seton use.

MATERIAL AND METHODS

This study is a prospective study conducted at Kerudi hospital and research centre Bagalkot, Karnataka from May 2012 to October 2013, after getting approval from the hospital research and ethics committee. Informed consent taken for all the patients.

Material

Sixty-six patients with complaints, clinical signs suggestive of

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primary fistula- in-ano between the age group of 20 years and 80 years were included in the study.

Inclusion Criteria

- All patients (males and females) in the age group 20-80 years, who present with primary fistula-in-ano.

Exclusion Criteria

- Fistula secondary to 1) Crohn's Disease
2) Tuberculosis
3) Malignancy
- Recurrent Fistula at presentation.
- Not willing to participate in the study
- Pregnant females.
- Immuno-compromised patients.

Study Design: A prospective observational study between May 2012 and October 2013, consisting of sixty-six consecutive patients fulfilling the above mentioned selection criteria were treated with appropriate fistula surgery, depending on the type of fistula.

Fifteen (22.7%) patients were treated with seton, twenty-two (33.3%) patients were treated with Fistulotomy alone, and twenty-eight (42.8%) patients treated with Fistulectomy.

Procedure done	No. of patients (n=66)	%
Fistulotomy alone	22	33.3
Fistulotomy+ seton	15	22.7
Fistulectomy	28	42.4
Others	1	1.5

Table-1: Procedure done

Intra-op findings	No. of patients	%
Simple	40	60.6
Multiple	5	7.6
Complex	21	31.8
Total	66	100.0

Table-2: Intra-op findings of patients studied

Seton fell on its own	No. of patients (n=15)	%
No	10	66.7
Yes	5	33.3
Total	15	100.0

Table-3: Seton fell on its own among the procedure Fistulotomy+ seton

Outcome	Fistulotomy alone (n=22)	Fistulotomy+ seton (n=15)	Fistulectomy (n=28)	P value
Healing at 1 month				0.592
Yes	14(63.6%)	7(46.7%)	16(57.1%)	
No	8(36.4%)	8(53.3%)	12(42.9%)	
Healing at 3 month				0.557
Yes	21(95.5%)	11(73.3%)	25(89.3%)	
No	1(4.5%)	4(26.7%)	3(10.7%)	
Recurrence				0.403
Yes	1(4.5%)	3(20%)	3(10.7%)	
No	21(95.5%)	12(80%)	25(89.3%)	
Incontinence				1.000
Yes	1(4.5%)	0(0%)	1(3.6%)	
No	21(95.5%)	15(100%)	27(96.4%)	

Table-4: Association of outcome according to Procedure done

One patient underwent simple drainage of the intersphincteric collection.

STATISTICAL ANALYSIS

The present study has undergone descriptive and inferential statistical analysis. Continuously measured results are presented on Mean \pm SD (Min-Max) and categorically measured results are presented in Number (%). Consideration of significance is at 5 % level of significance. Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups.

RESULTS

Forty patients (60.6%) had simple fistula who were treated with either fistulotomy or fistulectomy. Twenty six patients had either a complex fistula or had multiple tracts. Fifteen of these patients were offered seton as the management modality (table-2).

The mean time for the seton to cut through the sphincter and drop was 1 month. In 10 patients(66.7%), the seton did not fall, and patient was readmitted to the hospital for seton removal (table-3). Overall, Complete healing was achieved in 37 cases (56.1 %) at 1 month and in 58 cases (87.9 %) at 3 months.

At the end of 1 month, 63.6% of the patients who underwent fistulotomy had their wounds healed while in seton group, 46.7% of the wounds healed and in fistulectomy group, 57.1% of the wounds had healed and the values were not found to be statistically significant (p= 0.592) (table-4).

At the end of 3 months, 95.5 % of the wound had healed in patients who underwent fistulotomy. Patients who had seton as the treatment modality, 73.3 % of their wounds healed, while with fistulectomy, complete wound healing was seen in 89.3% of the cases.

Two out of 66 patients (3.0%) were observed as having incontinence, one having transient stool incontinence and one had gas incontinence, both had low transsphincteric fistula. None of the cases treated with seton had anal incontinence.

DISCUSSION

The ano-perineal abscess/sepsis arising from the glands of the anal crypts leads to Fistula formation. It is has a primary internal orifice in the anal canal, connecting fistulous tract, and an abscess and/or secondary external (perineal) orifice with purulent discharge. Curative treatment is not by anti-biotics but by surgery. The treatment of an abscess is incision and drainage on emergency basis. The primary aim of treatment in perianal

sepsis is to control infection without sacrificing anal continence. Second stage or the definitive treatment of the fistulous tract can wait. Various techniques, such as the fistulotomy, fistulectomy and advancement flap procedure and VAAFT, have been proposed.²⁴ The basis for all treatment options is fistulotomy but the specific technique depends on the height of the fistula in relation to the sphincteric mechanism and anal continence. Overall fistulotomy results are excellent with due risk of anal incontinence. This factor made it inevitable to grow interest in sphincter sparing techniques such as the mucosal advancement flap, the injection of fibrin glue, the plug procedure etc. The results of these procedures are not proved good enough and leave learning space for improvement.

In a study by Pearl RK et al (1993),²⁵ to evaluate the role of seton in 116 patients undergoing treatment of fistula; Setons were employed as part of a staged fistulotomy in 65 patients (56 percent) to identify and promote fibrosis around a complex anorectal fistula. Other indications for seton placement were anteriorly situated high transsphincteric fistulas in 24 women (21 percent) and three patients with massive anorectal sepsis (floating, freestanding anus) (2.5 percent). In addition, setons were used to preclude premature skin closure and promote controlled long-term fistula drainage in 21 patients with severe anorectal Crohn's disease (18 percent) and in three patients with AIDS (2.5 percent).

In our study of 66 patients with fistula in ano, fifteen patients underwent seton placement and rest underwent sphincter cutting procedures, namely- fistulotomy and fistulectomy. Complete healing was seen in 56.1% of the patients at 1 month and 87.9% of the patients at 3 months. In patients who had seton, complete healing was observed in 46.7% at 1 month and 73.3% at 3 months. Another 2 patients had their healing in between 3-6 months.

In this study, there were 7 cases of recurrence with overall recurrence rate of 10.6%. However, only 3 cases of recurrence out of 15 patients was seen in patients in whom seton placement was done i.e. 20% recurrence rate. The persistence (recurrence) rate varied with the type of fistula i.e simple or complex, but there was no statistically significance relation between the type of surgical treatment and recurrence ($P = 0.403$). The difficult target is the complex fistula, that is, those fistulas with any of these characteristics: primary track crossing 30–50 % of the external sphincter (high-transsphincteric, suprasphincteric, and extrasphincteric), anterior track in a female, multiple tracks.

In a study by Eitan, Koliada and Bickel (2009) the recurrence rate of the fistula or suppuration was reported as 19.5% in cases of transsphincteric fistulae.²⁶ Factors associated with recurrence included type and extension of the fistula, lack of identification or lateral location of the internal fistulous opening, previous fistula surgery and the surgeon experience

CONCLUSION

Fistula is more common in the males. Even though only one-fourth of the patients were preceded by an acute abscess, it's in accordance with the literature. This study has shown that seton is an effective tool for the treatment of complex anal fistulas. The median follow-up period is more than 1 year, and the success rate appears to be high. Overall healing period is more in seton group as per our study. Recurrence rate seems to be

more for the seton group but it depends on the technique used and identification of the secondary tracts and internal opening at the time of operation and recurrence rate depends on these factors. The basic purpose of seton to prevent incontinence, it has been shown in our study as well, that seton preserves continence in the patients with overall success in fistula healing. An important practical disadvantage of the conventional seton treatment, namely the need for postoperative adjustments, is also eliminated with cutting seton. Overall quality of life is improved in all the patients in whom seton was placed, with not much of post operative complications- pain or pruritus. Patients were satisfied at the end of the treatment.

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